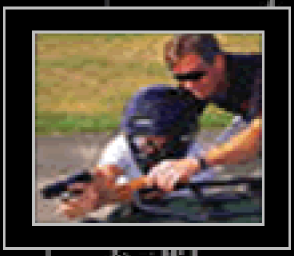
THE BASICS
FIREARMS
AMMUNITION
ACCESSORIES
BODY ARMOR
RULES
CHARACTERS
FCG
ADDITIONS/FCG
SEARCH



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The Webring

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Ammunition in General

Ammunition is one part of a firearm that Shadowrun writers have gone pretty far overboard with, in my opinion. Good enough for fun I suppose, but not enough to satisfy my sense of reality. Weapon caliber, functionality, and range of the ammunition itself have all been disregarded in the interest of simplicity. Understandable. But as far as I'm concerned, I'd like a better, more realistic explanation for some of the ammunition produced for the system.

Disspelling and Explaining

From page 276 of Shadowrun, Third Edition: ***"Many weapons offer two versions, for standard loads or for caseless ammunition."*** This is not a very well researched statement. Offering a wide variety of weapons using both principles would not be very cost-effective for the manufacturer of the weapon. The entire system of operation between the two principles is very different. Not to mention the implied politics involved with allowing the general public to have access to such weapons. For more information on caseless ammunition, please click here.

Another disagreeable statement occurs on page 279: ***"...each kind of gun can trade ammunition with another of its class."*** If you're a GM and want to let your players get away with that purely for simplicty's sake, that's fine. But it has no basis in reality and nullifies a great way for gamemasters to screw their players! Firearms are designed for different uses. Even firearms of a specific class are designed for different things. For instance, it wouldn't be a good idea to use a rifle chambered in .243 Winchester for hunting elk. There simply isn't enough bullet there to affect the animal reliably and quickly. A .338 Winchester Magnum would be a much better choice. These cartridges, both found in rifles of the Sport Rifle class, cannot be interchanged.

There are far more choices for ammunition than just APDS, Flechette, Explosive, Gel, Tracer, and "Regular". There are shaped bullets that use air pressure to produce more stopping power (such reverse ogive), there are bullets designed to destabilize and tumble after they hit a certain medium (read: flesh) in order to cause more damage (such as the 5.45x39mm Soviet's bullet), and bullets designed soley to disrupt tissue while causing the least amount of collateral damage (such as the Glaser Safety Slug).

Most of FASA's published ammunition for small arms is based off of ammunition which is used on a much larger scale, such as anti-materiel, anti-tank and artillery ammunition. Some of these types of ammunition would be rather useless on a small arms scale simply because there isn't enough space to fit the active materials into such a small bullet. Regardless, I'm going to try and explain these ammunition types.

A Brief Explanation of Ammunition Types

APDS stands for **Armor Piercing Discarding Sabot.** (That's *say-bow*, French for "shoe".) **The term "Armor Piercing" is not synonymous with APDS.** APDS was orginally designed as an anti-tank or anti-armor munition. It is used today in the Phalanx Close-In Weapons Systems (CIWS) for ship-based missile defense, and in the smallest form that I'm aware of, the 7.62mm Saboted Light Armor Penetrator, or SLAP round (US M948), very similar to the .50 caliber BMG SLAP round (US M903) used in the US M2 heavy machine gun.

An interesting fact for people who would use ballistic forensics to match a bullet to its gun, *a discarding sabot bullet does not show any rifling characteristics*. The sabot itself is what comes in contact with the barrel, and it discards from the bullet prior to impact.

For more information, click the SLAP/APDS link to your left.

Flechette is a broad term. Literally translated, it means "little arrow". It could mean a single, smaller projectile is used in a larger casing (as in a discarding sabot load), or it could mean numerous small projectiles in a single casing (similar to shot used in shotguns). It always means that one end of the projectile is pointed and meant to pierce the target.

As flechettes are explained in Shadowrun, the ammunition would be nearly useless beyond a few meters.

There are two ideas which we can use to explain **Explosive** ammunition. The first is **Explosive-tipped bullets**. Explosive-tipped bullets are essentially hollowpoint bullets with an explosive element designed to dramatically and rapidly enhance bullet expansion upon impact. (I would say this covers standard explosive ammo per Shadowrun rules.) The second are **Explosive bullets**. Explosive bullets are are traditional micro-grenades that cause the whole bullet to be blown apart on impact. (EX explosive per Shadowrun rules.)

Like most ammunition in Shadowrun, explosive ammunition is based off of real ammunition of a larger scale than most small arms cartridges. The smallest caliber explosive round I'm aware of is the .50 caliber (BMG) MK211 MOD 0 High Explosive Incendiary Armor Piercing (HEIAP) round used in the USMC M82A1A Special Application Scoped Rifle. Explosive ammunition should only be available in large diameter small arms bullets, such as .45-.50 caliber. The larger the bullet, the more explosive can be packed into it, giving that load a greater explosive effect. In smaller caliber bullets, the overall wounding effect would be no greater than using a much cheaper hollowpoint or frangible bullet, or a larger caliber round.

Incendiary ammunition is designed to ignite flammable materials after impact. The immense heat created by friction at impact will ignite a slow-burning chemical incased inside of the bullet. The bullet itself does not explode.

Gel rounds have a lot more potential to kill a person than is let on, as does anything coming out of the business end of a gun. The gel is lighter than a bullet, so wind resistance slows it down considerably. This also flattens it out, allowing it to smack against its target with relatively low kinetic energy.

These types of loads aren't usually available for anything but shotgun or grenade launcher-sized cartridges due to the fact that range and power would be severely limited with a conventional-sized bullet load. Range should be reduced by half for gel rounds.

Tracers are available for all kinds of ammuntion and are usually reserved for machine guns for the purpose of aiming. Tracers are an exclusive category of ammunition. There are such things as Armor Piercing Tracer munitions, Incendiary Tracer munitions, and Armor Piercing Incendiary Tracer munitions.

Rifle Velocity and Armor Penetration

Rifles are designed to fire a bullet over a much longer range than pistols. This is accomplished by a higher powder weight to bullet weight ratio, with the end result being that the bullet leaves the rifle at a much higher velocity. Rifle bullets are also shaped to better cut through the air, meaning that air resistance doesn't affect a them as much it does a pistol bullet. This helps rifle bullets retain velocity. In addition to providing a much longer effective range, these attributes also help in penetrating body armor.

When a bullet is fired at body armor, the armor attempts to catch the bullet in a web of very strong synthetic fibers, causing the bullet to deform and displace its energy over a much larger area than it would have otherwise. Compared to rifle bullets, pistol bullets are relatively slow, heavy, bluntly shaped, and most often are designed to expand on impact with the target in the interest of producing a larger wound cavity. These properties work against the bullet when it impacts body armor, allowing the armor more surface area to catch the bullet and displace its energy.

When a rifle bullet impacts body armor, a relatively large amount of kinetic energy, derived through velocity, is focused on a very small area at the point of the bullet. Focusing that energy on such a small area helps the bullet defeat the individual fibers of the body armor material, causing it to tear, allowing the bullet to pass through it. This effect is only magnified when the bullet is of a non-expanding type, or even worse, an armor-piercing type.

For this reason, as a very simple rule, I recommend applying a flat **x0.5 armor penetration modifier** to all rifle cartridges firing non-deforming bullets at a velocity above 2300 feet per second. The effects of AP bullets are added to this modifier. More in-depth rules can be found in the Ammunition By Caliber section.

Adding Structure

I have devised a table used to determine ammunition "swappability" in current Shadowrun firearms. You can check it out by following the link below, or clicking the link to your left. I also have a table designed to show applicable Damage Codes per cartridge, instead of the weapon itself having its own Damage Code. While this makes sense for melee weapons, it does not carry over well to firearms.

- Ammunition By Caliber (Advanced Rules)
- Cartridges and Damage Codes
- Current Shadowrun Firearm Cartridge Table

Additionally, here is a picture of a few pistol cartridges, shown as a size comparison.

The Basics

kinetic energy n. 1. The energy possessed by a body because of its motion, equal to one half the mass of the body times the square of its speed. **KE=½*m*v²**

"A well-regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed."
- *Second Amendment of the Constitution of the United States of America*

Have a suggestion for this section of the site? Send it here!

Guns. Lots of Guns.

"You're acting like a first year f*ing thief! I'm acting like a professional!"**
-Mr. Pink, Reservoir Dogs

Throughout the years I've spent playing Shadowrun, I've come to realize something. The bulk of Shadowrun players know next to nothing about how a firearm functions. That's understandable. Not everyone wants or needs to take the time to learn about them just to play a game. That's why I've created this site. To educate and inform those interested in firearms, and to create rules that come closer to reflecting the reality of firearms.

Though Shadowrun takes place in a futuristic, Gibson-meets-Tolkien kind of world that resides in the imaginations of its players, its story line is set in a near-future Earth. That means the laws of physics as we know them still apply. While "realism" may be a word that inspires conniption fits from the occasional gamer, the word "practicality" should not. Even in a fairly abstract role playing game system, anyone should be able to understand that some things tend to be far more abstract than others, which makes them impractical in terms of playability. With that in mind, statistics and ratings for firearms should be consistent within the system.

I know that some people are bound to have a problem with some of these weapons. That basically comes down to a difference in how we perceive the world of Shadowrun and how we like to have fun playing within it. Different groups play the game differently. If your game is geared more toward a Hong-Kong-Blood-Opera-Flying-Lead-And-Kung-Fu type thing, these rules probably aren't going to make you very happy if your character ends up looking down the bore. Lethality is definitely enhanced.

I'll try to explain my view a little more thoroughly. Guns kill, soldiers die, and good shadowrunners don't do much shooting. It's not good for business. Loud noises and dead bodies tend to cause investigation. Investigation draws attention to people who must live with a high degree of anonymity in order to keep their clients happy so that they can get paid. Believe it or not, shadowrunning is a service industry. It exists to circumvent the rules that a society has chosen to impose upon itself through a little thing called government. If you get caught, you'll get punished. One of the better ways to keep from getting caught is to keep your face out of the spotlight and stay safely in the shadows. Tact. If you're dumb enough to leave a trail of bodies and evidence in your wake, you're gonna find yourself in a little box, sitting on top of a seventeen-inch cybercock in no time. And it will be about as straight and narrow as the choices you made before you got yourself into that little predicament. It's just a matter of time. But if you can manage to pull off jobs without drawing attention to yourself, that risk turns into reward.

Obviously, these ideas can conflict with the way that some people like to play the game. There's nothing wrong with playing the game the way it is presented in published Shadowrun material. And there's nothing wrong with playing it using your own rules, either. As long as you're having fun, you're doing it right.

Issues

"Why do they cost so much?" Because firearms are expensive. Not normally because they're that difficult to make, but because the corp making them wants their cut, and the politicians want to be well paid for the crap they have to take from the people and committees fueled by the media that don't seem to really know what they're talking about. The firearms presented in the plethora of official Shadowrun materials are excessively cheap, assuming one Nuyen is equivalent to one US Dollar.

(Since I wrote the above many years ago, I've had to correct myself...) According to Wordman's excellent Sixth World site, one Nuyen is equivalent to five UCAS dollars. This is apparently stated on page 84 of the **Neo Anarchist's Guide to North America** and I missed it back when I had access to a copy. If you'd like, you can assume that the prices I have listed are in UCAS dollars rather than Nuyen and divide by five to get the actual cost in Nuyen. If that has changed with the release of **Shadows of North America**, please let me know, or if you're in the position to, send me a copy!

"Why do they generally weigh less than other Shadowun firearms?" Because the weights listed in Shadowrun are notoriously screwy. What is listed under weight ratings is called a "kilogram". It should actually be called a pound. Things are excessively heavy in Shadowrun because of this. If you'd like to be a little more precise, one pound (lbs) equals 453 grams (g). You do the math (kg/0.4536=lbs). There's a measurement converter here.

Another thing I've already heard is that the guns "aren't different enough." The firearms presented here have been designed more for player preference and an attempt at displaying a bit more practicality than any big changes in game effect. For instance, many of the pistols available here are very similar to each other as far as the game is concerned because the things that make them unique in reality (i.e. double action or single action trigger mechanisms, etc...) do not make any difference in Shadowrun's system of rules. However, if you're a gamemaster, once you've learned the details of how certain firearms function, you can use certain limitations that every firearm possesses in a realistic manner to control situations that might otherwise be argued against during game play. A deeper level of detail can also help players emerse themselves into character.

The firearms listed here will also show you what the FCG can do for you. More information on the FCG can be found below.

Firearm Ratings

On each firearm page, you will find a table of statistics that looks like this:

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P3 ERASe	**10x24mm**	**Heavy Pistol**	**5**	**15 clip**	**SA/BF**	**9M**	**1.9**	**12/18 days**	**3,000 ¥**

Model: Designates the model name, number, or abbreviated name of the firearm.

Caliber: Adds a dimension to the Shadowrun system by designating the difference in calibers and cartridges between firearms. Unless otherwise noted, the firearm may only use the cartridge stated in this field. For example, a firearm using 9mm Parabellum ammunition may not use 9mm Kurz, 9mm Makarov, 9x23mm, or any other cartridge but 9mm Parabellum.

Sometimes these cartridges are known by several different names, but are actually the same cartridge (for example, 9mm Parabellum = 9x19mm Luger; 9mm Kurz = .380 Auto). More detailed information about cartridges can be found in the Ammunition By Caliber section of this website.

Range: By canon Shadowrun rules, each firearm belongs to a larger class of firearms. Each class has its own range table (SR3.111; i.e., Light Pistol, Heavy Pistol, Submachine Gun, etc...). In most cases, that class also has a standard Damage Code (i.e., Light Pistol usually have a damage code of 6L). In rare cases, the range tables and damage codes do not match. In the case of the Hammerli 610S (being a target pistol), this has been done to simulate a weapon of class that has better range than other weapons of its class (Heavy pistol range, Light Pistol damage).

Firearms on this website occasionally use the same method for the same purposes. For example, some weapons found in the Assault Rifles section use the Sport Rifle or LMG range tables. This is done to simulate that a given firearm may have better range than most of the others in its class. Also, this website uses additional range tables for new "classes" of firearms (Light Carbine, Carbine, Heavy Sniper Rifle, etc...). The modified range tables can be found in the Rules section of this website. In the future, each firearm may include its own range table.

Conceal: This rating represents a measurement of how difficult it may be to hide a particular firearm. For more information, see SR3.270.

Ammo: This rating reresents the firearm's base ammunition capacity and the type of ammunition storage device that is used. Some firearms may employ different magazines with different capacities. Reduced capacity can result in an increase to the weapon's Conceal Rating. Conversely, increased capacity can result in a decrease of Conceal Rating.

A **(c)** or **clip** is used to represent any type of detachable magazine that can be quickly removed from or inserted into the firearm. In an effort to inform and enlighten, the term "clip" is a misnomer when used in this context. The correct term is "magazine" or more specifically, "detachable box magazine".

Cylinder or **cyl** represents a rotating, multi-chambered magazine from which cartridges are directly fired, commonly found in revolvers. While modern revolvers include a cylinder that can be unlocked from the frame in order to allow all of its chambers to be loaded or unloaded at once, there are a couple of revolvers to be found on this site that only allow one chamber to be loaded/unloaded at a time. Special rules for these revolvers are located in the applicable firearm's notes.

A **(m)**, **mag** or **magazine** represents any type of internal magazine, into which cartridges are loaded or unloaded individually. In reality, this is not necessarily the case.

A **(b)**, **break** or **breech** represents any type of manually-operated firearm in which the action is opened and one cartridge at a time is loaded directly into the chamber. This includes double-barreled shotguns, break-action pistols and the like.

Mode: Designates the available modes that the weapon can fire in. Single Shot (**SS**), Semi-Automatic (**SA**), Burst Fire (**BF**), and Fully Automatic (**FA**). Some weapons are selectable between different modes (**SA/BF/FA**) while others can use only one mode (**SS**).

While the term behind the acronym does not technically fit, **SA** mode is used in conjunction with double-action revolvers on this website. This is done in order to simulate that double-action revolvers can be fired very quickly indeed, at the same speed or faster than many semi-automatic pistols, and as such should not require a Complex Action to fire, as with **SS** mode.

Rules regarding modes can be found in SR3.114.

Damage: Represents basically how much damage the weapon is capable of dealing out proir to staging and resistance. The number is the **Power Rating** (the higher it is, the more powerful the weapon), and the letter reprents the **Damage Level** (Light, Moderate, Serious, or Deadly). Rules regarding damage can be found in SR3.114.

Weight: Weight of the weapon, unloaded, in kilograms. Canon rules are notoriously faulty here, with the number better representing pounds rather that kilograms. That issue is corrected on this site. Weights actually are in kilograms.

Availability: This stat represents how difficult it is to aquire the weapon. Personally, I apply this rating only to the North American continent. Other areas may have different availability ratings. Rules for availability ratings can be found in SR3.114.

Cost: This is a rating of how cute the firearm is, in nuyen (¥). Just kidding. This value represents the manufacturer's suggested retail price, in a freely exchangeable currency known as "nuyen". On the streets, the weapon may be marked up or down, at GM discretion.

As you have probably noticed, my site does not include ratings for **Street Index** or **Legality** on this website. That may change in the future, but previously I have felt that GMs should be given discretion in controlling these variables during game play. **Street Indexes** can be used as leverage, in order to help the GM guide players into a choice of weapons for a particular job. In my own opinion, the **Legality** codes used for many of the firearms in canon are not as well thought-out as they should be. Also, legality will differ from country to country (even region to region), so having one table to handle it all isn't necessarily the right thing to do. So I've opted to exclude those variables on this site and leave them to the GM. May s/he be wise and fair to you.

However, all of that is just my opinion about the matter. Ultimately, by leaving those factors out, players and GMs are free to choose any method or statistic they find reasonable in their own games.

The Firearms Creation Guide

The FCG is the system I used to create a lot of the guns when I originally wrote this site around five years ago, long before the release of Cannon Companion. The FCG was designed by Peter Millholland, and it works kind of like the Vehicle Creation Guide from the Rigger 2 sourcebook. I used a slightly modified version of Pete's FCG to create a lot of the guns on this site, so if things don't come out the same for you, that's why.

To check it out, click here: Firearms Creation Guide

Anyway...

Use the frame to your left to navigate through the list of firearms. The weapon you're looking for will be displayed in the frame that this page is in.

If there are any questions, comments, complaints, heads-up's, whatever, you can e-mail me by clicking here.

Enjoy!!

Accessories

Bigger. Better. Faster.

Let's face it. A gun right out of the box will usually get the job done. But maybe it could do that job a lot better. If only someone made...

Odds are, someone does make it. And this is where you'll find it.

Le menú to your left.

Body Armor

Introduction to Body Armor

The National Institute of Justice document titled the *Selection and Application Guide to Police Body Armor* is an extremely good resource for anyone who would like in-depth information on body armor technologies, including history, construction, threat assessment... It's all in this file. Here's a link to the full file, with an exerpt below.

Ballistic Resistance of Personal Body Armor updates information regarding the NIJ 0101.04 standard, effective as of June 2001.

- Selection and Application Guide to Police Body Armor (PDF, 378k)
- Ballistic Resistance of Personal Body Armor, NIJ Standard 0101.04 (PDF, 933k)

And here are a few more interesting links for your edification.

- How Body Armor Works (howstuffworks.com)
- Body Armor 101 (pointblankarmor.com)
- Surviving a Shooting: Your Guide to Personal Body Armor (RAM, streaming)
- The NIJ Armor Rating System and Shadowrun

Selection and Application Guide to Police Body Armor

A History of Body Armor

Humans throughout recorded history have used various types of materials to protect themselves from injury in combat and other dangerous situations. At first, protective clothing and shields were made from animal skins. As civilizations became more advanced, wooden shields and then metal shields came into use. Eventually, metal was also used as "clothing," what we now refer to as the suit of armor associated with the knights of the Middle Ages. However, with the advent of firearms (c.1500), most of the traditional protective devices were no longer effective. In fact, the only real protection available against firearms were man-made barriers, such as stone or masonry walls, or natural barriers, such as rocks, trees, and ditches.

One of the first recorded instances of the use of soft armor was by the medieval Japanese, who used armor manufactured from silk. Although the first U.S. law enforcement officer to lose his life in the line of duty, U.S. Marshall Robert Forsyth, was shot and killed in 1794, it was not until the late 19th century that the first use of soft armor in the United States was recorded. At that time, the military explored the possibility of using soft armor manufactured from silk. The project even attracted congressional attention after the assassination of President William McKinley in 1901. But while the garments were shown to be effective against low-velocity bullets (traveling at 400 feet per second (ft/s) or less), they did not offer protection against the new generation of handgun ammunition being introduced at that time that traveled at velocities of more than 600 feet per second. This, along with the prohibitive cost of manufacturing the garment ($80 each, which amounts to approximately $1,400 in 1998 dollars) made the concept unacceptable. Armor of this type was said to have been worn by Archduke Francis Ferdinand of Austria when he was killed by a shot to the head, thereby precipitating World War I.

The U.S. Patent and Trademark Office lists records dating back to 1919 for various designs of bullet-resistant garments. One of the first documented instances where such a vest was demonstrated for use by law enforcement officers is detailed in the April 2, 1931 edition of the Washington, D.C., Evening Star, where a vest was demonstrated to members of the Metropolitan Police Department. However, none of these designs proved entirely effective or feasible for law enforcement or corrections use.

The next generation of ballistic vests was introduced during World War II. The "flak jacket," constructed of ballistic nylon, provided protection primarily from munitions fragments and was ineffective against most pistol and rifle threats. These vests were also very cumbersome and bulky, and were restricted primarily to military use. It would not be until the late 1960s that new fibers were discovered that made today's modern generation of concealable body armor possible.

How Does Body Armor Work?

When a handgun bullet strikes body armor, it is caught in a "web" of very strong fibers. These fibers absorb and disperse the impact energy that is transmitted to the vest from the bullet, causing the bullet to deform or "mushroom." Additional energy is absorbed by each successive layer of material in the vest, until such time as the bullet has been stopped.

Because the fibers work together both in the individual layer and with other layers of material in the vest, a large area of the garment becomes involved in preventing the bullet from penetrating. This also helps in dissipating the forces which can cause nonpenetrating injuries (what is commonly referred to as "blunt trauma") to internal organs. Unfortunately, at this time no material exists that would allow a vest to be constructed from a single ply of material.

Currently, today's modern generation of concealable body armor can provide protection in a variety of levels designed to defeat most common low- and medium-energy handgun rounds. Body armor designed to defeat rifle fire is of either semirigid or rigid construction, typically incorporating hard materials such as ceramics and metals. Because of its weight and bulkiness, it is impractical for routine use by uniformed patrol officers and is reserved for use in tactical situations where it is worn externally for short periods of time when confronted with higher level threats.

Materials Used

Note: The following information has been prepared from product literature supplied by the manufacturer. All product descriptions and performance claims are the manufacturer's and do not represent findings or endorsement of these claims by the National Institute of Justice, U.S. Department of Justice; Office of Law Enforcement Standards, U.S. Department of Commerce; or Aspen Systems Corporation.

Several manufacturers have been involved in developing and refining materials used in body armor. **DuPont** has developed law enforcement protection products for more than 25 years. Its **Kevlar ®** brand fiber, first developed in 1965, was the first material identified for use in the modern generation of concealable body armor. Kevlar ® is a manmade organic fiber, with a combination of properties allowing for high strength with low weight, high chemical resistance, and high cut resistance. Kevlar ® is also flame resistant; does not melt, soften, or flow; and the fiber is unaffected by immersion in water (see the wet testing discussion in chapter 5).

Kevlar ® 29, introduced in the early 1970s, was the first generation of bullet-resistant fibers developed by DuPont and helped to make the production of flexible, concealable body armor practical for the first time. In 1988, DuPont introduced the second generation of Kevlar ® fiber, known as **Kevlar ® 129**. According to DuPont, this fabric offered increased ballistic protection capabilities against high-energy rounds such as the 9mm FMJ. In 1995, **Kevlar ® Correctional™** was introduced, which provides puncture-resistant technology to both law enforcement and cor-rectional officers against puncture-type threats.

The newest addition to the Kevlar ® line is **Kevlar ® Protera**, which DuPont made available in 1996. DuPont contends that the Kevlar ® Protera is a high-performance fabric that allows lighter weight, more flexibility, and greater ballistic protection in a vest design due to the molecular structure of the fiber. Its tensile strength and energy-absorbing capabilities have been increased by the development of a new spinning process.

Spectra ® fiber, manufactured by **AlliedSignal**, is an ultra-high-strength polyethylene fiber. Ultra high molecular weight polyethylene is dissolved in a solvent and spun through a series of small orifices, called spinnerets. This solution is solidified by cooling, and the cooled fiber has a gel-like appearance. The Spectra ® fiber is then used to make **Spectra Shield ®** composite. A layer of Spectra Shield ® composite consists of two unidirectional layers of Spectra ® fiber, arranged to cross each other at 0- and 90-degree angles and held in place by a flexible resin. Both the fiber and resin layers are sealed between two thin sheets of polyethylene film, which is similar in appearance to plastic food wrap. According to AlliedSignal, the resulting nonwoven fabric is incredibly strong, lightweight, and has excellent ballistic protection capabilities. Spectra Shield ® is made in a variety of styles for use in both concealable and hard armor applications.

AlliedSignal also uses the Shield Technology process to manufacture another type of shield composite called **Gold Shield ®** . Gold Shield ® is manufactured using aramid fibers in place of the Spectra fiber. Gold Shield ® is currently made in three types: Gold Shield ® LCR and Gold-Flex ® , which are used in concealable body armor; and Gold Shield ® PCR, which is used in the manufacture of hard armor, such as plates and helmets.

Another manufacturer, **Akzo Nobel**, has developed various forms of its aramid fiber **TWARON ®** for body armor. According to Akzo Nobel, this fiber uses 1,000 or more finely spun single fila-ments that act as an energy sponge, absorbing a bullet's impact and quickly dissipating its ener-gy through engaged and adjacent fibers. Because more filaments are used, the impact is dis-persed more quickly. Akzo claims their patented Microfilament technology allows maximum energy absorption at minimum weights while enhancing comfort and flexibility.

Akzo Nobel maintains that the use of TWARON ® in body armor significantly reduces the over-all weight of the finished product, thus making vests more comfortable. Akzo also contends that stitching panels made from layers of TWARON ® is largely unnecessary, and that the lack of stitching contributes to a lighter weight and softer feel while affording the same protection.

Another fiber used to manufacture body armor is **Dyneema ®** . Originated in the Netherlands, Dyneema ® has an extremely high strength-to-weight ratio (a 1-mm-diameter rope of Dyneema can bear up to a 240-kg load), is light enough that it can float on water, and has high energy absorption characteristics.

All fibers and materials noted in this chapter have a wide variety of uses in addition to ballistic garments. They are used for other types of protective clothing and equipment (e.g., bicycle and skateboarding helmets), marine and aircraft components, industrial cables, and recreational equipment such as fishing rods and tennis rackets. The materials described are some of the most commonly used; other materials (e.g., ballistic nylon) can also be used.

The introduction of newer, high-performance fibers has dramatically decreased the weight and bulk of today's body armor and increased its comfort and wearability. It can be anticipated that newer materials will be developed and in conjunction with further advances in ballistic vest design, technology will continue to enhance the performance and comfort of tomorrow's body armor.

Wanna see more? Download the PDF.

Hit Location

Please don't send me any e-mail about these rules. I know everyone has their own house rules for Shadowrun, and that's exactly what these are. These are the rules that work best for me and my gaming group. Maybe you'll like them too.

Hit Location

When a character is hit by any attack that is not a Called Shot, his player or the game master can determine the location at which contact occurs by rolling 2D6. This will allow a more accurate representation of possible Armor Code modifiers for Body Resistance Tests. Obviously, this rule is designed to enhance lethality by allowing body armor modifiers to be bypassed, as the part of the body that is hit may not be covered by armor.

Below is a table explaining what the number rolled means.

Number Rolled (2D6)	General Location
1	Clean miss! Happy day!
2	Head
3	Left Arm
4	Left Leg
5	Chest/upper back, right side
6	Chest/upper back, left side
7	Abdomen/lower back, right side
8	Abdomen/lower back, left side
9	Right Leg
10	Right Arm
11	Groin/Buttocks
12	Roll Again

A more detailed set of rules involving hit locations and armor can be found here. These pages were hijacked from tricade.de (Andy's Shadowrun Page), which no longer hosts them.

Physiological Shock

This rule was created to reflect the fact that a character might freeze up and not be able to react in a rational manner as fast as normal due to the phenomena known as shock: *A potentially fatal physiological reaction to a variety of conditions, including illness, injury, hemorrhage, and dehydration, usually characterized by marked loss of blood pressure, diminished blood circulation, and inadequate blood flow to the tissues.*

In game terms, shock can occur only after receiving a physical wound. This test should be rolled after **each wound** received **above *Moderate*** that has **already been resisted**.

The character rolls his Willpower Attribute against a Target Number of 3, plus Wound Penalties (+2 for Moderate, +3 for Serious, etc...). Applying this rule to a Light Wound is the GM's option. Obviously, this rule does not apply to Deadly Wounds because after you take the damage, your character is, at the very least, unconscious.

If no successes are generated, the character is not allowed to act on her next available Action, due to overwhelming shock. (Also see *Knockdown*, SR3 p.124.) She can however, react on her Action on the next Initiative Pass. Only one success is needed to bypass Sudden Shock.

Tailchaser, a Feathered Serpent shaman, gets smacked in the face with a chain by Tango, a Street Samurai. She resists the attack normally. Unfortunately for Tailchaser, Tango rolled really well, and Tailchaser's player, well, she didn't. Tailchaser takes a Moderate Wound.

Tailchaser's player then rolls Tailchaser's Willpower (6) against a Target Number of 5 (3, plus her Moderate Wound Penalty). She comes up with 2, 3, 3, 4, 5, and 5. 2 successes. Woo hoo! Tailchaser is so bad ass, the chain to the noggin doesn't phase her one bit. She prepares to cast Slay Punk Bitch at poor Tango on her next Action.

However, Tango's buddy, Ram, goes before she does. He also desides to lay down the smack on Tailchaser, with a lead pipe. She again resists the attack normally. Ram didn't roll quite as good, inflicting only a Light Wound, kicking up Tailchaser's damage slightly to Moderate, with 4 boxes filled.

Parlez vous "ass whoopin'"? Tailchaser's player again rolls Tailchaser's Willpower against a Target Number of 5. This time she gets 1, 1, 2, 2, 3, and 4. No successes. Uh oh. Tailchaser feels the brunt of the lead pipe, and the attack dazes her momentarily. She can't snap out of it quick enough to act on her next Action. Good thing Tailchaser's pal Jan is coming around the corner with an HK227!

Certain Bioware, such as Damage Compensators and Trauma Dampers can reduce if not completely bypass the Wound Penalties, dependent on their level. Pain Editors bypass Wound Penalties entirely. (See the Shadowtech Sourcebook, pages 24, 26, and 29 respectively for more information and rules on these Bioware enhancements.)

Also, characters may purchase a new Edge called **Combat Experience**. This edge was created to demonstrate a character's uncanny coolheadedness and ability to think things through under extreme fire. It also balances the fact that someone who has been trained to deal with being physically attacked or shot at may react better to being injured.

Dodging with Reaction

Dodging a bullet should be almost impossible. No matter what your Quickness Attribute is, or how much cyberware you have, a bullet will always be faster than you, no matter what.

First, in order for a character to dodge a ranged ballistic attack, he must fill two criteria: He must be aware that the attack is coming, and he must have space available to dodge into.

A Perception Test should be applied if the attack is not apparent. If he fails the Perception Test, he is not allowed to dodge. If there is no space available to dodge, the character obviously is not allowed to dodge at all.

If he has passed the Perception Test and has space to dodge into, his Reaction Attribute is used to apply modifiers to the attacker's Succcess Test. Use the table below to apply the appropriate modifier.

Dodging Character's Reaction Attribute	Attacker's Target Number Modifier
1-3	+2
4-6	+3
7-12	+4
12+	+5

-1 per 3 rounds fired from a burst-fire or fully-automatic weapon.
-1 per meter of shotgun spread at the target's position (see Shotguns, SR3 p.117).
-The target's Damage Modifiers.

Jan looks around the corner on her Action, and sees Tango and Ram beating up on her friend, Tailchaser. She decides to pump a burst into each of them. Her first target is Ram, who doesn't notice a thing except that he just beaned poor Tailchaser on the head with a lead pipe. Jan dumps a burst into Ram, who doesn't stand much of a chance, being unarmored and all. Vaya con Dios, Ram.

Considering that Jan just whacked Ram, the GM decides to allow Tango to make a Perception Test. Tango rolls his Intelligence Attribute (3) against a Target Number of 4. (Base of 4, +2 perciever is distracted (his buddy just got shot a lot), +2 Jan is partially hidden, -4 he hears the burst-fire). He comes up with 4, 4, and 5. Boy does he ever notice! He decides to get the hell out of the way.

Jan decides to shoot him for doing that. He has space to dodge into (behind a pillar), and a Reaction Attribute of 5, giving Jan a +3 Target Number modifier in order to hit Tango. Tango is 10 meters away from Jan, Short Range for her HK227 (Base Target Number of 4). It's not particularly well-lit in here (Partial Light, +2), but that just makes it easier for Jan to see the little red dot from her Laser Sight (-1). However, Tango is trying really hard to get out of the way (+3 for his Reaction Attribute), but Jan's got a "3" on her 227's trigger group, and a gas-vent 3 (Burst fire, -1, no TN modifiers due to gas venting). So, the Target Number ends up being 7. (Whew.) Jan's player rolls 8 dice (4 for her SMG Skill, plus 4 from her Combat Pool), getting 2,4,4,5,5,6,6, and 6. Three successes, making the Damage Code 10D. Ouch.

Tango then rolls 8 dice for his Body Resistance Test (Body of 5, plus 3 from his Combat Pool) normally, subtracting his Ballistic Armor Code (Armored Jacket, 5) from the Power of the attack, making the Target Number to resist damage 5, and needing 8 successes to stage it down to nothing. He gets 1,2,3,3,5,5,6, and 6. Four successes. Tango takes a Moderate Wound.

New Weapon Class Ranges

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Hold-out	0-3	4-10	11-20	21-35
Medium Pistol	0-5	6-20	21-40	40-60
Heavy Pistol	0-10	11-20	21-50	50-100
Light Carbine	0-20	21-50	51-100	101-250
Carbine	0-50	51-150	151-250	251-350
Heavy Sniper Rifle	0-150	151-350	351-800	801-1500
Anti-Materiel Rifle	0-100	101-300	301-900	901-2400

Click here to view complete range tables.

Suppression and Velocity Control

Please follow this link to Rules for Suppression.

Conceal Ratings

The Conceal Rating system in Shadowrun is a bit screwy. Here's some general guidelines you can use to clear things up.

Value	Base Conceal Rating for weapon type	Additional weapons covered
2	Full-sized rifles or shotguns with non-folding or open folding stocks.	Compact machine guns.
3	Submachine guns and carbines with open stocks.	Combat shotguns with stock folded.
4	Compact carbines and submachine guns, very large pistols.	Submachine guns and carbines with stocks folded.
5	Large-frame heavy pistols and machine pistols.	Competition pistols.
6	Most heavy, medium, and light pistols.	Some not-so-compact pistols.
7	Compact pistols.	Some subcompact pistols.
8	Low-capacity subcompact pistols.	Clip or magazine-fed Hold-Outs.
9	Light-caliber Hold-Outs.	Breech-loaded Hold-Outs.

Overpenetration (By Rain, edited by Raygun)

The desired effect for any small arm bullet hitting a living target is for the bullet itself to stop inside of the target, thereby expending all of its energy disrupting tissue, and inflicting the most possible amount of damage. If a bullet is moving too fast, friction may not slow it fast enough, or the bullet may not yaw or fragment substantially inside of the target giving it time to expend that energy. If the bullet doesn't stop inside of the body, it **overpenetrates**, meaning it moves *through* the target until something else causes it to stop. On to the rule...

Anytime a character receives a **Serious wound** (but not Light, Moderate or Deadly) from a single firearm attack, they must roll a D6. On a roll of 3 or less, the round overpenetrates.

Anytime a weapon's Power Rating exceeds the defender's **Body + Ballistic Armor Rating** (or **Body x 2** if the target is unarmored), the bullet **automatically overpenetrates**. This rule only applies if the projectile is of a type capable of overpenetrating the target, i.e. regular, hollowpoint, explosive, armor piercing, or armor piercing discarding sabot bullets. Gel rounds would be exempt, as would arrows and shot rounds. (Alternately, this rule could be modified so that any 1's rolled by the attacker would be added to the weapon's Power Rating for determining overpenetration.)

For simplicity's sake, when a round overpenetrates, it is considered to exit the defender's body in the same direction it was travelling originally. Anyone or anything standing within a meter of the defender [illegible]

In the firearms section of this site, there is an entry labeled **Cyclic Rate** for weapons that have a fully automatic mode. You can use this number to determine ROF for similar weapons in your campaign. If you don't want to go to the trouble, there are some averaged suggestions in the table below.

Weapon Type	Rate of Fire	Complex Action = 1.5 seconds	Complex Action = 2 seconds	Complex Action = 3 seconds
Assault Rifles	800	20	27	40
Machine Guns	850	21	28	42
Submachine Guns	700	17	23	35
Automatic Shotguns	240	6	8	12
Miniguns	2000-6000	50-150	66-200	100-300
	Rounds per Minute	Rounds per Complex Action		

Don't forget about recoil...

Movement Modifiers and Scopes

Using a scope to aim at a target is generally not too difficult if the target is stationary. When the target is moving, it's a completely different story. Especially at long and extreme ranges.

To simulate the difficulty in acquiring and shooting a moving target at close range while using a scoped rifle, **reverse scope bonuses per level of magnification (+2 modifier with a level 2 scope) and add it to the movement modifier if the target is less than 20 meters from the attacker.**

Apply **x3 modifier at long range** and a **x4 modifier at extreme range**. There is no additional modifier from 21 meters to medium range. Apply scope bonuses normally at these ranges.

Manual Operation

All forms of manually operated firearms are Single Shot Mode within the scope of the game, meaning that they can only be fired once per Combat Phase. This is because the weapon must be cocked before it can be fired, so requiring a "ready weapon" Simple Action. Thus, one Simple Action is required to cock the weapon and another Simple Action is required to fire it. Most manual actions cock the weapon while chambering a fresh round.

Single action revolvers such as the Ruger Super Warhawk and the Colt Single Action Army also fall under this definition. Alterately, some single action revolver designs can be fired rapidly through the use of a technique called "fanning." In this technique, the trigger is held down while the hammer is swiped with the free hand. **Fanning** requires a Complex Action. A character may fan a number of rounds equal to their Quickness rating. Apply recoil modifiers normally. Obviously, handling a gun like this does nothing for accuracy. Apply an additional +2 modifier per shot to simulate the effects of slapping the top of the revolver. This can technique can be used as suppressive fire.

Single action pistols such as the M1911 must be cocked manually before the first shot can be fired. The reciprocation of the slide automatically cocks the hammer for successive shots. Alternately, the M1911 can be carried "cocked and locked", meaning that the hammer is cocked and the safety is on. Because of the position of the safety in relation to the natural firing position of the hands, disengaging the safety on the M1911 prior to firing is a Free Action.

Recoil and Reaction

This rule is essentially the same as the Recoil and Strength rule found in FOF.83, but the more appropriate Reaction attribute is applied to the rule.

Quick reflexes far more important than strength when it comes to controlling recoil. Quickness is required to control the recoiling pistol and realign the sights for the next shot as fast as possible. Intelligence is required to keep from over-cor
recting. Thus, Reaction is the ideal attribute to apply to this rule.

Another advantage in controlling recoil is the sheer mass of the person pulling the trigger. People with heavier bodies can absorb more energy from recoil with the benefit of less motion. **Add both the Body and Reaction attribute ratings together, then divide them by two.** Take the total and apply it to the table below.

Reaction	Recoil Reduction
1-4	None
5-6	-1
7-8	-2
9-10	-3
11-12+	-4

As we all know, gun bunnies in Shadowrun tend to be loaded to the gills with reaction-enhancing cyberware like Wired Reflexes and Reaction Enhancers. This gives them a distinct advantage over other types of characters when it comes to using firearms. Trolls, with their rather large Body attribute ratings, will also benefit from this rule, as they should.

Shotguns and Chokes

Most shotguns are designed to fire multiple-projectile loads, commonly known as *shot*. After exiting the muzzle, the shot spreads, creating a cone of lead or steel balls extending outward from the shotgun's muzzle. this allows shot to hit multiple targets, but with reduced effectiveness. The mechanism that controls this spread is called the *choke*.

A choke works like a nozzle on a wter hose; it constricts the shot column as it leaves the barrel, squeezing the column into a tighter group that desperses slowly. The tighter the constriction, the tighter the group at a given range. Canon Shadowrun rules allow for an unrealistic level of spread. No shotgun load spreads to cover an area of one meter at a distance of two meters no matter how short the barrel or how open the choke. It just doesn't happen. Therefore, the rules below are designed to make the choke rules a bit more realistic.

Most defensive shotguns employ a fixed choke that really isn't a choke at all. This is known as a *cylinder bore*, meaning that there is absolutely no constriction at the muzzle. Because of this, a shotgun with a cylinder bore barrel makes for the most versatile kind of shotgun, capable of firing all kinds of loads, from slugs to the smallest shot. The downside is that the shot column is allowed to expand at its maximum rate.

Other than cylinder bore, there are several levels of choke constriction available, depensing on the user's needs. These levels are listed below.

Choke	Rating	Spread @ 20m	Spread @ 50m	Spread @ 100m
Cylinder	1	0.6	1.5	3
Skeet	1.2	0.5	1.25	2.5
Improved Cylinder	1.2	0.5	1.25	2.5
Modified	1.5	0.4	1	2
Improved Modified	1.5	0.4	1	2
Full	2	0.3	0.75	1.5
Extra Full (Lead Only)	2	0.3	0.75	1.5

The rating number listed above determines how quickly the shot spreads. For every number of meters equal to the choke setting that the shot travels, it will spread 0.03 meters (3 centimeters). Spread can be calculated using this simple formula: **Range/Rating*0.03=Spread in meters**. For example, at a distance of 20 meters, shot fired from a cylinder bore shotgun will spread to 0.6 meters (20/1*0.03=0.6). At a distance of 50 meters, shot fired from a modified choke shotgun will spread to 1 meter (50/1.5*0.03=0.75). At a distance of 100 meters, shot fired from a full choke shotgun will spread to 1.5 meters (100/2*0.03=1.5).

When a shot round exceeds its Choke Rating * 20 in range, it loses one point of power. Also at this point, subtract -1 from the attacker's target number. This applies at every interval until the shotgun's maximum range is reached. For example, a character firing a cylinder bore shotgun at a target 40 meters away would receive -2 power/-2 target number modifiers. Likewise, a character firing a full choke shotgun at a target 80 meters away would receive -2 power/-2 target number modifiers.

Some loads cannot be used with a choke. Slug, buckshot and heavy flechette loads fall into this category. If a choke is set to a rating higher than its base rating when used with either of these types of loads, damage to the choke will occur, possibly destroying it and injuring the shooter. In this case, apply an additional +2 recoil modifier.

Characters

Aaron Green (Human, Sorcerer) «

Aaron Green is a college student. He is attending the University of Chicago's Thaumaturgy program under scholarship from the Peoria Heights Academy. He is not SINless.

> *"You want to know how I got into this business? Good fucking question. So do I. Let's see...*
>
> *One minute I'm a good little citizen, going to school, paying my taxes, making questionable programs for deck-heads, and the next I'm down here with a friggin' submachine gun praying to whoever's listening that I won't get splattered like the guy ahead of me. It's been a mess since minute one. Sure there are times when I can sit back and wonder what the fuck is wrong with me instead of doing something that will keep me from eminent death, but hey...*
>
> *The whole thing started when these, I guess I should call them friends of mine, who call themselves a "gang", got involved in the shadier side of Peoria. Yeah. Peoria. Can you believe it? Fucking Peoria, Illinois. Right smack-fucking-dab in the middle of the heartland.*
>
> *Anyways, I move to Chicago to go to school and these guys decide to come along for the ride. And get into more trouble. They meet a few people, you know, hobnob with the fucking dregs of society, and somehow I get into the rather lucrative biz of making hot chips for some of Chicago's reputably-named shadowy folk. That part ain't so bad. I sit at home, write code, burn chips, someone comes over with the right password and a fistful of cash, and blammo. Car and rent are paid off till next February. My kind of gig.*
>
> *Then these assholes -my friends, that is- go blabbing that I can sling a spell or two.*
>
> *Next thing you know, I'm ankle deep in you-know-what trying to get out some ritzy apartment building, slingin' shit so tough I can barely stand, and some old lady is screaming bloody blue murder about... well, I guess I did shoot the guy... And, heh, I'm sitting there thinking "I'm gonna be late for class in the morning." What the fuck just happened? You figure it out 'cause I haven't the slightest.*
>
> *Not the kind of life I was planning on. I've got a scholarship I'm about to lose, friends I swear to God are trying to get me killed, and a wad of Franklins in my pocket so big, it makes me walk funny. Oh, and I think the FBI knows who I am. Christ.*
>
> *Almost makes you appeciate your junk mail, doesn't it?"*

Jeremy Kostas (Human, Paramilitary Muscle) «

Jeremy Kostas grew up an Air Force brat. His father was a colonel stationed a Sheppard AFB, Wichita Falls, TX CAS. By the time his parents divorced, he was on his way to a career in the military, partially due to his father's strict upbringing. In a show of defiance, Jeremy joined the CAS Army despite his father's plans. He soon volunteered service in the 3/75th Ranger Regiment, based at Fort Benning, GA. A few years later Jeremy had graduated a Green Beret, and decided that's about as far as he wanted to take his military service.

With a degree in Mechanical Engineering, he decided to try life in the private sector. He and his wife Sarah moved to Baltimore, MD UCAS to be near his ailing mother. Shortly thereafter, Jeremy and Sarah were killed in a car accident with New Hampshire congressman Nick Murray.

> *"Life is a balancing act. Between their law and your ideology, between anonymity and identity, good and evil, light and dark. Always walking the fine line between parting shots, trying to avoid being hit.*
>
> *"The politics of this world astound me, even after all these years of wading knee-deep in its purveyors. For the last eight years of my life I've done nothing but help powermongers conspire against each other. A political crowbar. The vision you fear to acknowledge standing in the dark corners of your mind late at night. A thumb pressing so uncomfortably into that fresh puncture wound, waiting for an answer. The right answer. Cheap shot after cheap shot, paycheck after paycheck. Nothing was offsides. Sometimes I couldn't help but let the hopelessness of their greed and weakness consume me. It would drag me into the void kicking and screaming and praying to see something that's still honest and true sheltered in the half-light. I was lost, but I did not stop searching. One day I found it. More likely, it found me.*
>
> *"Life becomes something more precious when you see what power and greed and weakness can do to people. You have to shelter it. Nurture it. Give it someplace safe to grow. Corruption has grown so extensively that I have been given no choice but to use power and wealth and greed against those that choose gross dishonesty and corruption as a means to an end. They are dealt with in the swiftest of manners. I do not hesitate to judge and justify. Only the guilty seem to be willing to do it.*
>
> *"But there are allies of truth and light in this world yet. The trick is finding them and convincing them that you're on their side. Being in the business of regularly stepping on both sides of the line, that can be pretty difficult to do. And fighting the corruption in yourself is even worse.*
>
> *"'Trust no one,' they say. That's ignorance. You have to trust someone. You have to believe. Otherwise there's nothing left but a void to consume you. Blacken your heart. Dissolve every shred of your dignity until all you're left with is the idea of some drastically stupid outburst, or worse yet, and idea that stews and festers inside your mind, giving you a reason to keep on living in the void. Propagating its boundries. Seeing how far you can push it.*
>
> *If you've chosen that path, we'll probably end up meeting sooner or later. The war is far from over."*

Cameron Watts (Human, Rigger) «

Cam has seen war and tactical skurmishes the globe over, many times. He is a veteran soldier (some would say mercenary) now under contract by the Tacoma-based corporation, Sandoval Military Systems.

> *"It's not as bad as it sounds. I mean, I have no personal life, but I guess that's the price you pay for being in the biz I'm in.*
>
> *"I've been doing this kind of thing since I was 18 years old. My pops was always big on military service. He says it* 'makes a man out of you'. *I guess that's what I am. Well, that and some amazingly underprotected, mad computer scientist's latest and greatest biological experiment. Not that I'm complaining, mind you.*
>
> *"I did a brief stint with the CAS Army. Apparently, the capitalist inside was being throttled by some misguided sense of patriotism at the time. But it didn't take too long for me to realize that if I was going to get my ass shot off, I might as well get some money for it. So Ares picked me up. I had the skills they were looking for, and they had the wire I was looking for. I was with them for a good six years. Went to the Desert and everything. But, well, being shot at every day gets on your nerves after a while. I'd saved up enough cash that when my contract expired, I set up a sweet place out in the middle-of-nowhere, Redmond. Out past The Barrens. Out where it gets nice again. But that kind of money doesn't last forever.*
>
> *"I hooked up with Jade through a mutual, uh, "aquaintance" I guess you could say. To this day, she's the most professional person I've ever met through Shadowland. She's retired now, though. Best fixer that ever was in the biz. Anyways, I spent three years running the shadows. Sometimes it was good work. Sometimes it wasn't. I don't think I have a working relationship with the Yakuza anymore. But that's another story...*
>
> *"Somebody dropped a real big hammer on the last run I went on. Somebody hired some reputable schmucks from Seattle to go down to Aztlan and get all kinds of messed up. I was one of them. I was stuck there for almost 5 months. P.O.W., man. Worst experience of my life. Someone came and cracked me out of that can. Can't say who. Might get whacked for it. But I can say the natives aren't as nasty-mean as those trid tabloids make them out to be.*
>
> *"I got back on my feet and hid out in Dallas for a while, doing odd jobs to keep afloat. Went over to Europe on another job soon after and ended up making a buck or two. Probably more than all the rest of my other jobs combined. I said to myself* 'when you get home, you're going to chill the fuck out like you're supposed to.' *Did that happen? Of course not. There's that rush. And for some reason, I can't seem to live without it.*
>
> *"SMS called me and offered me more money than I could pass up. I said* 'Why? You make guidance systems and drone AI and shit. I'm no engineer.' *and they said* 'That's not all we do.' *So I've been with them ever since. It's nice clean work with all the back-up I care to ask for, all the cutting-edge tech I can carry, and the biggest guns they make. We have quite a few real pros on our team too. CAS Army Rangers, SAS, ESI, Wildcats, FBI, SEALs, KSK, GSG-9, Tir SpecOps, you name it. If you want the job done right the first time, you call us. We'll figure it out and have it done with time to spare and under budget. Well, maybe not under budget..."*

Nick "Lucky" Petalumi (Human, Security Specialist) «

Nick was a senior security analyst for Einhart and Jones, one of California Free State's top security consulting firms. He was set up to take the fall for the secuity compromise of one of the largest banks on the west coast, in which $550 million dollars in bearer bonds were stolen. After a 5 year stint in the San Quentin Correctional Facility, he decided to leave his identity behind and find a new life in Seattle. Disenchanted with corporate life, his knowledge of security systems and non-matrix computer systems were a commodity in need in the shadow market.

> *"Yeah, it was pretty fucked up. I still can't believe I'm here. You know, becoming a fucking criminal was the best thing that ever happened to me.*
>
> *After I got out of the pokey, the word got out that I might be a hot prospect in the biz, so I went to Seattle to talk with a guy named Victor. He set me up with a team -real pros, these guys- and we made a name for ourselves pretty quick. It was me, Vincent, and Dread for a while... What? Yeah, Doctor Dread. You know 'im?*
>
> *Anyway, we had a nice hangout, we were connected big time. Things started getting a little hectic for the three of us, so we hired on a few more people. God I wish we hadn't done that. Glad we had access to the Doc, though. I got punctured more times than I care to remember. I'm sure I've got some DNA safely locked away in the good ol' Lone Star vault.*
>
> *One of the jobs we had was for a friggin' movie star. I'd better not blab which one, but I will tell you there is some fucked up shit happening in Hollywood. Everything was going fine, and then cops started showing up around every damn corner. Near the end, we found out we had a rat. If you ever see an LS cop named Bridget Lincoln, beat her senseless and give me a call.*
>
> *Anyways, I think I'm the only one that got out of there with my ass still attached. I haven't seen or heard from that crew since. I think I'm better off that way. You know, Cabo ain't so bad this time of year."*

Jake Sullivan (Human, Rigger) «

All Jake knows of his past he's learned from from other people. Someone is hunting him and he doesn't know who they are or why they're doing it. They want something he doesn't have. They are putting his team in danger. Being an amnesiac has made him paranoid. And rightfully so. He has skills he doesn't know how he learned and friends that he is forced to trust because he can't afford not to.

> *"Yeah, I know it's hell getting in here, but there are some things you just have to deal with. What? Oh, yeah. I was just swapping out a sensor package and a couple of Cobras on that rotordrone. Don't mind it. The living room always looks like that."*

Oscar "Oz" Nomuri (Human, Rigger) «

Oscar Nomuri is an employee of the Shiawase Corporation, assigned to the Marketing Intelligence and Forecasting Department (MIFD). A native of CFS, Nomuri speaks fluent Japanese and makes regular trips between offices in Osaka, Los Angeles and Seattle.

> *"Jim, you've got two armed schmucks coming up the hallway in five seconds. Move it. I see 'em thermo on Kilo-Nine... Yeah, that's good. Okay. You're good. Shut up. Don't breathe... What'd he say? What? Oh, poor baby. He should ask for a raise. Right before they cut him loose when they find... Oh, hey, they're locking you in! Lucky you! And they though three feet of reinforced concrete would stop us. Boneheads... Okay. You're good to go. Operation: Raid The Shit Out Of Ares' Ultra-Sensitive DNA Database may now commense. Stop laughing. We aren't being paid to laugh, Jim. Watch the camera around the cor... ay... Peek-a-boo! I see you, Jim! You dumbass! It's okay. I'm the only one watching right now. Lucky you again. What? Those are bad words, Jim. I don't respond well to bad words. Any more of that and I'll call up the security desk and drop visual of you crapping in their hermetically-sealed lock boxes. 'Just dropping off some more DNA, guys!' Just kidding, Jim. I would never do that. It would ruin the suprise. Auth is 6621215831. Open sesame. There you go. I... I Love you too, Jim. Please don't tell my wife. Alpha-Seven. Alpha-Seven, Jim. Drop Alpha-Seven in case we need to come back. Thank you. Jeez. Like I wasn't even here... You've got two minutes and I'm counting the seconds... Three, two, one... pack your shit and get out of there... It's been fun. Thanks for the free shit, Ares. You miserably insecure jackholes... Yeah. See you on the outside."*

(home)

Introduction

Why a Firearms Creation Guide? If you've ever wanted to have a heavy pistol that does something other than 9M damage, or a weapon that had some personality to it, but didn't want to just fudge numbers and hope for the best, then you understand the why. Shadowrun, for all of its fun, lacks any means of making "by the book" weapons and the mere handful given in the few sourcebooks doesn't do the system justice. In order to keep within the bounds of FASA-published weapon specs, I attempted to reverse-engineer baseline weapons like the **HK 227** and the **Browning Max-Power**. It's not perfect; the more exotic the weapon, the more the chance that the numbers in the book and the numbers in the Guide will not add up the same.

The Process

How does one go about using this firearms creation guide? I have endeavoured to make the process as simple and balanced as possible. This guide is not designed for making special, unique, one-of-a-kind weapons, nor does it include rules and options for some of the more esoteric style of Shadowrun weapon (ie, lasers, Narcojet weapons, "squirt" guns, etc). This guide is designed with production model weapons in mind, whether state of the art or behind the times. While it is not specifically designed to handle heavy weapons (machineguns, mortars, grenade launchers, miniguns, etc), it certainly could be expanded in that direction (hey, what are sequels for?). In its most simple form, this guide flows something like this:

1. choose the type of weapon
2. choose the ammunition
3. choose frame options
4. choose ammunition options
5. choose recoil options
6. choose targeting/interface options
7. calculate weapon specs

How Best To Use The Guide

I found that the file is rather too large to be effectively used on-line, so printing out the information is recommended. I have adapted the format of this file for use with Netscape (sorry MSIE users). First of all, you need to select some options in order to make the pages print out correctly. These can be found under File, Page Setup. Make sure you have "Black Text" selected, or you will be sorely disappointed in the outcome of printing (white text on white paper looks terrible, trust me). Secondly, the main file with all of the design options should be printed in "Landscape" mode. You can change the printing mode right before printing by selecting File, Print or clicking the "Print" toolbar button and then clicking on the "Properties" button. All other pages should be printed in the "Portrait" style.

Continue

A Word on Carbines

What is a carbine? Is it a submachinegun firing a rifle-sized cartridge, or is it a rifle firing a pistol-sized cartridge? The answer is both. Most carbine designs are reverse-engineered from an existing design in order to give more flexibility for a specific purpose (the CAR-15 is a good example of an M-16 being redesigned to SMG size for covert or special ops). This guide treats carbines as the SMG-sized weapon firing a rifle-sized cartridge. This is not done to accurately reflect the real world, but rather to simplify matters for the bulk of SR players and GMs who are not weapon experts.

Electronic Recoil Adjustment

Design Cost: 75	Weight: 0.15 kg	Tech Rating: SOTA
Max. Level: NA	Conceal: NA	Grade: Military
Space Used: Internal		

Requirements: Weapon must weigh over 0.75kg.

Weapon must have BF and/or FA modes.

Compensation applies only to weapons firing in BF and FA modes.

Battery power.

Exclusions: Not compatible with mingun, high-velocity, or any extreme ROF weapon.

Description

A piezoelectric sensor and a microprocessor control a mechanical regulator attached to the automatic sear of the weapon's trigger mechanism. This device arrests the sear in its locked position for a fraction of a second, so adjusting the weapon's rate of fire from its mechanical rate to a rate that more closely matches the weapon's mass and natural mechanical frequency, dramatically reducing vibration and muzzle jump.

While engaged, this system provides the equivalent of **up to 10 points of recoil compensation** to any weapon type firing in automatic modes (BF or FA).

Multi-barreled weapons such as miniguns and high-velocity weapons are not compatible with Electronic Recoil Adjustment. Also, conventional high-ROF weapons are adversely effected by the system. Their rate of fire is reduced to the standard maximum of 10 rounds per Action, neutralizing its extreme high rate of fire benefits entirely.

This system is fully compatible with Smartlink Level II, and the rate of fire can be adjusted cybernetically (values 3-10) or by use of a small dial mounted on the weapon. The system can also be set to self-regulate, providing optimum performance with varying ammunition types, or when used in conjunction with Smartlink II/ rangefinder, the system can automatically adjust the rate of fire in relation to range-to-target, allowing the weapon to fire at a faster rate depending on how close the user is to the target.

Adjusting the rate of fire does not affect BF or FA weapons using standard firing mechanisms. At any rate, the weapon will fire at least as fast as 10 rounds per Action.

US Patent 5713150

Mechanical Recoil Adjustment

Design Cost: 25	Weight: 0.3 kg	Tech Rating: SOTA
Max. Level: NA	Conceal: NA	Grade: Security
Space Used: Internal		

Requirements: Weapon must weigh over 0.75kg.

Weapon must have BF and/or FA modes.

Compensation applies only to weapons firing in BF and FA modes.

Exclusions: Not compatible with mingun, high-velocity, or any extreme ROF weapon.

Description

A hydraulic or spring-actuated piston controls a mechanical regulator which arrests either the weapon's automatic sear at its locked position, or the weapon's bolt at its rearward position, for a fraction of a second, so adjusting the weapon's rate of fire from its mechanical rate to a rate that more closely matches the weapon's mass and natural mechanical frequency, dramatically reducing vibration and muzzle jump.

While engaged, this system provides the equivalent of **up to 10 points of recoil compensation** to any weapon type firing in automatic modes (BF or FA).

Multi-barreled weapons such as miniguns and high-velocity weapons are not compatible with Mechanical Recoil Adjustment. Also, conventional high-ROF weapons are adversely effected by the system. Their rate of fire is reduced to the standard maximum of 10 rounds per Action, neutralizing its extreme high rate of fire benefits entirely.

This system is completely mechanical and cannot be adjusted via Smartlink. Adjustments can be made via an exposed dial at the end of the piston tube, which adjusts return pressure on the piston, thus the period of time that the bolt or sear is arrested, thus the weapon's rate of fire. This system *cannot* self-regulate, and some types of ammunition may adversely affect the weapon's rate of fire, thus controllability.

Adjusting the rate of fire does not affect BF or FA weapons using standard firing mechanisms. At any rate, the weapon will still fire at least as fast as 10 rounds per Action.

US Patent 5379667

Balanced Automatics

Design Cost: 25	Weight: 0.5 kg	Tech Rating: SOTA
Max. Level: NA	Conceal: NA	Grade: Security
Space Used: Internal		

Requirements: Weapon must have BF and/or FA modes.

Weapon must use a conventional operating system.

Exclusions: Not compatible with mingun, high-velocity, or any similar multi-barreled weapon system.

Description

In a conventional automatic action, a bolt (or bolt group) is used to gather cartridges from a magazine, place the cartridge into the weapon's chamber, then extract the spent cartridge case and discard it. The movement of this mass shifts the balance of the weapon to the rear as the action is opened, then shifts it forward again as the action is closed. This shifting of mass is part of what causes the the barrel to lose alignment with the target.

The Balanced Automatics system introduces a counter-balancing mass to the rifle which cancels out the effects of the bolt group's recoiling mass. When the bolt group recoils rearward, the balancing mass, synchronized with the bolt group via a simple sproket, moves forward. When the bolt group resumes its motion forward, so the balancing mass moves rearward.

This system provides the equivalent of **up to 5 points of recoil compensation** to any weapon type firing in automatic modes (BF or FA).

Multi-barreled weapons such as miniguns and high-velocity weapons are not compatible with Mechanical Recoil Adjustment. Also, conventional high-ROF weapons are adversely effected by the system. Their rate of fire is reduced to the standard maximum of 10 rounds per Action, neutralizing its extreme high rate of fire benefits entirely.

This system is completely mechanical and cannot be adjusted via Smartlink. Adjustments can be made via an exposed dial at the end of the piston tube, which adjusts return pressure on the piston, thus the period of time that the bolt or sear is arrested, thus the weapon's rate of fire. This system *cannot* be set to self-regulate, and some types of ammunition may be adversely affect the weapon's rate of fire and thus controllability.

Adjusting the rate of fire does not affect BF or FA weapons using standard firing mechanisms. At any rate, the weapon will still fire at least as fast as 10 rounds per Action.

US Patent 5379667

Rangefinder Air-Timed Grenade Link

Design Cost: 30	Weight: 0.10 kg	Tech Rating: SOTA
Max. Level: NA	Conceal: NA	Grade: Military
Space Used: Internal (Grenade Launcher)		

Requirements: Rangefinder and a display medium.

Smartlink Level 2.

One Smartlink Level 2 I/O port.

Exclusions: none

Description

An ADVAT.328-compliant package for any standard grenade launcher. This component transfers the necessary range data from the Smartlink 2 system (and in turn from a rangefinder) directly to the "smart" 20mm or 40mm air-timed, directed scatter, and adjustable trajectory grenades.

SHADOWRUN AND FIREARMS keyword search

IE 5.5 or better is necessary to run this search. You can input multiple keywords by separating each keyword with a +. The search is not case sensitive. Click the "search" button to begin.

Problems? raygun2112@hotmail.com

HOME

Questions & Answers

home

If your answer isn't in here, go to the Dumpshock Forums, find a thread with a gunnish-sounding title, and there's about a 98% chance I'll be around. If your question isn't relevant to the topic, I suggest making a new thread. Off-topic discussions tend to annoy people, as they should. Or you can send questions to raygun2112@hotmail.com.

Shadowrun Related	Not Necessarily Shadowrun Related
Shotgun Damage Codes	Pistols vs. Revolvers
Cased vs. Caseless Cartridges	
Classes, Cartridges, Damage Codes	
Lack of Legality/Street Index	
Pistol vs. SMG Damage Codes	
Ares Viper Slivergun	
Ares HV Weapons	
Barrett 121	

Exceptional E-mail
My First Hate Mail
About that darned Predator III (Now Predator III ERASe)

e-mail: raygun2112@hotmail.com

Mission Statement

This site has been developed for the Shadowrun player who is left unenthused by the current firearms provided by Shadowrun, and would like to see a bit more detail, practicality, and lethality put into the system. With that in mind, this site is very heavy on technical terms and the technical aspect of firearms and ammunition. It takes real world information and allies it to weapons designed for use in the game of Shadowrun.

If you feel comfortable with the current weapons provided by Shadowrun, this site may present more of a challenge than a help. For that reason, The Basics section is an attempt by me to make things a bit more understandable to those who are new to the world of firearms.

Welcome! And as they used to say at FASA, "Have fun, play Shadowrun!"

Problems With the Site?

- This site is designed for 1024x768 resolution at 24-bit color.
- Use Internet Explorer 5.5 or newer for best results.
- Here's a link to the woefully inadequate Troubleshooting Guide

Advisors, Contributors and Providers

- **Adam Jury, Mark Imbriaco** and the Dumpshock crew for offering the primo real estate.
- **Jacob Reynoldson** for hooking me up with the free space at iastate.
- **Byron Cutting** (aka Rain) for telling me how it is on occasion and disappearing completely.
- **Peter Millholland** (aka spudman) for writing the FCG and being a good friend.
- **Mike Walser** (aka Stillman) for the invaluable technical information and support.
- **Ty Brown** (aka Static) for his general knowledge, his file on terminal ballistics and his support.
- **Edward Fowble** (aka otomik) for the contribution of quite a number of files and his support.
- **Mac Swift** for being German and offering all the moral support a German man can muster!
- **Eric Johnson** for not being German**.**
- **Andy Wadle** for the web design advice and the file on hit locations.
- **James Meiers** and all of the contributors to the Shadowrun Military Site. (Not there anymore!)
- **Pistons**, **Sixgun**, **Fireangel**, **abortion_engine**, **AK404**, **Tzeentch**, **Kandalon**, **Austere Emancipator** (aka Grim Redeemer), **Arethusa**, **FrostyNSO**, and all the people on Dumpshock, Bulldrek and Shadowland who inspire me to make this a great technical resource for Shadowrun.

Bibliography

Title	Author	Year	ISBN
Assault Rifle	Maxim Popenker, Anthony G. Williams	2004	1-86126-700-2
Cartridges of the World, 8th Edition	Frank C. Barnes, M.L. McPherson	1997	0-87349-178-5
Cartridges of the World, 9th Edition	Frank C. Barnes, M.L. McPherson	2000	0-87341-909-X
Greenhill Military Small Arms Data Book	Ian V. Hogg	1999	1-85367-360-9
Gun Digest Book of Assault Weapons, 5th Edition	Jack P. Lewis, David E. Steele	2000	0-87341-778-X
Jane's Guns Recognition Guide, 1st Edition	Ian V. Hogg, Rob Adam	1996	0-00-4709799
Legends and Reality of the AK	Charlie Cutshaw, Valery Shilin	2000	1-58160-069-0
Military Small Arms of the 20th Century, 6th Edition	Ian V. Hogg, John Weeks	1991	0-87349-120-3
Military Small Arms of the 20th Century, 7th Edition	Ian V. Hogg, John Weeks	2000	0-87341-824-1
Modern Small Arms	Ian V. Hogg	1994	0-7858-0018-2
New World of Russian Small Arms and Ammo	Charlie Cutshaw	1998	0-87364-993-1
Shooter's Bible, No. 93	William S. Jarrett, Wayne van Zwoll, et al.	2001	0-88317-224-0
Silencer History and Performance, Volume 1	Alan C. Paulson	1996	0-87364-909-5
Silencer History and Performance, Volume 2	Alan C. Paulson, N.R. Parker, Peter Kokalis	2002	1-58160-323-1
Understanding Firearm Ballistics, 4th Edition	Robert A. Rinker	2002	0-9645598-4-6

Magazines	
American Handgunner	*Bimonthly Magazine*
Guns & Ammo	*Monthly Magazine*
Guns and Weapons for Law Enforcement	*Bimonthly Magazine*
Gun Tests	*Monthly Magazine*
Small Arms Review	*Monthly Magazine*
Special Weapons for Military and Police	*Biannual Magazine*

About the Author...

[Devil's Tower] [M1911A1] [M16A2]

A lot of you probably know me as **Raygun**. I grew up in Dallas, Texas USA. I first began playing Shadowrun way back in January 1992. That's right. First Edition. What a fun nightmare. Good times were had gaming *every night*, *all summer* while on vacation from school. Many a moonlit night transcended to morning in those days. Oh yes. It was three months of incredibly adulterated party, shame-free irresponsibility and more than my share of life lessons learned. I could probably write a book about it and make a million bucks. Maybe someday. Anyway...

While I had been exposed to firearms at a fairly early age, I didn't exhibit any real interest in them until after I started playing Shadowrun. It wasn't long before the firearms offered in the books started to seem either too generic or ludicrous. I began adding real-life weapons to the system. Early additions included some of the Glock pistols and the Heckler & Koch MP5 submachine gun. During this time, I was a semi-regular personality on the Shadowland website, where I met a guy known as **Spudman**, and began using his Firearms Creation Guide to create the guns for my games. There was also a small group of gun-savvy people there, including **Stillman** and **Static**, people who inspired me to learn more about guns. I began regular trips to a local range in order to rent and shoot real guns. A few trips to Montana at spring and fall gave me quite a bit more experience.

Eventually I decided that Montana is more my speed than anywhere else I've been. There are new things to learn here. For instance, how to raise cattle. How to enjoy your environment. How to hunt many different things. How to drop a 175 grain Sierra HPBT into a bucket at a thousand yards...

In any case, I'm proud to offer my knowledge and the resource I have created from it to Shadowrun players who are interested in a more realistic and detailed representation of firearms in Shadowrun. Hopefully this site is helpful to you, the person reading this now. I'm glad I could help.

Over five years after its inception, Shadowrun and Firearms has become one of the more visited Shadowrun reference sites on the Internet, with regular visits being made by Shadowrun players *all over the globe*, I'm happy to say. As of March 2001, the site has been hosted by the largest Shadowrun-dedicated domain on the Internet, known as Dumpshock. I am also a regular personality on the Dumpshock Forums.

This site is perpetually under construction.
Fonts you need are here.

Gun Links

General Information
- Ballistic Formulas and Tools in Java
- Defense Fact Files
- FirearmNews.com
- Guncite
- Gun Owners of America
- Gunwriters on the Web
- HKPRO
- How Do Bullets Fly? by Ruprecht Nennstiel
- JBM Small Arms Ballistics
- Kalashnikov AK
- Mel's Sniper Page
- National Rifle Association
- Rec.guns
- Remtek Arms
- RKBA.org
- SecurityArms.com
- SpecialOperations.com
- Sniper Country

Firearm Manufacturers
- Armalite
- Auto Ordnance (Thompson)
- Barrett
- Benelli USA
- Beretta
- Colt
- Dakota Arms
- Glock
- Heckler & Koch GmbH
- Heckler & Koch USA
- Kahr Arms
- Knight's Manufacturing Co.
- Magnum Research (Desert Eagle)
- McMillan
- Olympic Arms
- Para-Ordnance
- Remington
- Robar
- Ruger
- Smith & Wesson
- Springfield Armory
- SSK Industries
- Strayer Voigt Inc.
- Taurus USA
- Thompson/Center Arms
- Wilson Combat
- Winchester

Optics
- ATN Corporation
- C-More Systems
- IOR Valdada
- Leupold
- Nothrop Grumman Electro Optical Systems
- Nikon USA
- Schmidt & Bender
- Simmons
- Tasco
- Trijicon
- Unertl
- US Optics
- Weaver Optics
- Carl Zeiss

Firearm Accessory Manufacturers
- Advanced Armament Corporation
- AWC Systems Technology
- Brügger & Thomet
- Gemtech
- Sound Technology
- Sure-Fire (Lights) (Suppressors)
- SWR Manufacturing, Inc.

Other Links Pages and Search Engines
- Gunhoo.com
- Gunindex.com
- Mel's Links
- Open Source Intelligence (04.14.04)
- SST's Rifle Room
- Variable's Gun Links

Ammunition Manufacturers
- Alliant Techsystems
- Alliant Powder
- Aguila Ammunition
- Cor-Bon
- Cascade Cartridge, Inc. (CCI)
- Dillon Precision
- Engel Ballistic Research
- Federal Cartridge Company
- RCBS Reloading
- Remington
- Sierra Bullets
- Speer Bullets
- Winchester

Shadowrun Links

Good Shadowrun Sites
- Dumpshock (Dumpshock Forums)
- Dystopian Visions
- Ballista Firearms Upgrade Guidebook
- The Sixth World
- Andy's Shadowrun Page
- Shadowland
- The Shadowrun Webring
- The Ancient Files
- Wired Reflexes

Firearms Creation Guide
- Firearms Creation Guide by Peter Millholland

Official Site
- http://www.shadowrunrpg.com/

SHADOWLAND

Handy Stuff
- Measurement Converter (English/Metric)
- Taylor Knockout Value
- Recoil Calculator
- Phonetic Alphabet
- Murphy's Laws of Combat
- ISO Country Codes
- US Patent and Trademark Office

Multimedia
- 1500 rounds-per-second (mp3, 26k)
- 2200 rounds-per-minute (mp3, 6k)
- .22 Long Rifle Report (wav, 130k)
- M82A1A Terminal Ballistics Demo (rm, 11780k)
- Shadowrun and Firearms Font Pack (zip, 363k)
- Cell Phone Gun (mpg, 528k)
- Big suprise, just for you!

Google BIATCH! [ ] Gimme!

mailto: raygun2112@hotmail.com

The Basics

kinetic energy n. 1. The energy possessed by a body because of its motion, equal to one half the mass of the body times the square of its speed. **KE=½*mv*²**

"A well-regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed."
- Second Amendment of the Constitution of the United States of America

Definition	
Shadowrun and Firearms Glossary	Sniper Country's Compendium of Terminology Abbreviations and Acronyms

Firearm Safety	Suppression	Types of Operation

Ammunition	
Bullet Types	Cased Ammunition Construction
Caseless Ammunition	Cased Ammunition Data
"Cop Killer" Teflon-coated Bullets	

Ballistics		
Patterns of Military Rifle Bullets	How Do Bullets Fly?	Terminal Ballistics

History	
Firearms History: A Timeline	A Brief History of Infantry Rifles

Java Tools		
Recoil Calculator	Taylor Knockout Value	English to Metric Conversion

Have a suggestion for this section of the site? Send it here!

Last Update

02.01.06

Whoa, hey! An update? Surely I jest...

Well, at the request of a few of you on the Dumpshock forums, I have been persuaded into updating the website a bit here. As I said in the forum, I have pretty much zero interest in SR4. Still on the fence about whether I'm going to go through the trouble of buying SR4 and adding the rules to the site. Right now it's looking like a pretty solid negative. That said, I may continue, on occasion, to update for SR3 rules for those of you who continue to use SR3. If you're interested in that, please either send me an e-mail and let me know or throw a post in this thread.

Anyway...

In continuing my fascination with Russian firearms, I have added the AKS-74U and the OTs-14 Groza. Both are interesting to me because they're compact versions of the Kalashnikov design, developed and manufactured in Tula (in other words, pretty much outside of the influence of Kalashnikov himself), firing cartridges other than the good old 7.62x39mm. The AKS-74U is the more traditional way of going about it, having a very abbreviated barrel and gas system, folding stock, and a right funny looking flash suppressor. It fires the 5.45x39mm M74. That punk bitch OBC's weapon of choice, it would appear.

The OTs-14 Groza (Thunder) is a bullpup version of the AK, firing a newer subsonic cartridge, the 9x39mm. A little crude looking, but that's the Russians for you. Function over fashion (often an admirable trait, IMO). Optionally, the thing is modular and comes as a package with exchangeable barrels and such. It's also a sneaky gun. Unfortunately, it's not southpaw-friendly. Unless you're a southpaw who likes to have his teeth knocked out by a charging handle. Shucks. Those Russians must think like Brits that way.

Added the Imbel MD2 and MD3 rifles, basically 5.56x45mm versions of the FN FAL. Or as the late Ian Hogg put it, and probably more accurately, "an M16 in FAL clothing." Don't know why these things are so interesting to me, but they are. I guess because it's tough to go wrong with a (proven) short stroke gas piston system. Pretty heavy, though.

In the handgun department I've added the Heckler & Koch P46 USC, HK's answer to the FN Five-seveN. To my knowledge, the compact version so far does not exist in reality. Just messin' with Fireworks, thought I'd add it. Also worked up a bit on the Guncrafter Industries Model 1 .50 GI, a .50-cal 1911 platform. The only thing better than a 1911 is a .50-cal 1911. It's a custom piece (witness the price tag), but I just couldn't pass it up.

Also, in an effort to bring a little more detail to the descriptions of some of the guns on this site (like you needed any more detail), I updated some of the pages, replacing the hum-drum, cut-and-pasted marketing text grabbed from the manufacturer's web sites with descriptions of my own. My original intent was to make the descriptive texts look as much like marketing hype as possible, in the fashion of SR books like the old Street Samurai Catalog and Fields of Fire. Turns out there's a pretty easy way to do that: Ctrl+C, Ctrl+V. But of course, some fucktard law school reject occasionally comes along and accuses me of plagiarism for not putting a "© 2005 Monkey Guns LLC" on the page somewhere, like it's not obvious I just lifted the damn marketing hype off of the damn manufacturer's damn web site. Well, okay. You got your way and I'm making the site better in the process. © 2006 Shut the Fuck Up and Go Away.

I updated the G36 and G36/7 pages. Consolidated the G36C into the G36 page and added some detail to both. Just so you're totally aware, the G36/7 is fictional, an idea I actually lifted from the original Rainbow Six NATO mod quite a while back. Well, I thought it was a decent idea... I've run into a few gun-interested people online with explanations about how the G36/7 isn't real, but I've also heard some reputable source that claims that HK are/were recently working on a 7.62x51mm version of the G36. Check it.

I think I updated the FAMAS page, too. And the M16 and M23 pages. And the FNC page. I'm on an assault rifle kick, apparently.

Also added the Shrike 5.56 to the machine guns section. The Shrike is a belt-fed, quick-change barrel LMG conversion for the AR15/M16 rifle platform, requiring a change of the upper receiver only. Depending on the configuration, it can feed from either a belt or a standard 30-round NATO STANAG magazine. Kind of handy in a logistical sort of way.

That's pretty much it. Over and out.

02.09.05

Well well. Here's a small update.

So after much consideration followed by significant procrastination, I've decided to fix something that's been bugging me a bit. That would be Concealability ratings for handguns.

Considering that most Light Pistols are around Conceal 6, and with that, to me, representing the kind of "standard" Conceal Rating for a defensive pistol (it's really not too difficult to hide most handguns), I've decided to adjust some things. From now on the vast majority of defensive handguns (light, medium and heavy) will have a base conceal rating of 6 rather than 5. Larger pistols (generally speaking, those with barrel lengths of six inches or greater) will still use a Conceal Rating of 5. Basically, this means that the guns have the same conceal range, while giving a bit of room to maneuver as far as bigger pistols and submachine guns are concerned. While Shadowrun does have a few pistols up in the Conceal 7 range, it seems to me like they have been tweaked to make for a pretty small pistol (or a smallish submachine gun), so I've decided to use Conceal 8 for exactly that. Downright huge pistols and some SMGs will represent a significant shift for this site, but as far as basic Shadowrun players are concerned, it really shouldn't make a major difference.

I also added the Beretta Px4 Storm and 8000S.

02.01.05

Holy shit. An update. The first of 2005. I'll be damned. The following has been updated since the last update (though not necessarily today)...

First things first: Much thanks to Adam and Mark for busting their asses to get Dumpshock back up to full speed after the crashy-poo. I'm glad I still have a place to post this stuff!

Updated several handgun pictures in the firearms section. All Glock pistols, All Kahr pistols, SIG 210, Sig-Sauer Compact (added P228 pic and reference in text). Added text references and pictures of the USP9SD and USP45CT on the USP Tactical page. Added pages for the P2000SK and USP Elite.

Submachine guns... Updated Heckler & Koch UMP pictures. Removed the Steyr TMP page and replaced it with the Brügger & Thomet MP9 page. In case you didn't know, Brügger & Thomet, the guys who make suppressors for HK, bought the rights for Steyr's TMP some time ago, re-engineered it a bit and release it under their own name. You can find an extremely informative website for the MP9 here.

Assault rifles... Added an Armalite AR-10 page, as well as a page for Bushmaster's slightly different version, the BAR-10. Both are 7.62x51mm versions of the AR15/M16. Why two different pages for pretty much the same gun you ask? Well, I'm not sure why, honestly. Because 7.62x51mm auto rifles are the shit? Because the AR-10 is neato, perhaps? Because the Bushmaster is more southpaw-friendly? Because I can? You pick.

Minor changes to the M16 page. Added a page for the Zastava M77, an AK-based 7.62x51mm rifle made in Serbia. That's right. Another 7.62x51mm auto rifle courtesy of your friendly neighborhood Raygun. God, I love 'em.

Music: Back to Tool, Lateralus. I love that song. These guys are so good I think I might have to find them and knee cap them. For those who are interested, here's some video of drummer Danny Carey playing the same part of the same song. Watch for the gong move. And check out his drums. They're made out of Paiste cymbal alloy. I bet that kit weighs somewhere in the neighborhood of three or four tons. Crazy.

Anyway, I think that's it for the updates for now, but there may be more shortly. I've been updating pages without FTP access to the site, and like a dumbass, I haven't been keeping very good track of what I've been updating, so I may find more to do over the next week or so.

And just to let you know, I'm working on a major overhaul of the site, so other than the potential straggling files, it could be quite a number of months before the next update.

10.13.04

Hey! Been a while. Have another small update for you here...

Added a few machine guns, namely HK's HK21 and HK23 light and medium machine guns, and US Ordnance's M60 series machine guns. Hope to add more of them in the near future, but as you may have noticed, time to add any significant update to this site has been at a premium over the last eight months or so. Busy busy.

Ironically enough, I'm adding this update right in the middle of hunting season. Got an elk tag this year, so the freezer will be stuffed by the second week of November. Been doing some bird hunting as well, after getting up somewhere between 85-90% busting clays all September. Despite warnings by the Montana FWP to the contrary, it's not to difficult to find sage grouse if you know where to look. Fat, ugly, slow birds. But big and tasty, too! They didn't have a chance.

So the Assault Weapons Ban is kaput, at least until Kerry gets elected, then it's back to Naziville in no time. So in the meantime, I bought another AR-15 (20") and a shitload of 30-round mags after selling off my 16" last year. This one is a Rock River with a quad rail handguard and a very evil-looking flash suppressor. Just recently slapped a 30mm BSA red dot on it and I must say, I highly recommend picking one up if you've never messed with a red dot before. They're no Aimpoint (they are not parallax-free), but they are cheap ($30 for mine), very fast and very fun. Other than that, I believe I'll be ordering a DSA SA58 Carbine by the middle of next year and that'll be the end of the scary rifles for a while.

Anyway, enjoy.

Oh, and the new song is a piece of "Tribal War" (track 12) from the *Black Hawk Down* soundtrack.

02.11.04

Another small update. Added Para Ordnance's Performance Series of high-capacity 1911 pistols. The only thing better than having a 1911 is having a 1911 with twice the ammo capacity.

And to go on with my recent fascination with Russian firearms, I've added the SVD to the sniper rifles section. The more I read about this thing, the more I want one. When the Assault Weapons Ban sunsets, I think I might actually have to get one. Also added the Bizon submachine gun, a nifty little number loosely based on the AK74 with a 64-round helical feed magazine.

Still working on the accessories section with what free time I have. I'm also thinking about putting together my own firearms creation system for Shadowrun, as I'm still not completely satisfied with the systems that have been made available thus far. Of course, I've been thinking about this for years now, so don't hold your breath.

10.10.03

Small update. Added the AK-107/108 rifles and the AN-94 "Abakan" to the assault rifles section. I've been reading a lot about Russian small arms lately (courtesy of Charlie Cutshaw) and seeing as how I own an AKM also, I've been getting very Kalashnikov lately. Ordell Robbie ain't bullshittin'. :)

The AK-107/108 rifles are kind of odd in that they include an internal recoil compensation system called "balanced automatics". More info about that on the page.

The AN-94, in case you've been living in California or Massachusetts for the past nine years, is the most advanced infantry rifle fielded with a military to date. It also has an internal recoil compensation system, but the method of operation is radically different from anything else out there. The AN-94 fires a two-round burst at a rate of 1800 rpm while simultaneously delaying recoil until the second bullet has left the barrel, then reverts to a full-auto ROF at 600 rpm if that mode is selected. Pretty nutty engineering. Check out the patent if you're into that kind of thing.

Also added a new pic to the AK102/104/105 file.

07.15.03

That's right. A little Led Zeppelin for you this time. Kashmir. Yeeuh.

Well, big update. That tends to happen when I don't update for months on end.

I've changed the menus a bit, made them a little more interactive. Added HK's P2000, several revolvers from Taurus, including the model 608 and 44 in .357 Magnum and .44 Magnum repectively, the Raging Bull and Raging Hornet for you big-ass revolver fans, and the Tracker series. Also added S&W's now ubiquitous Model 500. As Danny Vermin would say, *"It shoots through schools."* (It's unfortunate that that doesn't sound as rediculous and funny as it used to.)

Wrote a history and application file for submachine guns.

Added the AR-15/M16 series rifles, FN's F2000, and reorganized the M23 page in the assault rifles section.

Added IMI's Negev LMG to the machine guns section and updated the files for the MAG M240 and Minimi M249 SAW.

Updated the Body Armor section to account for the NIJ 0101.04 standard, updated the Suppression file, and did a bunch of other back-end stuff that won't make any difference to the casual surfer.

Working diligently on the Accessories section, as requested by about ten people. Hopefully it won't be too much longer before there are rules for bipods/tripods, compensators, holsters, magazines, mounting platforms, sighting devices, silencers and suppressors, stocks and recoil pads, and targeting devices. This represents a pretty good chunk of work, I tell you.

On 04.06.03, the Montana Army National Guard opened a new armory near where I live, so they decided to show it off with an open house. Needless to say, I had to check it out. I had the opportunity to play with (but not shoot) some pretty cool shit, namely an M249 SAW, an M240B MMG, an M24 SWS with AN/PVS10 day/night scope attached (very heavy), an M2HB, a MK19 MOD 3, and an M16A4/M203 with M68 close combat optics (known commercially as Aimpoint's Comp M red dot sight). Fun stuff.

I also got to play around in an M2A2 Bradley IFV. Sitting at the gunner's station and looking 3,000 yards downrange through the optics gave me romantic visions of joining the military. Well, for a few minutes, anyway. A cameraman from a local news station followed me around for a while after he heard me talking shop with the Bradley crew, so I got on the local news that night, too. Pretty cool. Anyway, I had a great time. If you hear about an event like this near you, I highly recommend checking it out.

That's pretty much it. Enjoy!

10.29.02

Hello once again.

I've been working on a javascript search engine that you can test out at the link provided. Let me know what you think, or if you have any better ideas. I'm not finished with the database yet, as my site has about three hundred pages and over a thousand individual files to search through. For now, it will search handguns by manufacturer, model, operation type, caliber, usage... Pretty cool. Should have it finished around this time next month.

There's also some new music on the splash page. That's the middle of a instrumental from a little band of canucks called Rush, off of the Counterparts album, called "Leave That Thing Alone". Rush is pretty much my mainstay band. Doesn't really matter what mood I'm in, I can pick out something from their catalog of nearly thirty years and be pretty well satisfied. They've influenced me quite a bit over the years. That riff is in 3/4 time, if you're interested in that sort of thing. :)

That's about it for now.

09.20.02

Hey! The splash page now plays the most famous jazz tune of all time (best-selling, anyway), "Take Five" by the Dave Brubeck Quartet. It was recorded in 1959, and can be found on the album titled "Time Out". The whole record is odd time signature stuff, meaning it actually ventures outside of common 4/4 time. This song is in 5/4. There is some utter coolness to be found in jazz music. Not only that, but it's actually relaxing as well. Doesn't put you on edge like the heavy stuff will. Anyway...

Added more of otomik's files, all Berettas. 21 Bobcat, 3032 Tomcat, 950 Jetfire.

Added Heckler & Koch's P9S.

Finally finished the Ammo By Caliber section. Only took about a year and a half.

I also added a wav file of a .22 rifle being fired several times. An interesting thing about .22 rifles is that the sound of the muzzle blast is usually so slight that you can actually hear the sound of the bullet moving through the atmosphere at supersonic velocity. It's a unique experience. You'll hear the initial pop of the muzzle blast, followed by what sounds like a tearing noise. That's the bullet's shock wave. There are also a few ricochets in there. (22report.wav)

08.26.02

By now I'm sure you've figured out that I've been messing around with Flash a bit. If you didn't notice, the splash page and the navigation bar are now flashamafied. The song you hear on the splash page is 7:21 into "Lateralis" by Tool. One of my favorite bands. I'll be changing the song periodically in order to subject all of you, against your will, to snippets of music that I don't care if you like or not. :)

Added some of otomik's files: Walther PPK, Makarov, PSM, Kel-Tec P-11, P-32, and SUB-2000. Also fixed a couple of pics in the Beretta department (Elite II and Vertec). Beretta hold-outs on the way...

Added Galil Assault Rifles and Battle Rifles.

One more page to go on the Ammo By Caliber section.

Um. Yeah.

07.29.02

Enormous update to every section of the site, especially the Firearms Section. Cosmetic changes have been made to each firearm page. I think it looks about a gagillion times better.

Seeing as the handgun is probably the most useful firearm for a Shadowrunner, I added a bunch of them. Beretta 93R, CZ75 and variants (CZ75 Compact, CZ75 P-01, CZ85), CZ83, CZ97, CZ100, Ruger GP100. Also added a couple of custom/semi-custom pistols; Ed Brown's Class A Limited, Kobra and Kobra Carry 1911s. I wanted to stay away from custom guns as that gives precident to adding a bunch of crap that doesn't really need to be on the site, but I just couldn't help myself. I'm a typical American handgunner (a big fan of the 1911) and Ed Brown makes some of the best 1911s out there. Had to give him props.

Fellow gunhead Otomik sent me about 73 gigs of handgun files to add to the site, some of which fall into areas that I've been lacking thus far (like anything Russian or hold-outish). I'll be adding those as soon as I can get around to it. The handguns section is already enormous. After I add these, I think I'll chill out on the pistols for as long as I can stand it.

Added a few submachine guns. Uzi, Mini Uzi, Micro Uzi, Steyr AUG 9 Para. Updated and split the SAF into three pages (SAF, Mini-SAF, SAF-SD).

Added the Neostead shotgun as an AET production. AET likes Tony Neophytou's stuff. Also added FABARM's Tactical automatic shotgun, Franchi's SPAS-15 (known affectionately as BUTT UGLY), and IGA-Stoeger's Coach Gun for you western/sawed-off double-barrel lovers.

Added a couple of assault rifles. Steyr AUG, STK SAR 21. Updated the Vektor CR21 page.

Added AMP's DSR-1 sniper rifle. This one seems to be a product of the Very Deep Pockets German weapons design league, which is encountered occasionally. Ultra precise and user adjustable bullpup bolt action. And as usual for German ingenuity and craftsmanship, ultra expensive. I don't know who actually buys this crap, but it sure is neat.

Started the new machine gun section out with FN's Minimi (M249) and MAG (M240) light and medium machine guns. Obviously, I'll be adding more as time goes on.

Added a bunch of accessories for the M23 in the Accessories Section. Also started a section for suppressors and silencers, which will be added to incrementally.

Ammo By Caliber is still nowhere near done, not that it could really ever be finished to my satisfaction, but DAMN it's a lot of work. I'm temped to give up on it. If you use it, let me know.

I think that's about it for now.

05.02.02

Added the Walther P22. I saw one at a gun show last week and thought about how nice it would be to slap a suppressor on it and do whatever you'd do with a suppressed .22. It's a very comfortable pistol, using the Morini grip similar to that on the P99. The P22 is about 3/4 the size of the P99. Small, comfortable, handy and potentially very quiet with Aguila .22 SSS ammunition.

Also added rules for explosive ammunition, shotgun flechettes and subsonic ammunition. These subsonic rules are intended to be used independently of the advanced rules for suppression. As you may have guessed, I've been reading *a lot* about suppression over the last few months...

Planning on putting together a section for light machine guns sometime soon, since a few of you have expressed interest in it.

I wish the Ammo By Caliber section wasn't such a gargantuan pain in the ass. TOO MUCH DATA! Sometimes I wonder if I'm ever going to finish it.

04.22.02

Decided to start actually recording when I upload things to Dumpshock. Hope this doesn't get to be a pain in the ass...

New advanced rules for suppression, updated the suppression page in the Basics section and added some accessories for the Colt M23.

Working on a section for suppressors that will go in the Accessories section. Hopefully, they'll add a little more personality to the subject.

Accessories

Bigger. Better. Faster.

For Specific Firearms

Bigger. Better. Faster.

Let's face it. A gun right out of the box will usually get the job done. But maybe it could do that job a lot better. If only someone made...

Odds are, someone does make it. And this is where you'll find it.

Le menú to your left.

Ammunition in General

Ammunition is one part of a firearm that Shadowrun writers have gone pretty far overboard with, in my opinion. Good enough for fun I suppose, but not enough to satisfy my sense of reality. Weapon caliber, functionality, and range of the ammunition itself have all been disregarded in the interest of simplicity. Understandable. But as far as I'm concerned, I'd like a better, more realistic explanation for some of the ammunition produced for the system.

Disspelling and Explaining

From page 276 of Shadowrun, Third Edition: ***"Many weapons offer two versions, for standard loads or for caseless ammunition."*** This is not a very well researched statement. Offering a wide variety of weapons using both principles would not be very cost-effective for the manufacturer of the weapon. The entire system of operation between the two principles is very different. Not to mention the implied politics involved with allowing the general public to have access to such weapons. For more information on caseless ammunition, please click here.

Another disagreeable statement occurs on page 279: ***"...each kind of gun can trade ammunition with another of its class."*** If you're a GM and want to let your players get away with that purely for simplicty's sake, that's fine. But it has no basis in reality and nullifies a great way for gamemasters to screw their players! Firearms are designed for different uses. Even firearms of a specific class are designed for different things. For instance, it wouldn't be a good idea to use a rifle chambered in .243 Winchester for hunting elk. There simply isn't enough bullet there to affect the animal reliably and quickly. A .338 Winchester Magnum would be a much better choice. These cartridges, both found in rifles of the Sport Rifle class, cannot be interchanged.

There are far more choices for ammunition than just APDS, Flechette, Explosive, Gel, Tracer, and "Regular". There are shaped bullets that use air pressure to produce more stopping power (such reverse ogive), there are bullets designed to destabilize and tumble after they hit a certain medium (read: flesh) in order to cause more damage (such as the 5.45x39mm Soviet's bullet), and bullets designed soley to disrupt tissue while causing the least amount of collateral damage (such as the Glaser Safety Slug).

Most of FASA's published ammunition for small arms is based off of ammunition which is used on a much larger scale, such as anti-materiel, anti-tank and artillery ammunition. Some of these types of ammunition would be rather useless on a small arms scale simply because there isn't enough space to fit the active materials into such a small bullet. Regardless, I'm going to try and explain these ammunition types.

A Brief Explanation of Ammunition Types

APDS stands for **Armor Piercing Discarding Sabot.** (That's *say-bow*, French for "shoe".) **The term "Armor Piercing" is not synonymous with APDS.** APDS was orginally designed as an anti-tank or anti-armor munition. It is used today in the Phalanx Close-In Weapons Systems (CIWS) for ship-based missile defense, and in the smallest form that I'm aware of, the 7.62mm Saboted Light Armor Penetrator, or SLAP round (US M948), very similar to the .50 caliber BMG SLAP round (US M903) used in the US M2 heavy machine gun.

An interesting fact for people who would use ballistic forensics to match a bullet to its gun, *a discarding sabot bullet does not show any rifling characteristics*. The sabot itself is what comes in contact with the barrel, and it discards from the bullet prior to impact.

For more information, click the SLAP/APDS link to your left.

Flechette is a broad term. Literally translated, it means "little arrow". It could mean a single, smaller projectile is used in a larger casing (as in a discarding sabot load), or it could mean numerous small projectiles in a single casing (similar to shot used in shotguns). It always means that one end of the projectile is pointed and meant to pierce the target.

As flechettes are explained in Shadowrun, the ammunition would be nearly useless beyond a few meters.

There are two ideas which we can use to explain **Explosive** ammunition. The first is **Explosive-tipped bullets**. Explosive-tipped bullets are essentially hollowpoint bullets with an explosive element designed to dramatically and rapidly enhance bullet expansion upon impact. (I would say this covers standard explosive ammo per Shadowrun rules.) The second are **Explosive bullets**. Explosive bullets are are traditional micro-grenades that cause the whole bullet to be blown apart on impact. (EX explosive per Shadowrun rules.)

Like most ammunition in Shadowrun, explosive ammunition is based off of real ammunition of a larger scale than most small arms cartridges. The smallest caliber explosive round I'm aware of is the .50 caliber (BMG) MK211 MOD 0 High Explosive Incendiary Armor Piercing (HEIAP) round used in the USMC M82A1A Special Application Scoped Rifle. Explosive ammunition should only be available in large diameter small arms bullets, such as .45-.50 caliber. The larger the bullet, the more explosive can be packed into it, giving that load a greater explosive effect. In smaller caliber bullets, the overall wounding effect would be no greater than using a much cheaper hollowpoint or frangible bullet, or a larger caliber round.

Incendiary ammunition is designed to ignite flammable materials after impact. The immense heat created by friction at impact will ignite a slow-burning chemical incased inside of the bullet. The bullet itself does not explode.

Gel rounds have a lot more potential to kill a person than is let on, as does anything coming out of the business end of a gun. The gel is lighter than a bullet, so wind resistance slows it down considerably. This also flattens it out, allowing it to smack against its target with relatively low kinetic energy.

These types of loads aren't usually available for anything but shotgun or grenade launcher-sized cartridges due to the fact that range and power would be severely limited with a conventional-sized bullet load. Range should be reduced by half for gel rounds.

Tracers are available for all kinds of ammuntion and are usually reserved for machine guns for the purpose of aiming. Tracers are an exclusive category of ammunition. There are such things as Armor Piercing Tracer munitions, Incendiary Tracer munitions, and Armor Piercing Incendiary Tracer munitions.

Rifle Velocity and Armor Penetration

Rifles are designed to fire a bullet over a much longer range than pistols. This is accomplished by a higher powder weight to bullet weight ratio, with the end result being that the bullet leaves the rifle at a much higher velocity. Rifle bullets are also shaped to better cut through the air, meaning that air resistance doesn't affect a them as much it does a pistol bullet. This helps rifle bullets retain velocity. In addition to providing a much longer effective range, these attributes also help in penetrating body armor.

When a bullet is fired at body armor, the armor attempts to catch the bullet in a web of very strong synthetic fibers, causing the bullet to deform and displace its energy over a much larger area than it would have otherwise. Compared to rifle bullets, pistol bullets are relatively slow, heavy, bluntly shaped, and most often are designed to expand on impact with the target in the interest of producing a larger wound cavity. These properties work against the bullet when it impacts body armor, allowing the armor more surface area to catch the bullet and displace its energy.

When a rifle bullet impacts body armor, a relatively large amount of kinetic energy, derived through velocity, is focused on a very small area at the point of the bullet. Focusing that energy on such a small area helps the bullet defeat the individual fibers of the body armor material, causing it to tear, allowing the bullet to pass through it. This effect is only magnified when the bullet is of a non-expanding type, or even worse, an armor-piercing type.

For this reason, as a very simple rule, I recommend applying a flat **x0.5 armor penetration modifier** to all rifle cartridges firing non-deforming bullets at a velocity above 2300 feet per second. The effects of AP bullets are added to this modifier. More in-depth rules can be found in the Ammunition By Caliber section.

Adding Structure

I have devised a table used to determine ammunition "swappability" in current Shadowrun firearms. You can check it out by following the link below, or clicking the link to your left. I also have a table designed to show applicable Damage Codes per cartridge, instead of the weapon itself having its own Damage Code. While this makes sense for melee weapons, it does not carry over well to firearms.

- Ammunition By Caliber (Advanced Rules)
- Cartridges and Damage Codes
- Current Shadowrun Firearm Cartridge Table

Additionally, here is a picture of a few pistol cartridges, shown as a size comparison.

Cased Cartridges and Damage Codes

Taking into consideration that this site would be of little use to anyone if I changed the system to closer resemble reality, I've decided to just go along with the current system for the most part, offering base damage codes for different cartridges to add a little variety. Advanced optional rules can be found in the Ammunition by Caliber section.

Pistol and Submachine Gun	Hold-out	Light Pistol	Medium Pistol	Heavy Pistol	SMG
4.6x30mm HK*					6M
.22 Long Rifle	4L	5L			
.25 Automatic	4L	4L			
5.45x18mm Soviet	6L	6L			
5.7x28mm FN P90*		(6L)	6M		7M
7.62x25mm Russian Tokarev	5M	(8L)	6M		7M
.32 Automatic	5L	6L			
9mm Makarov	5L	6L			
9mm Parabellum (Luger)	5M	(6L)	6M		7M
9x23mm Winchester	6M			9M	
.357 SIG	6M			9M	
.380 Automatic (9mm Kurz)	5L	6L			
.38 Super	6M		8M	(9M)	
10mm Automatic	7M			9M	9M
.40 S&W	6M		8M	(9M)	9M
.400 Cor Bon	7M			9M	
.40 Super	7M			10M	
.44 Auto Mag				10M	
.440 Cor Bon Magnum				12M	
.45 ACP	6M		8M	(9M)	9M
.45 Super	7M			9M	9M
.45 Winchester Magnum				9S	
.475 Wildey Magnum				10S	
.50 Action Express				9S	

*4.6x30mm HK and 5.7x28mm FN P90 both receive an automatic x0.75 Armor Modifier.

Revolver	Hold-out	Light	Medium	Heavy
.22 Long Rifle	4L	5L		
.357 Magnum	7M			9M
.38 Special	4M	(6L)	5M	
.41 Magnum				9M
.44 Special			8M	(9M)
.44 Magnum				10M
.45 Colt	6M		8M	(9M)
.454 Casull				10S
.475 Linebaugh				10S
.500 Linebaugh				10S
.500 Magnum				10S

Rifle and Carbine*	Carbine	Assault	Sport	Sniper
.22 Long Rifle	4M		5M	
.22 Hornet	8M		9M	
5.45x39mm Soviet	8M	9M	9M	
.223 Remington (5.56x45mm NATO)	8M	9M	9M	9M
.22-250 Remington			10M	
.243 Winchester			8S	8S
.25-06 Remington			9S	9S
6.5x55mm Swedish Mauser	7S		8S	8S
.260 Remington			9S	9S
.270 Winchester			9S	9S
.270 Weatherby Magnum			10S	10S
7x57mm Mauser	8S		9S	9S
7mm-08 Remington	8S		9S	9S
7mm Remington Magnum			11S	11S
30-30 Winchester	7S		8S	
.308 Winchester (7.62x51mm NATO)	8S	9S	9S	9S
.30-06 Springfield			10S	10S
.300 Winchester Short Magnum (.300 WSM)			12S	12S
.300 Winchester Magnum			12S	12S
7.62x39mm Soviet	8M	9M	9M	
7.62x53Rmm Russian			10S	10S
.303 British	8S		9S	9S
8x57mm Mauser (7.92x57mm Mauser)			10S	10S
.338 Winchester Magnum			13S	13S
.338 Lapua Magnum			14S	14S
.340 Weatherby Magnum			14S	14S
9x90mm Metallwerk Elisenhütte Nassau (MEN)				13D
.375 Holland & Holland			10D	
.404 Jeffrey			9D	
.408 Cheyenne Tactical				13D
.416 Rigby			10D	
.416 Remington Magnum			9D	
.444 Marlin	8S		8S	
.45-70 Government	9S		9S	
.450 Marlin	10S		10S	
.458 Winchester Magnum			9D	
.470 Nitro Express			10D	
.50 Browning (BMG)				14D
12.7x108mm Soviet				14D
14.5x114mm Soviet				18D
.585 Nyati			13D	
600 Nitro Express			11D	
700 Nitro Express			12D	

*All rifle cartridges (barring .22 Long Rifle) receive an automatic x0.75 Armor Modifier.

This is by no means a complete list of cartridges. It should be used as a general guide line.

As I'm sure you've already seen, I have added a field for Medium Pistols. This makes a lot of sense for "unplaced" cartridges to fill the gap between the 6L damage of Light Pistols, and the 9M damage of Heavy Pistols.

Modifiers and Penalties

- An automatic x0.5 Armor Modifier should be applied to any cartridge firing a non-expanding bullet at a muzzle velocity exceeding 2300 feet per second. Additional modifiers apply to these cartridges when using armor-piercing projectiles.
- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive +1 Power if barrel length exceeds 8" (203mm). This bonus is reflected under "Submachine Gun" weapon type entries because it is assumed that submachine guns have barrels greater than 8" (203mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive -1 Power if barrel length is less than 2.5" (63mm). This penalty is reflected under "Hold Out" weapon type entries because it is assumed that hold out pistols have barrels less than 2.5" (63mm) in length. (Occasionally -2 Power is applied if velocity is particularly important to a cartridge's ballistics.) This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing intermediate power rifle cartridges (e.g., .223 Remington) receive -1 Power if barrel length is less than 12" (304mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels less than 12" (304mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing full power rifle cartridges (e.g., .308 Winchester) receive -1 Power if barrel length is less than 16" (406mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels less than 16" (406mm) in length. This may not always be the case, so pay attention when designing your own weapons.

Current Shadowrun Firearms Cartridge Table

To use this table, select the frame the table is in, hit **CTRL+F** and type in what you're looking for. It's a little quicker that way.

Newer types of ammunition could be created in the Shadowrun timeline, so use this as a general guide. This table does not assume (per SR3) that all weapons are available for use with caseless ammunition. Caseless ammunition is taken into account only where stated.

A "/" means that the weapon can fire either cartridge without modification. An "OR" means that the weapon must be chambered for one cartridge or the other.

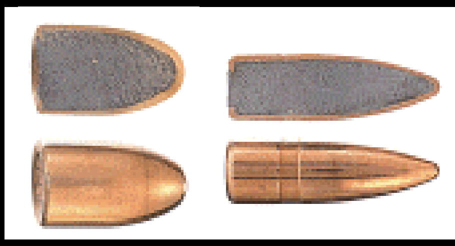
Sport Rifles: Sport Rifles are available in so many calibers that it's nothing short of mind boggling. So i've listed the more common calibers.

Weapon	Caliber	Source
Ares Alpha Combat Gun (w/ 20mm Grenade Launcher)	5.56mm NATO	FOF
Ares Antioch Grenade Launcher	20mm Grenade	SR3
Ares Crusader Machine Pistol	9mm Parabellum	SSC
Ares High Velocity Assault Rifle (HVAR)	?? Caseless	FOF
Ares High Velocity LMG (HVLMG)	?? Caseless	FOF
Ares Light Fire 70	.380 Automatic	SSC
Ares MP-LMG	7.62mm NATO	SSC
Ares Omega Combat Gun (w/ 20mm Grenade Launcher)	5mm Caseless	Raygun
Ares Predator (1 & 2)	10mm Automatic	SR3/SSC
Ares Predator 3	10x24mm M309	Raygun
Ares Vanquisher Minigun	.50 Browning Machine Gun	R2
Ares Vengance Minigun	7.62mm NATO	R2
Ares Victory Autocannon	35mm CTA	R2
Ares Vigilant Autocannon	45mm CTA	R2
Ares Vigorous Assault Cannon	20x83mm MG151	SR3
Ares Viper Slivergun	??	SR3
ArmTech MGL-12	20mm Grenade	FOF
ArmTech MGL-M6	20mm Grenade	FOF
Barrett Model 121	.50 Browning Machine Gun	FOF
Benelli M1 Smart Tactical	12 gauge	Raygun
Benelli M3 Super 90	12 gauge	Raygun
Beretta 200ST Machine Pistol	9mm Parabellum	SSC
Beretta Model 101T	9mm Parabellum	SR3
Beretta Model 70	9mm Parabellum	SSC
Browning Max Power	.40 S&W	SR3
Browning Ultra Power	.40 S&W	SSC
Carswell M443 ATG Grenade Launcher	20mm Grenade	Raygun
Ceska Black Scorpion	9mm Parabellum	SSC
Ceska vz220	.380 Automatic	SSC
Colt America L36	.380 Automatic	SR3
Colt Cobra (any model)	9mm Parabellum	FOF
Colt M22A2 (w/ 20mm Grenade Launcher)	5.56mm NATO	SSC
Colt M-23	5.56mm NATO	FOF
Colt Manhunter	.40 S&W	SSC
Defiance T-250	12 gauge	SR3
Desert Eagle .357	.357 Magnum	Raygun
Desert Eagle .44	.44 Magnum	Raygun
Desert Eagle .50	.50 Action Express	Raygun
Eichiro Hatamoto II	20 gauge	NAGTRL
Enfield AS-7	12 gauge	SR3
Fabrique Nationale Heavy Assault Rifle (HAR)	7.62mm NATO	SR3
Fabrique Nationale MAG5 MMG	7.62mm NATO	SSC
Fabrique Nationale Uzi III	9mm Parabellum	SR3
Fechetti Executive Action	9mm Parabellum	NAGTRL
Fechetti Security 500 (any model)	9mm Parabellum	SR3
Franchi SPAS-22	12 gauge	FOF
General Electric Vindicator Minigun	5.56mm NATO	SSC
Glock 17	9mm Parabellum	Raygun
Glock 18	9mm Parabellum	Raygun
Glock 20	10mm Automatic	Raygun
Glock 29	10mm Automatic	Raygun
Gun Cane	9mm Parabellum	NAGTRL
Hammerli Model 610S	.22 Short/Long/Long Rifle	FOF
Heckler & Koch G12 (any model)	5mm Caseless	SSC/Raygun
Heckler & Koch G3 (any model)	7.62mm NATO	Raygun
Heckler & Koch HK227 (any model)	10mm Automatic	SR3
Heckler & Koch HK70A4 Grenade Launcher	20mm Grenade	Raygun
Heckler & Koch HK94 SG/1-SL2	9mm Parabellum	Raygun
Heckler & Koch MP-5 (any model)	9mm Parabellum	Raygun
Heckler & Koch MP-5/10 (any model)	10mm Automatic	Raygun
Heckler & Koch MP-5/40 (any model)	.40 S&W	Raygun
Heckler & Koch P7K3	.380 Automatic	Raygun
Heckler & Koch P7M8 and P7M13	9mm Parabellum	Raygun
Heckler & Koch PSG/1	7.62mm NATO	Raygun
Heckler & Koch UMP45 (any model)	.45 ACP	Raygun
Heckler & Koch USP40	.40 S&W	Raygun
Heckler & Koch USP45	.45 ACP	Raygun
Heckler & Koch USP9	9mm Parabellum	Raygun
Ingram Smartgun 20t	.45 ACP	SSC
Ingram SuperMach 100	9mm Parabellum	FOF
Ingram Valiant LMG	5.56mm NATO	SR3
Ingram Warrior-10	10mm Caseless	FOF
M3 Jackhammer Combat Shotgun	12 gauge	Raygun
Morrissey Alta	.40 S&W	NAGTRL
Morrissey Elan	9mm Parabellum	NAGTRL
Morrissey Elite	.40 S&W	NAGTRL
Mossburg CMDT (any model)	12 gauge	SSC
Panther Assault Cannon	20x82mm MG151	SSC
Raecor Sting	??	NAGTRL
Ranger Arms SM-3	7.62mm NATO	SR3
Remington 750	Anything between .222 Remington and .303 British	SR3
Remington 950	Anything between .308 Winchester and .458 Winchester Magnum	SR3
Remington 990 Shotgun	12 gauge	FOF
Remington Roomsweeper	20 gauge	SR3
RPK Heavy Machine Gun	7.62mm Soviet	SR3
Ruger 100	Anything between .222 Remington and .303 British	SSC
Ruger Super Warhawk	.44 Magnum	SR3
Ruger Thunderbolt	.45 ACP	LS
Sandler Tactical Machine Pistol (TMP)	9mm Parabellum	SSC
Savalette Guardian	.45 ACP	FOF
SCK Model 100	10mm Automatic	SSC
Seco LD-120	9mm Parabellum	SSC
M-79 Grenade Launcher	40mm Low-Velocity Grenade	Raygun
Singapore Ultimax MMG	7.62mm NATO	SR3
SITES Resolver	.380 Automatic	Raygun
Smith & Wesson Gen5 Model 1173FBI	10mm Automatic	Raygun
Smith & Wesson Gen5 Model 5903LE	9mm Parabellum	Raygun
Smith & Wesson Model 586	.357 Magnum/.38 Special	Raygun
Smith & Wesson Model 686	.357 Magnum/.38 Special	Raygun
Soviet AK-97	5.45mm Soviet	SR3
Soviet AK-97 SMG	5.45mm Soviet	SR3
Soviet AK-98 (w/ 40mm Grenade Launcher)	5.45mm Soviet	SR3
Steyr AMR 5095 Anti-Materiel Rifle	15.2mm AMR	Raygun
Steyr AUG-CSL Weapon System	5mm Caseless	SSC
Steyr-Mannlicher SSG-69	7.62mm NATO	Raygun
Stoner-Ares M107 GPHMG	.50 Browning Machine Gun	SSC
Streetline Special	.22 Short/Long	SR3
Tiffani Bracer	9mm Parabellum	NAGTRL
Tiffani Self Defender	.22 Short/Long	NAGTRL
Walther WA-2100	.300 Winchester Magnum	SSC
Walther Palm Pistol	.45 ACP	SR3
Walther PB-120	.380 Automatic	FOF

Regular Ammunition

This page has been created to set basic guidelines for what FASA has described as "**Regular Ammunition**". This description covers military "ball" ammunition. Please remember that this page only covers regular ammunition, and any special munitions will not apply to this file.

Lead - The bullet is soley comprised of a lead/antimony or lead/bismuth alloy. The bullets used in small caliber rimfire cartridges such as .22 Long Rifle are of lead ay construction, as well as certain shapes for larger calibers, such as **round nose**, **wadcutters** and **semi-wadcutters** (pictured).



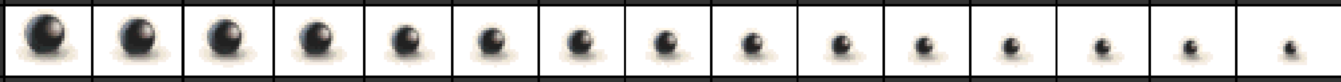
FMJ - stands for **Full Metal Jacket**. An FMJ bullet is comprised of a lead alloy core, usually surrounded by a copper sleeve, or "jacket". A bullet using a full metal jacket is designed to decrease the chances of bullet expansion on contact with a semi-fluid medium, creating a minimal wound cavity.

Other type of bullets that work in the same way are **Total Metal Jacket (TMJ)** and **Full Metal Case (FMC)**.

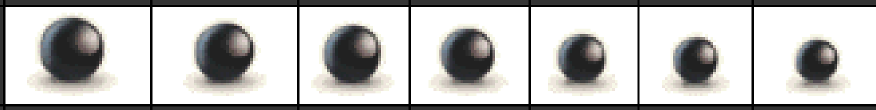
Jackets can be adhered to a bullet in several different ways. They can be swaged onto a bullet (squeezed on), electroplated, or chemically adhered as in nylon jackets.

Shot - Shot is used in shotgun shells. It consists of lead, steel or tungsten alloy pellets available in different sizes, and consequently different counts per size. Choosing between one or the other is a trade-off. If the shot is small, greater area will be covered, but the smaller shot will not penetrate as well as larger shot. The bigger the shot is, the less area they will cover as a whole. But one pellet will penetrate better than a smaller one. All of this is trivial, because all grades of shot have the same effect per Shadowrun rules. (A rule I can truly say is better for simplicity's sake.)

Lead Shot Sizes

	F	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9
Pellet Diameter															
Inches	.22	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08
Millimeters	5.59	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03

Lead Buckshot Sizes

	No. 000	No. 00	No. 0	No. 1	No. 2	No. 3	No. 4
Pellet Diameter							
Inches	.36	.33	.32	.30	.27	.25	.24
Millimeters	9.14	8.38	8.13	7.62	6.86	6.35	6.10

Sabot Slug	Rifled Slug (Foster)
	

Slug - A slug is a single, solid lead projectile fired from a shotgun. They are also available in different weights and sizes, though most of them do not lend to great accuracy. Some slugs rifled to force air between the grooves of the rifling on the slug and the smooth-bore barrel to help stabilize the slug's flight with spin, helping to increase range. Other slugs are designed for use in rifled barrels (shotguns with rifled barrels are commonly called "slug guns") and use a two-piece discarding sabot to increase velocity and consequently, range.

Any ammunition using principles different to or beyond these posted should have their own classification, and rules should be adjusted to suit the fact that they will cause more or less damage, and could have ranges that differ from the base numbers on the **Weapon Range Table**.

Ammo By Caliber
back

Bang Bang | Suppression
Cartridges by Weapon Class
Pistol Cartridges
Revolver Cartridges
Carbine Cartridges
Rifle Cartridges
Suppressed Rifle Cartridges
Anti-Matériel Rifle Cartridges
Cannon Cartridges

Caseless Cartridges

Weapon Class Ranges

Bang Bang, You're Dead. Hole In Your Head.

This section is designed to provide very in-depth information and advanced damage rules for the Shadowrun game system. The Damage Codes represented here will supercede those posted in the Cased Cartridges and Damage Codes file.

An effort has been made to keep the rules in this section as close as possible to the current Shadowrun system. I did not intend to make the Shadowrun damage system any more realistic by introducing these rules (obviously, that is impossible), I merely intend to bring a more practical level of leathality to firearms within the system, and to give you an idea of where certain cartridges fit in the real world, if you're not very firearm-savvy. I don't expect many people to use these rules, but information is provided that may be useful beyond the damage codes. You can always swap the posted damage codes with your own. Proceed with that in mind.

If you haven't yet, for the love of whatever you consider to be of the highest order in your life at this moment, read Basics of Suppression and the Suppression and Velocity Control rules before you get any further in this section. Go. Now. Take a few minutes and read both of them. They will make this section a bit easier to comprehend.

Cartridge Tables

Each cartridge has its own table which displays a wealth of information, including:

- The cartridge's name, plus any alternate names it might be known by.
- A short description and notes on the cartridge's development history and/or modern uses.
- Weapon Classes the cartridge can be used in, along with Base Damage Codes for each Weapon Class. Weapon classes are considered a function of range rather than a specific Damage Code. You can click the following link to review my revised Weapon Class Ranges.
- Primary bullet type.
- Range of bullet mass commonly used in the cartridge, from lightest to heaviest, expressed in *grains* (gr).
- Range of muzzle velocities the cartridge is commonly loaded to, from fastest to slowest, expressed in *feet per second* (fps).
- Type of case used.
- Overall length of the cartridge, expressed in both *inches* (in) and *millimeters* (mm).
- Maximum diameter of the cartridge, expressed in both *inches* (in) and *millimeters* (mm).
- Whether or not it is possible to reload the cartridge.
- In what quantity the cartridge is commonly sold at retail, per box.
- Conceal Rating per box of ammunition.
- Effects of suppression on the cartridge. (I wasn't kidding. Read this and this.)
- Additional notes regarding the cartridge's use. Most rifle cartridges include an automatic armor penetration modifier depending on their velocity and the type of bullet they fire. Basically, rifle cartridges tend to penetrate armor much better than handgun cartridges. See below.
- A list of bullet or payload types available for the cartridge, with adjustments to the weapon's Base Damage Code and general performance.
- And finally, how much each loading costs, per box.

Modifiers and Penalties

- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive +1 Power if barrel length exceeds 8" (203mm). This bonus is reflected under "Submachine Gun" weapon type entries because it is assumed that submachine guns have barrels greater than 8" (203mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive -1 Power if barrel length is 2.5" (63mm) or less. This penalty is reflected under "Hold Out" weapon type entries because it is assumed that hold out pistols have barrels less than 2.5" (63mm) in length. (Occasionally -2 Power is applied if velocity is particularly important to a cartridge's ballistics.) This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing intermediate power rifle cartridges (e.g., .223 Remington) receive -1 Power if barrel length is less than 12" (304mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels less than 12" (304mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing full power rifle cartridges (e.g., .308 Winchester) receive -1 Power if barrel length is less than 16" (406mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels lengths of 16" (406mm) or less. This may not always be the case, so pay attention when designing your own weapons.

Rifle Velocity and Armor Penetration

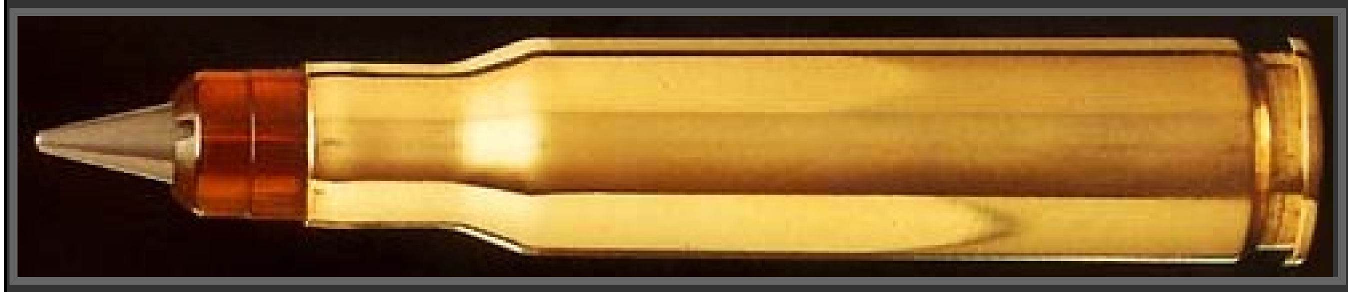
As explained on the main page of the ammunition section, I generally recommend applying a flat **x0.5 armor penetration modifier** to all rifle cartridges firing non-deforming bullets at a velocity above 2300 feet per second. The effects of AP bullets are added to this modifier.

In the near future, I will be adding an armor penetration modifier to each rifle cartridge entry in order to make these rules more realistic.

I probably shouldn't let you see this stuff without mentioning that a lot of the information was gathered from ***Cartridges of the World*** by Frank C. Barnes and M. L. McPherson (8th and 9th Editions).

As always, your input is appreciated. If you have any ideas about adding certain cartridges, real or fictional, drop me a line. Send mail to raygun2112@hotmail.com.

APDU / APDS-DU



Armor Piercing Depleted Uranium (APDU) is a term that is most often applied to medium-caliber (20mm-50mm) ammunition that includes a depleted uranium penetrator. Because of the extreme density and hardness of depleted uranium compared to more mundane metals and alloys, specifically those used to manufacture rifle barrels, DU projectiles are never used without some kind of sabot or other soft jacket or coating material designed to come in contact with barrel rifling and transfer spin to the projectile. The DU projectile would simply destroy barrel rifling otherwise.

APDS-DU

Generally, munitions that include a depleted uranium pentrator also include a discarding sabot. Armor Piercing Discarding Sabot - Depleted Uranium (APDS-DU) is a term that specifically describes a two-part payload. The first part of the payload consists of a sub-caliber armor-piercing (**AP**) depleted uranium bullet, sometimes called a flechette, dart, or penetrator.

The second part of an APDSDU payload is a discarding sabot (**DS**). This is a plastic collar that fits between the sub-caliber bullet and the barrel's bore. The sabot lightens the load that the propellant charge must push from the barrel, increasing the bullet's velocity substantially. This higher velocity facilitates greater penetration. Shortly after exiting the muzzle, the sabot is stripped from the bullet by centrifugal force and wind resistance, leaving the bullet free to move down range independently from the sabot.

APDU

Though none exist at this point in time, a DU munition could be developed without the need for a sabot. For that reason, it is necessary to differentiate between a true APDU munition and an APDS-DU munition.

A true APDU munition could consist of a depleted uranium penetrator surrounded by a thick guilding alloy or soft steel jacket. Alternately, a thick teflon coating or some other synthetic coating could be used. This would be sufficient to keep the DU penetrator from coming into physical contact with the barrel. This type of load would be more common for small caliber munitions.

About Depleted Uranium

Depleted uranium is a byproduct of the process that produces enriched uranium for use in atomic weapons and nuclear power plants. Fissionable isotopes are removed from the uranium, leaving mostly U-238 isotopes. What's left is a very heavy, dense metal, 1.6 times denser than lead. Depleted uranium is also pyrophoric. The severe friction of impact with other hard materials such as vehicular armor, an engine block, or body armor plates will cause the DU to ignite and continue to burn in a sustained fashion.

Additional Side Effects

While all of this is technically possible, it is not very practical. Because of the extremely high cost involved with producing and machining depleted uranium, APDU/APDS-DU is not a very cost-effective solution in any weapon firing ammunition smaller than 20mm caliber. Any effect the projectile would have could be accomplished by a much more cost-effective material, such as tungsten carbide.

There is also a social stigma involved with using moderately radiated heavy metals as penetrator materials. One theory behind the "Gulf War Syndrome" alleges that the syndrome was caused by the inhalation of particles of depleted uranium, causing cancer and other illnesses.

Unfortunately, the properties that make SLAP/APDS extremely good armor pentrating munitions (very hard bullet, high velocity) tend to compromise its ability to maximize wounding effects to tissue, especially when no form of armor is present. Typically, velocity is so high and the projectile so hard that unless vital organs or nervous tissue are affected, the wound is relatively easy to repair. For the vast majority of anti-personnel applications, any effect the high-velocity tungsten carbide projectile would have could be accomplished by a much more cost-effective solution, such as conventional steel-cored AP projectiles. At the small arms scale, SLAP/APDS will not penetrate much better than a standard, steel cored armor piercing round.

Last but not least, most firearms are designed to fire a bullet of a particular mass and length, gyroscopically stabilizing that mass in flight through the use of barrel rifling. The penetrator of any APDS projectile is sub-caliber, meaning that it is much smaller and lighter than the type of bullet a given firearm was designed to fire. Generally speaking, APDS loads are considered inaccurate at longer ranges because the rifling twist rate is usually not fast enough to properly stabilize the smaller bullet in flight.

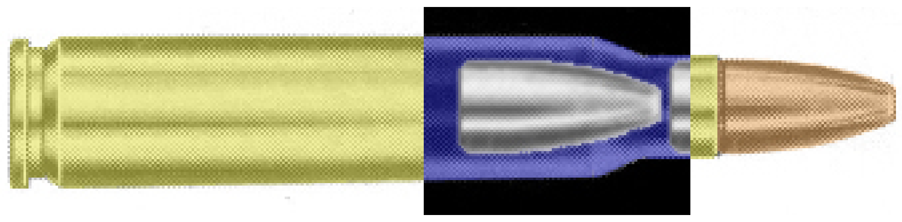
Game Masters should keep these negative side effects in mind during game play and apply additional house rules to represent these side effects at their discretion.

Type	Game Effect	Comments
APDU APDS-DU	Armor reduction is listed below as soft armor/hardened (military/vehicular) armor. Treat as anti-vehicular (SR3.149). As always, round down. Apply a +1 Target Number modifier at Long range, and a +2 Target Number modifier at Extreme range. The incendiary effect is initiated by friction with hard targets (vehicles, concrete, cyberware) only. It lasts for 15 turns, inflicting 8L damage every Combat Phase until the 15 turns are over, or the flames are put out.	Availability and Street Index are at GM Discretion

APDU	Armor Reduction	Count	Conceal	Weight	Cost
Heavy Pistol	-55%/-20%	50	8	1	125 ¥
Submachine Gun	-60%/-25%	100	4	2	250 ¥
LMG/Assault Rifle	-80%/-30%	100	4	1.2	250 ¥
MMG/Battle Rifle	-80%/-30%	100	4	2.8	400 ¥
Sport/Sniper Rifle	-80%/-30%	50	8	1.4	200 ¥

APDS-DU	Armor Reduction	Count	Conceal	Weight	Cost
Sport Rifle/Sniper Rifle	-90%/-35%	50	8	1.3	225 ¥
MMG/Battle Rifle	-90%/-35%	100	4	2.6	450 ¥
HMG/Heavy Sniper Rifle	-100%/-50%	100	NA	11.5	1,125 ¥
AMR/Assault Cannon	-100%/-60%	100	NA	21	4,500 ¥

Duplex Ammunition



The duplex round uses two projectiles, the front bullet weighing 2.26g (35 grains) and the rear 2.14g (33 grains) in 5.56mm.

This causes a slight random dispersion effect, where the lead bullet hits the point of aim and the second strikes on a divergent path.

Duplex ammunition is effective at ranges of up to 325 meters.

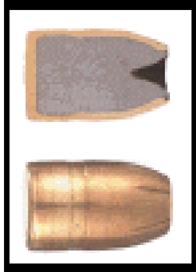
Type	Game Effect	Availability
Duplex	+2 Power Rating. Due to the dispersal effect of this ammunition, users receive a -2 Target Number modifier in SS or SA modes, -1 in BF mode, and no modifier in FA mode. The use of targeting devices other than iron sights negate these bonuses. This ammunition is intended to be used in assault rifle cartridges only.	6/72 hrs

Ranges	Short (4)	Medium (5)	Long (6)	Extreme (9)
Carbine/Assault Rifle	0-25	26-100	101-200	201-325

Type	Count	Conceal	Weight	Cost
Carbine/Assault Rifle	50	6	1.2	35 ¥

Expanding Bullets

There are several different types of expanding bullets.

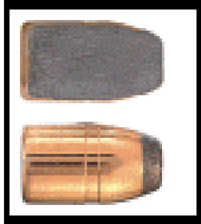


JHP (Jacketed Hollow Point)

A small cavity is formed from the tip into the core of the bullet. The bullet is jacketed up to the tip, stopping where the tip is hollowed out. When the hollow point strikes a material such as water or flesh, the bullet expands rapidly, allowing it more surface area to tear through the target. This term is used mostly for rifle ammunition.

SJHP (Semi-Jacketed Hollow Point)

With more exposed lead at the tip, the SJHP expansion is a little more rapid and less controlled than a jacketed hollow point bullet. Penetration is also controlled for maximum energy transfer to the target, assuring its suitability as a hunting bullet.



SP (Soft Point)

Exposed lead soft point initiates reliable expansion, provides deeper penetration than hollow point bullets without as much expansion.

EFMJ (Expanding Full Metal Jacket)

These bullets consist of two-part core. The lower half is standard lead alloy, the top half composed of a silicone rubber plug. The core is contained withing a notched jacket so that when the bullet strikes the target, the jacket itself is pushed back toward the lead core, expanding the jacket and silicone into the mushroom shape you see to the left.

HPBT (Hollow Point Boat Tail)

This term is used for rifle ammunition. This bullet consists of the usual lead core with a gilding metal jacket, only in this case, the tip of the jacket has a small hole which opens into an area of air space ahead of the lead core. This insures that weight is distributed to the rear of the bullet, while keeping an aerodynamic shape. This helps keep the bullet from wobbling in flight at low velocities, increasing accuracy. The hollow point **does not** provide much benefit as far as terminal ballistics are concerned and is only included here for informational purposes. Use Match Ammunition rules for these bullets.

Polymer Tip

In this bullet, the tip and core are specially shaped so that when the bullet impacts the target medium, the soft polymer tip deforms and is driven back into the bullet's core, initiating expansion. Different jacket thicknesses are used to control the rate of expansion. The thicker or more dense the tissue, the thicker the jacket.

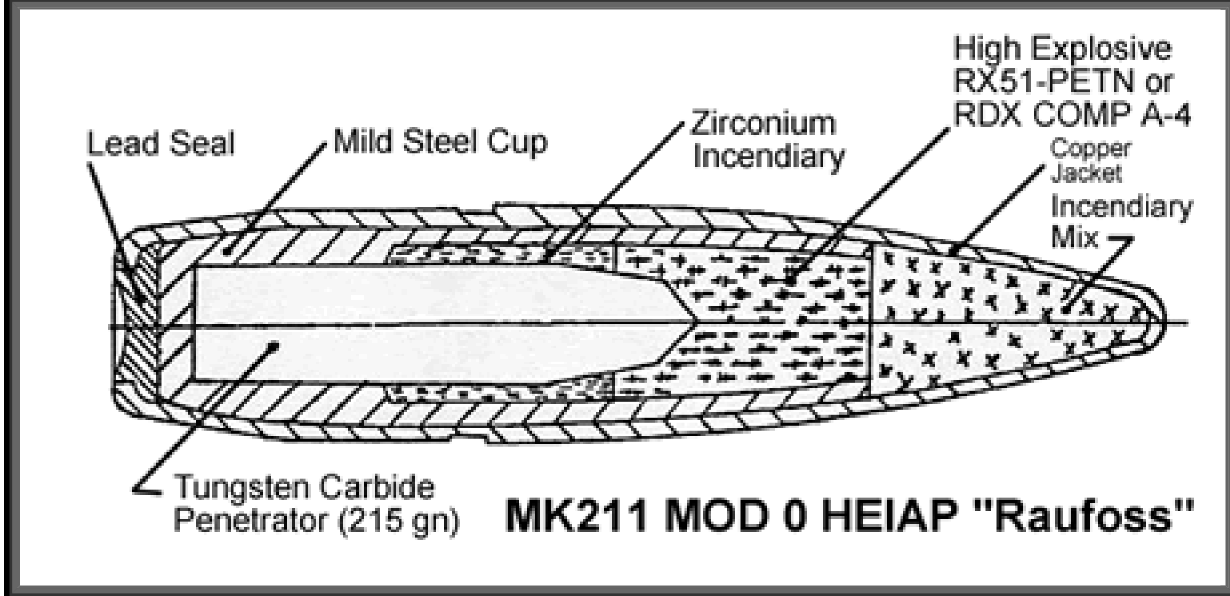
The PTBT bullet (rifle only) is essentially the same as an HPBT bullet, the difference being that instead of airspace in the nose of the bullet, a plastic tip occupies the space. These bullets use rules for both Polymer Tip (listed below) and Match Ammunition.

Type	Game Effect	Availability
Lead Hollowpoint (HP)	These expanding-type bullets provide +1 Power against unarmored targets only. Used against armored targets, this bonus may not be applied and the Armor Rating may be increased by one half (x1.5, round down).	Per Regular
Semi-Jacketed Hollowpoint (SJHP)		Per Regular
Jacketed Hollowpoint (JHP)		Per Regular
Soft Point (SP)		Per Regular
Expanding Full Metal Jacket (EFMJ)	EFMJ bullets provide a +1 Power against unarmored targets and lightly armored targets. Used against armored targets, this bonus may not be applied and the Armor Rating may be increased by one quarter (x1.25, round down).	Per Regular (Handgun Only)
Polymer Tip	Polymer Tip bullets provide a +1 Power against unarmored targets and lightly armored targets. Used against armored targets, this bonus may not be applied and the Armor Rating may be increased by one quarter (x1.25, round down).	Per Regular
Polymer Tip Boat Tail	Polymer Tip bullets provide a +1 Power against unarmored targets and lightly armored targets. Increase range by 35%. Used against armored targets, this bonus may not be applied and the Armor Rating may be increased by one quarter (x1.25, round down).	Per Regular

Handgun	Count	Conceal	Weight	Cost
Lead Hollowpoint (HP)	50	8	2	10 ¥
Semi-Jacketed Hollowpoint (SJHP)	50	8	2	12 ¥
Jacketed Hollowpoint (JHP)	50	8	2	15 ¥
Soft Point (SP)	50	8	2	12 ¥
Expanding Full Metal Jacket (EFMJ)	50	8	2	20 ¥
Polymer Tip (PT)	50	8	2	20 ¥

Rifle	Count	Conceal	Weight	Cost
Jacketed Hollowpoint (JHP)	20	6	1	15 ¥
Jacketed Soft Point (JSP)	20	6	1	12 ¥
Lead Hollowpoint (HP)	20	6	1	10 ¥
Pointed Soft Point (PSP)	20	6	1	12 ¥
Polymer Tip Boat Tail (PTBT)	20	6	1	15 ¥

Explosive Ammunition



There are two basic types of explosive ammunition for small arms. Both types use chemical explosives to enhance expansion and create fragments of material on or after impact with a relatively hard target medium. Because they generate a good deal of heat while exploding, both types have the secondary effect of igniting most flammable materials that the explosion and fragments thereof come in contact with.

Pyrotechnically Initiated Explosive (PIE) projectiles can be of small caliber (less than 20mm) or medium caliber (20mm-50mm). They contain a small amount of high explosive compound which is designed to rapidly enhance bullet expansion and cause fragmentation of other elements of the projectile. As its designation suggests, the compound used is of a type which can be initiated by heat. That heat is generated by the friction of impact with the target. The target must be fairly rigid in order to initiate the explosion. Contact with flesh usually will not suffice. However, contact with bone or body armor will. The high explosive is either ignited directly, or through an initiating explosive or incendiary mixture.

High Explosive Incendiary (HEI) is a type of PIE projectile that includes an explosive compound mixed with an agent that provides sustained burning, such as particles of zirconium, magnesium or aluminum. If enhanced armor penetration is required, a high-caliber HEI projectile can carry a sub-caliber armor piercing element (usually constructed of tungsten carbide) in order to allow a small caliber weapon to defeat vehicle-based armor. Common names for this type of ammunition are High Explosive Incendiary Armor Piercing (HEIAP), Armor Piercing Explosive Incendiary (APEI), or Soft Armor Piercing High Explosive Incendiary (SAPHEI).

Fused Explosive projectiles are usually of medium caliber (20mm-50mm). Most are also of the High Explosive Incendiary (HEI) type. They contain a relatively large amount of a highly stable explosive with an incendiary agent, along with a fuse system. Because the explosive is initiated by the fuse, the projectile can be set to explode under a wide variety of conditions (graze, proximity, self-destruct, higher sensitivity at extended range, etc...) and includes safety features such as arming delay. The fuse can be placed either ahead of (point-detonating) or behind (base-detonating) the explosive charge. The fuse can be set at manufacture or by the end user, depending on its sophistication.

Some fused explosive projectiles are designed to penetrate armor by using the heat and pressure of the explosion in conjuntion with a shaped charge liner; essentially a small High Explosive Anti Tank (HEAT) warhead. Being of medium caliber, these are usually called High Explosive Dual Purpose (HEDP) due to the fact that while penetration is limited against vehicle-based armor, sensitive fusing and the fragmentation effects can make the round useful for anti-personnel purposes.

Type	Game Effect	Availability
PIE (Medium Pistol, Heavy Pistol)	+1 Power	4/48 hrs
PIE (Submachine Gun, Light Carbine)	+1 Power	4/48 hrs
PIE (Carbine, Assault Rifle, LMG)	+1 Power	4/48 hrs
PIE (Sport Rifle, MMG)	+1 Power	4/48 hrs
PIE (Sniper Rifle)	+1 Power	6/48 hrs
HEI (Sniper Rifle)	+2 Power, Incendiary	6/48 hrs
HEI (Heavy Sniper Rifle, HMG)	+3 Power, Incendiary, x0.5 Armor Rating, AV	6/72 hrs
HEIAP (Heavy Sniper Rifle, HMG)	+3 Power, Incendiary, x0.25 Armor Rating, AV	6/6 days
HEI Fused (AMR, Assault Cannon)	+4 Power, Incendiary, Ignores Body Armor, AV	6/10 days
HEDP (AMR, Assault Cannon)	+4 Power, Incendiary, Ignores Body Armor, AV	6/10 days
PIE (Shotgun Slug)	+2 Power	4/48 hrs
HEI (Shotgun Slug)	+2 Power, Incendiary, AV	6/48 hrs
HEIAP (Shotgun Slug)	+2 Power, Incendiary, x0.5 Armor Rating, AV	6/6 days

Type	Count	Conceal	Weight	Cost
PIE (Medium Pistol, Heavy Pistol)	50	6	1	250 ¥
PIE (Submachine Gun, Light Carbine)	50	6	1	250 ¥
PIE (Carbine, Assault Rifle, LMG)	20	8	1	100 ¥
PIE (Sport Rifle, MMG)	20	8	1.5	140 ¥
PIE (Sniper Rifle)	20	8	1.5	160 ¥
HEI (Sniper Rifle)	20	8	1.5	180 ¥
HEI (Heavy Sniper Rifle, HMG)	20	4	2	250 ¥
HEIAP (Heavy Sniper Rifle, HMG)	20	4	2	500 ¥
HEI Fused (AMR, Assault Cannon)	100	4	40	4,500 ¥
HEDP (AMR, Assault Cannon)	100	4	40	5,200 ¥
PIE (Shotgun Slug)	20	4	3	140 ¥
HEI (Shotgun Slug)	20	4	3	160 ¥
HEIAP (Shotgun Slug)	20	4	3	200 ¥

Frangible Ammunition

Frangible ammunition is designed to fragment rapidly on contact with a specific target medium.

When fired into a rigid medium such as a thick wall, a door, and glass among other things, the bullet fragments, dissipating energy quickly and lessening the odds of overpenetration of the material it was fired into. However, when fired into a semi-liquid medium, the shot is ejected from the jacket on impact. Being a sphere and having the most surface area of any shape of any given size, the shot gives up its energy much faster than an intact bullet would, causing a massive permanent wound cavity.

Probably the most well-known brand of frangible ammunition is the Glaser Safety Slug. It consists of a hollow copper jacket filled with varying numbers and sizes of shot, per the size of the bullet itself. The shot is held in by a thin, colored plastic layer at the tip to identify the type of shot loaded. (Blue, 90-100 #12 shot. Silver, 80-100 #6 shot. Red, 60-90 #4 shot.)

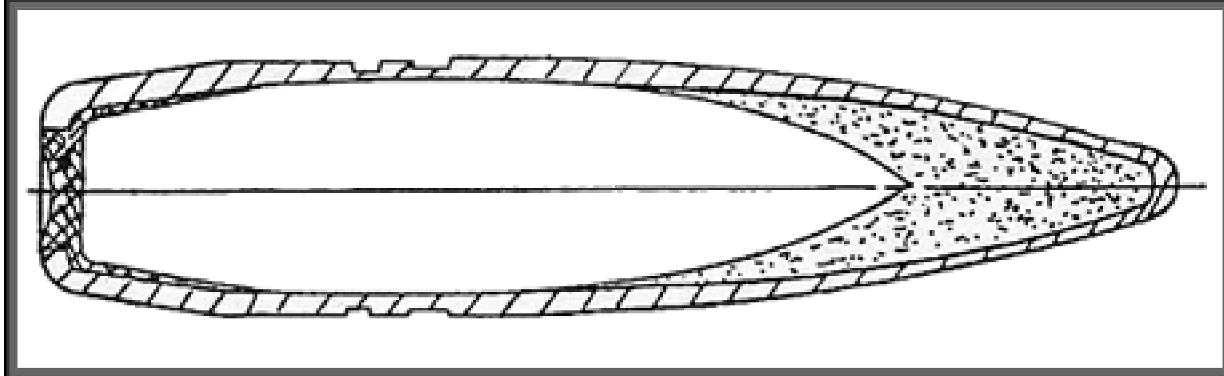
Other types of frangible munitions exist, using different principles to achieve a similar effect.

Frangible bullets are not armor piercing munitions. In fact, they are the exact opposite. They have a very low tendency for ricochet and overpenetration, which makes them ideal for home defense. Unfortunately, this type of ammunition is very expensive to manufacture.

Type	Game Effect	Availability
Frangible	Against unarmored targets, frangible rounds increase the power of the weapon by 2. (9M becomes 11M.) Against armored targets, frangible rounds fare less well. For the target's Armor Rating, use either double its Impact Armor Rating or its normal Ballistic Armor Rating, whichever is higher. Double the Barrier Rating of any barriers fired at or through (see Barriers, p.124, SR3). Also double the value of any barriers of any vehicle armor (p.132, SR3).	5/36 hrs

Type	Count	Conceal	Weight	Cost
Light/Medium Pistol	50	8	2	150 ¥
Heavy Pistol	50	8	2	150 ¥
Submachine Gun	50	8	2	150 ¥
Sport Rifle	20	6	1.5	100 ¥
Sniper Rifle	20	6	1.5	120 ¥

Incendiary Ammunition



Armor Piercing Incendiary ammunition usually consists of a bullet with a hollow point filled with a magnesium or zirconium compound, followed by an armor-piercing core. As the bullet strikes a relatively hard target medium, the jacket crumples and the intense heat generated by the impact ignites the incendiary mixture while the core continues its path through the target, sucking the burning incendiary mixture behind it. Incendiary rounds can be loaded every third round in a magazine in the same manner as tracer rounds, or they can be used to fill an entire magazine.

Modern incendiary ammunition is not as unstable as Cannon Companion would like you to believe. However, impact with a soft target (i.e., metahuman) will not usually generate enough heat to ignite the incendiary mixture. API ammunition is designed for anti-vehicle/materiel use.

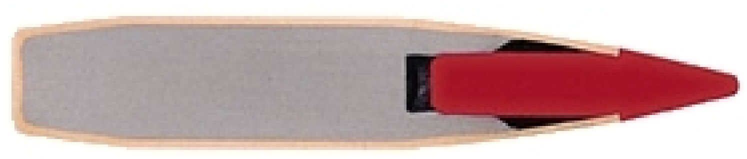
The incendiary effect can be added to most other types of rifle projectiles, in a manner similar to tracers.

Type	Game Effect	Availability
API	See table below for AP effects per weapon class.	4/48 hrs
Incendiary	Effect Only (added to another type of projectile) Incendiary rounds will continue to burn a target after impact. At the end of each Combat Turn, a target that has been struck by incendiary rounds must make a Body Resistance Test against a Power equal to twice the number of incendiary rounds it was shot with and a Damage Level of L. The Power of this burning damage is reduced by 2 per Combat Turn; each additional incendiary round that strikes adds 2 to the Power. Armor does not reduce this effect, nor can Combat Pool be used. Incendiary rounds are designed to set flammable materials on fire, such as fuel or ammunition stores. Use the rules for Fire and Incendiaries, p. 98, Cannon Companion.	+2/12 hrs

Armor Piercing Incendiary	AP	Count	Conceal	Weight	Cost/Box
Assault Rifle, Carbine, LMG	-55%/-20%	Per 20	8	1	30 ¥
Sport Rifle, MMG	-55%/-20%	Per 20	8	1.5	40 ¥
Sniper Rifle	-60%/-30%	Per 20	8	1.5	50 ¥
Heavy Sniper Rifle, HMG (AV)	-100%/-40%	Per 20	5	3	120 ¥
Assault Cannon, AMR (AV)	-100%/-50%	Per 100	NA	10	1,200 ¥
Shotgun (AV Slug)	-60%/-30%	Per 20	5	2	120 ¥

Incendiary (Effect Only)	Count	Conceal	Weight	Cost/Box
Assault Rifle, Carbine, LMG	Per 20	8	nil	+10 ¥
Sport Rifle, MMG	Per 20	8	nil	+10 ¥
Sniper Rifle	Per 20	8	nil	+10 ¥
Heavy Sniper Rifle, HMG	Per 20	5	nil	+10 ¥
Assault Cannon, AMR	Per 100	NA	nil	+50 ¥
Shotgun (Slug)	Per 20	5	nil	+10 ¥

Match Ammunition



Hornady Advanced Match Accuracy (AMAX)

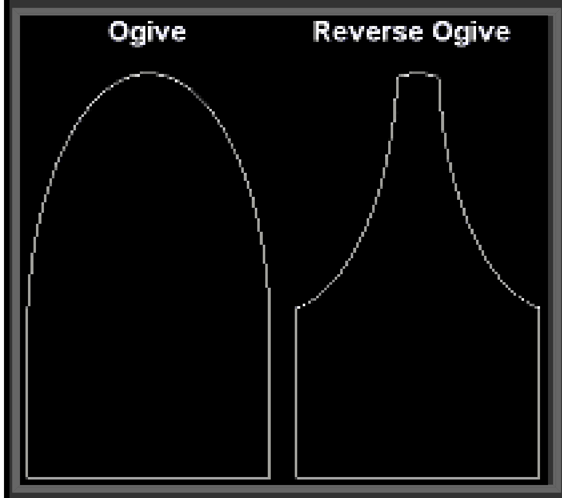
Commercial match ammunition is constructed of premium materials (nickel-plated brass cases, premium powders, primers and bullets) under tight tolerances and stringent quality control in order to produce a cartridge that is capable of exteme consistency and accuracy. Match ammunition is designed for use in match-grade weapons, usually for long-range rifle competition and sniping. Match munitions for handguns also exist.

The most important component of match ammunition is the bullet itself, which most match shooters tend to purchase separately and handload individually. Match bullets are designed to keep drag caused by friction with air to a minimum. Hence, these bullets have a smooth, streamlined outer surface, almost always including a boat tail. This effectively increases the range and accuracy of the bullet.

Type	Game Effect	Availability
Match	Increase weapon range by 35%.	3/36 hrs
HPBT Match	+1 Power against unarmored targets only. Increase weapon range by 30%.	3/36 hrs
Polymer Tip Match	+1 Power against unarmored targets only. Increase weapon range by 30%.	3/36 hrs

Type	Count	Conceal	Weight	Cost
Pistol	20	8	1	20 ¥
Sport Rifle	20	6	1.2	30 ¥
Sniper Rifle	20	6	1.4	40 ¥

Reverse Ogive



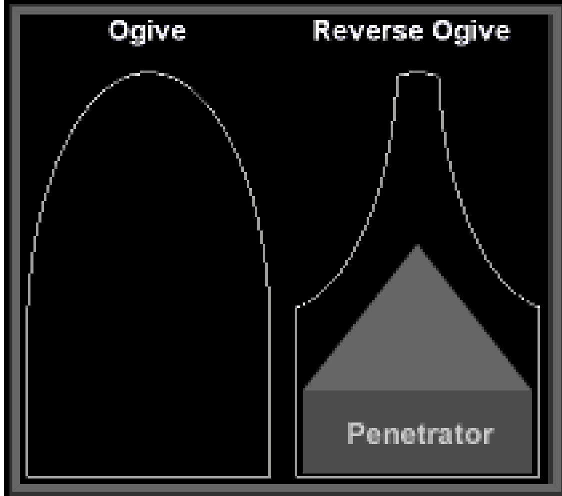
The reverse ogive bullet, also known as "Tres Haute Vitesse" (THV - *very high speed*) is an Accelerated Energy Transfer (AET) bullet design. Consisting of a hollow, lightweight brass or bronze shape and fired at supersonic velocity, the unique concave (reverse) ogive of the THV bullet cleaves soft tissue as it penetrates, and as these tissues flow across the ogive they accelerate laterally and are energetically propelled radially outward off the bullet's shoulder. This action produces a large diameter temporary cavity.

Because of the bullet's rather awkward shape, reverse ogive rounds have been known to cause loading malfunctions in automatic weapons not specificially designed or modified to use them.

Type	Game Effect	Availability
Reverse Ogive	The shape of this bullet gives a +1 Power rating. The reverse ogive bonus only applies to supersonic ammunition. Due to the reversed air pressure wave the bullet creates, range is somewhat limited with Reverse Ogive ammunition. Reduce all Medium Ranges x0.75, Long Ranges x0.5, and Extreme Ranges x0.25.	4/48 hrs

Type	Count	Conceal	Weight	Cost
Pistol/SMG	50	8	1	20 ¥
12 Gauge Slug	20	5	4	35 ¥

Armor Piercing Reverse Ogive (APRO)



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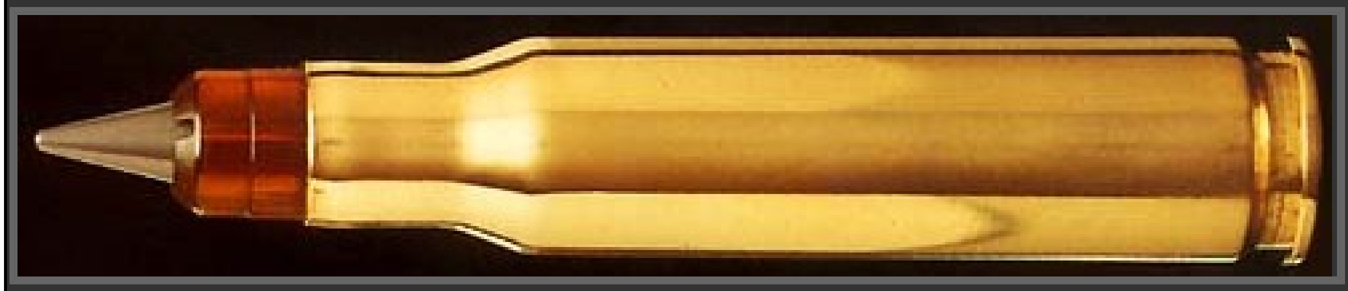
The APRO round uses the same general "reverse ogive" principle as the standard reverse ogive, but a hardened steel core is electro-chemically bonded the normally hollow outer shape of the brass bullet to in order to facilitate soft armor penetration.

Because of the bullet's rather awkward shape, reverse ogive rounds have been known to cause loading malfunctions in automatic weapons not specificially designed or modified to use them.

Type	Game Effect	Availability
Reverse Ogive	The shape of this bullet gives a +1 Power Rating. The hardened core offers a x0.75 armor rating. The reverse ogive bonus only applies to supersonic ammunition. Due to the reversed air pressure wave the bullet creates, range is somewhat limited with Reverse Ogive ammunition. Reduce all Medium Ranges x0.75, Long Ranges x0.5, and Extreme Ranges x0.25.	8/72 hrs.

Type	Count	Conceal	Weight	Cost
Pistol/SMG	50	8	1	25 ¥
12 Gauge Slug	20	5	3.5	40 ¥

SLAP / APDS



Essentially, SLAP (Saboted Light Armor Penetrator) and APDS (Armor Piercing Discarding Sabot) are two names for the same type of ammunition. However, the "SLAP" acronym is usually reserved for small caliber ammunition (less than 20mm), while "APDS" is more common for medium or large caliber ammunition.

There are two parts in a SLAP/APDS payload. The first part is the armor-piercing (**AP**) bullet itself. This consists of a sub-caliber bullet (sometimes called a flechette, dart, or penetrator) usually made out of a particularly hard and dense metal or metal alloy, such as tungsten carbide.

The second part of a SLAP/APDS payload is a discarding sabot (**DS**). This is a plastic collar that fits between the sub-caliber penetrator and the rifle's bore, transferring spin from the rifling to the sub-caliber pentrator. The sabot lightens the load that the propellant charge must push from the barrel, increasing the bullet's velocity substantially. This higher velocity facilitates greater penetration.

Shortly after exiting the muzzle, the sabot is stripped from the bullet by centrifugal force and wind resistance, leaving the bullet free to move down range independently from the sabot.

Unfortunately, the properties that make SLAP/APDS extremely good armor pentrating munitions (very hard bullet, high velocity) tend to compromise its ability to maximize wounding effects to tissue, especially when no form of armor is present. Typically, velocity is so high and the projectile so hard that unless vital organs or nervous tissue are affected, the wound is relatively easy to repair. For the vast majority of anti-personnel applications, any effect the high-velocity tungsten carbide projectile would have could be accomplished by a much more cost-effective solution, such as conventional steel-cored AP projectiles. At the small arms scale, SLAP/APDS will not penetrate much better than a standard, steel cored armor piercing round.

Last but not least, most firearms are designed to fire a bullet of a particular mass and length, gyroscopically stabilizing that mass in flight through the use of barrel rifling. The penetrator of any APDS projectile is sub-caliber, meaning that it is much smaller and lighter than the type of bullet a given firearm was designed to fire. Generally speaking, APDS loads are considered inaccurate at longer ranges because the rifling twist rate is usually not fast enough to properly stabilize the smaller bullet in flight.

Game Masters should keep these negative side effects in mind during game play and apply additional house rules to represent these side effects at their discretion.

Type	Game Effect	Comments
SLAP/APDS	Armor reduction is listed below as soft armor/hardened (military/vehicular) armor. Treat as anti-vehicular (SR3.149). As always, round down. Apply a +1 Target Number modifier at Long range, and a +2 Target Number modifier at Extreme range.	Availability and Street Index are at GM Discretion

SLAP	Armor Reduction	Count	Conceal	Weight	Cost
Sport Rifle/Sniper Rifle	-85%/-30%	50	8	1.3	150 ¥
MMG/Battle Rifle	-85%/-30%	100	4	2.6	300 ¥
HMG/Heavy Sniper Rifle	-100%/-45%	100	NA	11.5	750 ¥

APDS	Armor Reduction	Count	Conceal	Weight	Cost
AMR/Assault Cannon	-100%/-55%	100	NA	21	3,000 ¥

Subsonic Ammunition

Subsonic ammunition is limited to velocities below the speed of sound (about 1120 feet/second, 341 meters/second). Bullets that move through the transonic range to go supersonic (exceeding the speed of sound) create much more noise in flight due to a shock wave created by supersonic flight through air. Even with the muzzle blast contained, the sound of a bullet alone in transonic/supersonic flight can sound very similar to a gunshot at close range. As such, silencers and suppressors are much more effective when used with subsonic ammunition. **Silencers and suppressors used *without* subsonic ammunition receive only a +2 Perception Test modifier.**

Because most firearms, especially rifles, regularly use supersonic ammunition, their Damage Code is affected when velocity cannot exceed subsonic speeds. In other words, because velocity is limited, energy is lost. A heavier bullet is usually used to help keep energy as high as possible.

Barring any frangible, flechette, reverse ogive, and APDS munitions, any type of special ammunition may be loaded to subsonic velocities. Their effects are applied normally. Armor piercing subsonic ammunition (AP as opposed to APDS) receives a x0.75 Armor Rating modifier.

The table below lists altered Damage Codes for certain weapon classes when using subsonic ammunition. Damage Codes reflect the use of the heaviest bullet feasible for each weapon class. **Ranges for affected weapon classes should be reduced by half.** Weapon classes not listed cannot use subsonic ammunition.

Type	Subsonic Damage Code	Effect	Availability
Subsonic (Light/Medium Pistol)	No Loss	+4 to Perception Tests while using any silencer/ suppressor	Per Regular
Subsonic (Heavy Pistol)	-2 Power		Per Regular
Subsonic (SMG, Light Carbine)	-1 Power		Per Regular
Subsonic (Carbine, Assault Rifle)	-1 Damage Level	+4 to Perception Tests while using any silencer/ suppressor	4/48 hrs
Subsonic (Sport Rifle)	-2 Power, -1 Damage Level		4/48 hrs
Subsonic (Sniper Rifle)	-4 Power, -1 Damage Level		4/48 hrs

Type	Count	Conceal	Weight	Cost
Subsonic (Heavy Pistol)	20	8	1.5	+10 ¥
Subsonic (SMG, Light Carbine)	50	8	2	Per Regular
Subsonic (Carbine, Assault Rifle)	20	8	1	+10 ¥
Subsonic (Sport/Sniper Rifle)	20	6	1.5	+10 ¥

These are basic rules for subsonic ammunition. Advanced rules for suppression and the use of subsonic ammunition can be found in the Rules section, under Suppression. Also, rules for subsonic ammunition for individual cartridges can be found in the Ammunition by Caliber section.

Dragon's Breath

These loads consist of packets of magnesium and phosphorous, elements which burn very energetically at high temperatures. When a Dragon's Breath shell goes off, it spits out a tongue of flame to a range of approximately 15 meters (50 feet). This flame lasts for approximately three seconds.

Dragon's Breath rounds do inflict a certain amount of damage to the barrel of any weapon which fires them. It is also not recomended for use with semi-automatic shotguns for the obvious reason that the shell could be ejected after initial ignition, leaving it free to spin at the firer's feet, possibly injuring the firer or other non-combatants. This could also damage the gas system used to cycle ammunition in most semi-automatic shotguns.

Type	Game Effect	Availability
Dragon's Breath	14M/10L, Use White Phosphorus rules, p.86, Fields Of Fire.	6/5 days

Type	Count	Conceal	Weight	Cost
Shotgun	20	8	1.5	150 ¥

Ranges	Short (4)	Medium (5)	Long (6)	Extreme (9)
Shotgun (only)	0-2	3-6	7-10	11-15

Flares

Essentially a small flare designed for fire from a standard size 12-gauge. The standard flare will travel approximately 600 feet into the air and burn with about 20,000 candela for 3 seconds. They are available in several different colors. They are not a parachute flares.

Type	Game Effect	Availability
Flare	Burns very brightly for one Combat Phase, reducing visability modifiers approprately.	3/36 hrs

Type	Count	Conceal	Weight	Cost
Shotgun	20	6	1.2	75 ¥

Flechette Ammunition

Literally translated, the word "flechette" means "little arrow" in French. As far as shotgun ammunition is concerned, a flechette load is designed to extend range and increase penetration characteristics when compared to conventional ball shot loads.

A flechette load consists of several small, nail-like projectiles, each pointed at one end and weighted on the other by fins swaged into the rear of the projectile. The flechettes are held together by a plastic sabot until the load exits the shotgun's muzzle. The heavier mass at the rear serves to right the projectiles point-forward in flight. Because of these aerodynamic properties, range is extended a good deal and the pattern is relatively dense at longer ranges.

Because flechettes are usually constructed of hard steel with a pointed tip, deformation is less likely to occur on contact with body armor. However, light flechettes (20 per standard shell) have very little individual mass, which compromises their penetration potential. Heavier individual flechettes (6 per magnum shell) don't suffer from the same shortcomings.

Spread rules (p.117, SR3) do apply to shotgun flechette loads.

Type	Game Effect	Availability
Light Flechette (2.75" loads)	Increase range 50%.	2/24 hrs
Heavy Flechette (3"+ loads only)	Increase range 50%, x0.75 Armor Rating.	2/24 hrs

Type	Count	Conceal	Weight	Cost
Light Flechette (12 gauge, 2.75", 3", 3.5")	25	6	1.2	75 ¥
Heavy Flechette (12 gauge, 3", 3.5")	25	6	1.2	80 ¥
Heavy Flechette (10 gauge, 3.5")	25	6	1.4	100 ¥

You should probably just throw the SR3 flechette rules right out the window if you're going to use these.

Lockbuster

This ammunition consists of compressed but not solidified lead or iron powder. When fired into a lock, hinge or other mechanical object from very close range, the filings tend to destroy the workings of the device. A typical deadbolt will be rendered open and inoperable by one, perhaps two of these shots, and a standard door hinge will not survive even one.

For best effect, the muzzle of the shotgun should be in contact with the object. However, dangerous pressure levels could build up within the barrel. For this purpose, devices known as Stand-Off Brakes can be attached to the shotgun's muzzle and placed in contact with the target, which allows pressure to rapidly bleed out.

Type	Game Effect	Availability
Lockbuster	+2 Power Rating (-3 per meter), +1 Damage Level (-1 per meter), Lockbuster ammunition has a maximum range of 4 meters. A Stand-Off Brake should be used for maximum effect.	4/48 hrs

Type	Count	Conceal	Weight	Cost
Shotgun	20	6	1.5	125 ¥

Accessory	Conceal	Weight	Availability	Cost
Stand-Off Brake	-1 (8)	1	4/48 hrs	45 ¥

Mini-Grenade (Shotgun)

Technically known as "agricultural bombs", these are small explosive charges designed to be lobbed at birds and pests around crop fields. They have no fragmentary ability without modification, and they have little to no incendiary effect. They do, however, produce a loud bang accompanied by a bright flash, and could conceivably be used as a stun munition in enclosed spaces.

Type	Game Effect	Availability
Mini-Grenade	10S Stun -3/meter (Treat as flash grenade). Use Grenade Launcher ranges. See grenade rules, p.118 SR3	4/48 hrs

Type	Count	Conceal	Weight	Cost
Shotgun	20	6	1.5	200 ¥

Air-Timed Grenades

Standard Air-Timed Grenades are capable of being fired and primed to detonate just above, beside, or beyond the target through use of a Rangefinder and a Ballistics Processing Computer (which is part of a smartgun link).

Directed Scatter Air-Timed (DSAT) Grenades incorporate a pop-out airfoil to adjust the grenade's rotation just before it explodes. This allows the grenade's shaped blast to be channeled in a particular direction, causing massive damage to a small area.

Adjustable-Trajectory Air-Timed (ATAT) Grenades contain a small amount of high-pressure propellant, 4 pop-out nozzles and 4 pop-out airfoils to alter the grenade's course in flight. The grenade can be programmed (Through use of any ADVAT.328-compliant Smartlink II system) to *turn corners* at up to 90 degrees, depending on its velocity. It can also be programmed to "skip" in mid-flight during a straight shot, effectively increasing its range.

A Rangefinder and Rangefinder ATG Link are required take advantage of either type of grenade.

20mm Air-Timed Grenades

Type	Conceal	Damage/Scatter	Weight	Availability	Cost
Offensive HE	10	10S (-1/meter)	0.25	5/4 days	100 ¥
Defensive HE	10	10S (-0.5/meter)	0.25	5/4 days	100 ¥
Concussion	10	12M Stun (-1/meter)	0.25	5/4 days	100 ¥
White Phosphorus	10	12M/8L (-1/meter)	0.25	6/5 days	440 ¥
Flash	10	see below	0.25	4/48 hrs	160 ¥
Flechette/Shot Anti-Personnel	10	10D (f) (-1/meter)	0.25	5/4 days	100 ¥
Directed Scatter (DSAT)	-	-1 Power (-5/meter)	+0.1	+2/1 days	150%
Adjustable Trajectory (ATAT)	-	-2 Power (see below)	+0.25	+6/15 days	300%

40mm Air-Timed Grenades

Type	Conceal	Damage/Scatter	Weight	Availability	Cost
IPE Offensive HE	8	15S (-1/meter)	0.75	5/4 days	120 ¥
IPE Defensive HE	8	15S (-0.5/meter)	0.75	5/4 days	120 ¥
IPE Concussion	8	16M Stun (-1/meter)	0.75	5/4 days	120 ¥
White Phosphorus	8	14M/10L (-1/meter)	0.75	6/5 days	480 ¥
Flash	8	see below	0.75	4/48 hrs	160 ¥
Flechette/Shot Anti-Personnel	8	15D (f) (-1/meter)	0.75	5/4 days	120 ¥
Light Anti-Armor DSAT	8	12D (-6/meter)	1	20/45 days	225 ¥
Directed Scatter (DSAT)	-	-1 Power (-5/meter)	+0.1	+2/1 days	150%
Adjustable Trajectory (ATAT)	-	-2 Power (see below)	+0.25	+6/15 days	300%

White Phosphorus: See the Fields Of Fire Sourcebook, p.86 for more information.

Flash: See the Street Samurai Catalog, p.44 for more information.

Directed Scatter: Requires use of a Rangefinder and the Rangefinder Grenade Link. If the attack is rolled successfully, assume that the grenade makes its rotation and scatters toward its intended target inflicting the full damage of the grenade.

Adjustable Trajectory: Requires use of the Rangefinder and Rangefinder ATG Link. The target will be the point at which the firer wishes the grenade to adjust its trajectory. Roll the appropriate Launched Weapons skill, applying a +4 modifier at Short Range, and a +2 at Medium Range. Resolve hitting the target normally. If this test succeeds, the grenade will adjust itself to move around an object as the firer has instructed. Once programmed, treat these grenades as if they have a Skill Rating of 4. From here, apply another Lauched Weapons Test, using the grenade's Skill Rating. Combat Pool dice may be added to this test. Resolve grenade scatter and blast effects normally, using the Grenade Rules on p.118, SR3.

Ranges for Second Attack Roll

Short (4)	Medium (5)	Long (6)	Extreme (9)
0-2	2-4	5-7	8-15

Grenade Launcher Adapters

Grenade launchers can be adapted to fire a wide range of munitions through the use of an adapter unit.

The **XM1822** is a solid steel 40mm adapter, CNC machined to load eighteen .22 cartridges (Short, Long, Long Rifle or High Velocity). The unit is the same size as a standard 40mm grenade, giving the .22 bullets about 2.5" of smoothbore barrel length before exiting the adapter. It is unscrewed at the base, where the cartridges are loaded individually, to the user's discretion. A small pistol primer is then loaded into the primer pocket of the unit. All .22 cartridges placed in the unit are fired at once. This makes for a very effective close range weapon.

The **12 Gauge Adapter** is also a solid steel 40mm adapter, CNC machined to load one 12 Gauge shell, up to 3.5" magnum length.

Type	Conceal	Damage	Weight	Availability	Cost
XM1822 Adapter	10	12D(f)	1	4/48 hrs	300 ¥
12 Gauge Adapter	10	per Shotgun load	0.75	4/48 hrs	80 ¥

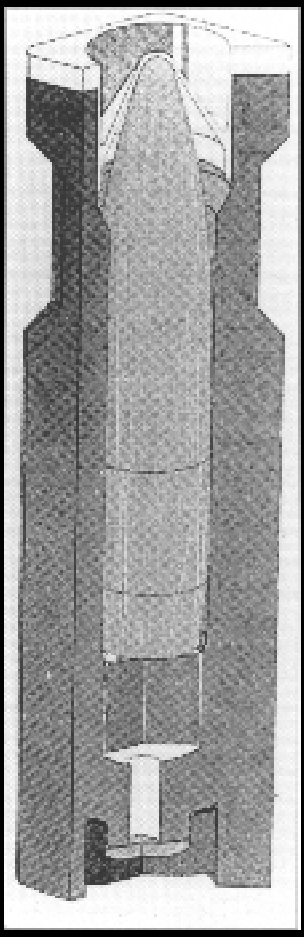
Both adapters use Shotgun ranges, with the choke permanently set at 3.

Reloading the XM1822 unit takes many Complex Actions. One Complex Action to unscrew the unit, another to screw it back together and another to load the primer. Characters may load a number of .22 cartridges equal to their Quickness Rating per Complex Action. It takes a Simple Action to load the unit into or unload it from the grenade launcher.

Caseless Ammunition

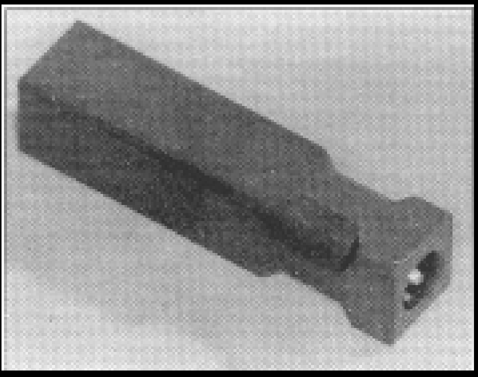
back

In the discussion of firearms, I have found that there is a distinct fascination with a technology known as caseless ammunition. The idea that caseless ammunition is at the pinnacle of small arms development is a seemingly widely-held belief. At a glance, caseless ammunition seems to be a concept that will cause a revolution in the design of small arms technology. However, that has not proven to be the case. An examination of why caseless cartridge technology for small arms was developed is necessary to understand why it has never caught on, despite having been thoroughly developed.



While artillery and other large gun platforms have been using munitions without cases for a very long period of time, few have actually combined all the elements necessary to create a self-contained caseless cartridge. In small arms, this is even rarer.

Probably the most widely-known firearm to use the caseless cartridge is the Hecker & Koch G11. The impetus behind the development of this rifle was a German Army requirement devised to increase the effectiveness of soldiers by increasing the probability of a hit on targets out to a distance of 100 meters. Development of the G11 began in 1969.



Especially noteworthy

Advantages of Caseless Ammunition

No cartridge case

- No ejection port
- No consumption of expensive metals
- No signature by ejected cases
- No impediment to the near-by shooter
- No need for policing spent cases

Low cartridge weight, small cartridge dimensions

- More ammunition portability by the shooter
- Greater ammunition capacity in the weapon
- Simplified logistics

Small caliber, high sectional density of the bullet result even at extreme ranges in:

- Flat trajectory
- High penetration power
- Good stability
- Minimum cross wind sensitivity

High ammunition dependability

- High mechanical strength of the cartridge
- Reloading directly from packing units
- Fully automated ammunition production
- Mechanical ignition

***RULE I:* ALL GUNS ARE ALWAYS LOADED**

***RULE II:* NEVER LET THE MUZZLE COVER ANYTHING YOU ARE NOT WILLING TO DESTROY**

***RULE III:* KEEP YOUR FINGER OFF THE TRIGGER UNTIL YOUR SIGHTS ARE ON THE TARGET**

***RULE IV:* BE SURE OF YOUR TARGET**

RULE I: ALL GUNS ARE ALWAYS LOADED

There are no exceptions. Do not pretend that this is true. Some people and organizations take this rule and weaken it;e.g. "Treat all guns as if they were loaded." Unfortunately, the "as if" compromises the directness of the statement by implying that they are unloaded, but we will treat them as though they are loaded. No good! Safety rules must be worded forcefully so that they are never treated lightly or reduced to partial compliance.

All guns are always loaded - period!

This must be your mind-set. If someone hands you a firearm and says, "Don't worry, it's not loaded," you do not dare believe him. You need not be impolite, but check it yourself. Remember, there are no accidents, only negligent acts. Check it. Do not let yourself fall prey to a situation where you might feel compelled to squeal, "I didn't know it was loaded!"

RULE II: NEVER LET THE MUZZLE COVER ANYTHING YOU ARE NOT WILLING TO DESTROY

Conspicuously and continuously violated, especially with pistols, Rule II applies whether you are involved in range practice, daily carry, or examination. If the weapon is assembled and in someone's hands, it is capable of being discharged. A firearm holstered properly, lying on a table, or placed in a scabbard is of no danger to anyone. Only when handled is there a need for concern. This rule applies to fighting as well as to daily handling. If you are not willing to take a human life, do not cover a person with the muzzle. This rule also applies to your own person. Do not allow the muzzle to cover your extremities, e.g. using both hands to reholster the pistol. This practice is unsound, both procedurally and tactically. You may need a free hand for something important. Proper holster design should provide for one-handed holstering, so avoid holsters which collapse after withdrawing the pistol. (Note: It is dangerous to push the muzzle against the inside edge of the holster nearest the body to "open" it since this results in your pointing the pistol at your midsection.) Dry-practice in the home is a worthwhile habit and it will result in more deeply programmed reflexes. Most of the reflexes involved in the Modern Technique do not require that a shot be fired. Particular procedures for dry-firing in the home will be covered later. Let it suffice for now that you do not dry-fire using a "target" that you wish not to see destroyed. (Recall RULE I as well.)

Rule III: KEEP YOUR FINGER OFF THE TRIGGER UNTIL YOUR SIGHTS ARE ON THE TARGET

Rule III is violated most anytime the uneducated person handles a firearm. Whether on TV, in the theaters, or at the range, people seem fascinated with having their finger on the trigger. Never stand or walk around with your finger on the trigger. It is unprofessional, dangerous, and, perhaps most damaging to the psyche, it is klutzy looking. Never fire a shot unless the sights are superimposed on the target and you have made a conscious decision to fire. Firing an unaligned pistol in a fight gains nothing. If you believe that the defensive pistol is only an intimidation tool - not something to be used - carry blanks, or better yet, reevaluate having one around. If you are going to launch a projectile, it had best be directed purposely. Danger abounds if you allow your finger to dawdle inside the trigger guard. As soon as the sights leave the target, the trigger-finger leaves the trigger and straightens alongside the frame. Since the hand normally prefers to work as a unit - as in grasping - separating the function of the trigger-finger from the rest of the hand takes effort. The five-finger grasp is a deeply programmed reflex. Under sufficient stress, and with the finger already placed on the trigger, an unexpected movement, misstep or surprise could result in a negligent discharge. Speed cannot be gained from such a premature placement of the trigger-finger. Bringing the sights to bear on the target, whether from the holster or the Guard Position, takes more time than that required for moving the trigger finger an inch or so to the trigger.

RULE IV: BE SURE OF YOUR TARGET

Know what it is, what is in line with it, and what is behind it. Never shoot at anything you have not positively identified. Be aware of your surroundings, whether on the range or in a fight. Do not assume anything. Know what you are doing.

SUMMARY:

Make these rules a part of your character. Never compromise them. Improper gunhandling results from ignorance and improper role modeling, such as handling your gun like your favorite actor does. Education can cure this. You can make a difference by following these gunhandling rules and insisting that those around you do the same. Set the example. Who knows what tragedies you, or someone you influence, may prevent?

Excerpted from: *The Modern Technique of the Pistol, by Greg Morrison, Gunsite Press, Paulden, Arizona, ISBN 0-9621342-3-6, Library of Congress Number 91-72644, $40*

the waves are neutralized completely and no sound occurs. For this reason, the suppressor is "tuned" in order to deal with specific properties of the muzzle blast in the most efficient manner. But because muzzle blast generates broadband noise rather than pure tones, complete neutralization of sound is not possible. However, in addition to phase cancellation, sound waves can be shifted into frequencies beyond those that can be perceived by the human ear (ultrasound, above 20 kHz) as they are repeatedly reflected between baffles while exiting the suppressor.

The **Wipe and Mesh** system is a relatively inexpensive method of suppressor design. "Wipes" are made from disks of a flexible material such as polyester, polyurethane or neoprene, with slits cut across the center. The bullet passes directly through these slits and the wipes work as baffles. Some designs include an expansion chamber filled with a coarse wire mesh (#3-4 steel wool), designed to disrupt the motion of gases. These elements degrade as the suppressor is used and need to be replaced after about 30-50 rounds to maintain maximum efficiency. Because the bullet comes in physical contact with the wipes, this type of suppressor cannot be used in conjunction with expanding bullets. Some suppressors using this system are actually disposable.

Wet Technology and **Artificial Environment** are terms used to describe a suppressor designed to function at maximum efficency with a replenishable heat-absorbing medium, such as water or grease. While these two terms are often used interchangeably, there are differences in how water and grease function and in how suppressors using the different coolant mediums must be maintained. Therefore, I often use the term Wet Technology to describe suppressors that use water as a coolant medium. I use the term Artificial Environment to describe suppressors that use grease as a coolant medium.

Artificial Environment suppressors include a chamber near the barrel's muzzle, usually filled with mesh and a light lubricating grease (NLGI Grade 1-2), though water can often be used instead. The grease absorbs heat energy, cooling and thus lowering the volume of propellant gases. Performance degrades slightly as the grease evaporates and becomes thicker. Lithium-based greases are preferred because of their relatively high drop point, which helps to keep the grease from smoking and draining from the suppressor. In order to add grease to the suppressor, it must first be detached. This should be done every 50-100 rounds. These types of suppressors are particularly easy to clean because the grease tends to mix with powder residue and coat the inside of the suppressor as shots are fired. Fouling can be wiped away easily. Expanding bullets should not be used in grease-pack suppressors.

A Wet Technology suppressor is usually very similar to a dry suppressor, the difference being that it is also designed to house a few CCs of water inside of an expansion chamber. Water absorbs heat energy, cooling and thus lowering the volume of propellant gases. This makes the suppressor quieter. However, a wet suppressor will cause a visual signature as water is vaporized and pushed from the muzzle. Performance degrades as water evaporates or is forced from the suppressor. Depending on the design, water may need to be added anywhere between 3 and 30 rounds. Water may be added on the fly through the suppressor's muzzle (with a hydration bladder, for instance), or by dunking the unit and shaking out the excess water. In some cases, even saliva can be used. Gas-operated firearms do not work well with wet suppressors as the water tends to mix with powder residue and clog the weapon's gas system, rendering the weapon a manual repeater. Obviously, it is not very practical for a fully automatic weapon to use this method. Expanding bullets *can* be used in wet suppressors.

Which cartridges can be suppressed?

The answer is *all of them*. But as you might have guessed by now, some cartridges can be suppressed much easier and/or to a greater degree than others. To be more precise, when suppressed, some cartridges will retain ballistics closer to their original design specifications. I'll use two common handgun cartridges at standard loadings as a quick example:

Cartridge Name	.45 ACP		9mm Parabellum	
Bullet Mass (grains/grams)	230	14.9	124	8.0
Muzzle Velocity (feet/meters per second)	855	261	1150	350
Muzzle Energy (foot pounds/joules)	373	506	364	493

Because the .45 ACP fires its bullet at subsonic velocities, there is no supersonic shock wave created during flight. Therefore, it is a relatively simple task to suppress the round when fired; only propellant gases need to be contained. Very little velocity and kinetic energy are lost in the process, if any. Range is also not effected substantially.

The 9mm Parabellum, however, needs to be slowed to subsonic velocities or else the "crack" of air pressure rapidly decompressing around the bullet will be audible. This can be accomplished in two ways:

> 1) The suppressor can be designed to bleed the excess propellant gases before the bullet reaches the muzzle of the weapon, in effect slowing the bullet to below supersonic speeds before it exits the muzzle. (See integral suppressors, above.)
>
> 2) The cartridge can be "cold-loaded", meaning less powder than normal is added in order to keep the bullet from being propelled to supersonic speeds. In this case, striking energy and range will be advesely affected. Alternately, a heavier than normal bullet can be utilized to help keep velocity low and striking energy high. (A muzzle suppressor used in conjunction with a subsonic load can be as effective as any suppressor.)
>
> In either case, trajectory and striking energy will be adversely affected.

Cartridge Name	9mm Parabellum		9mm Parabellum	
Bullet Mass (grains/grams)	124	8.0	147	9.5
Muzzle Velocity (feet/meters per second)	1000	304	975	297
Muzzle Energy (foot pounds/joules)	275	373	310	420

Rifles and Suppression

Some cartridges aren't designed to be suppressed. All conventional rifle cartridges fall into this category, as well as some of the more powerful handgun cartridges. But unlike handgun cartridges, rifle cartridges are designed to send a bullet very long distances. For example, according to the United States Marine Corps, the effective range of a 9mm Parabellum from an MP5 is 100 meters. The 5.56x45mm NATO cartridge fired from an M16A2 is designed to be point-target effective at 550 meters.

Rifle cartridges accomplish this by having a much higher powder weight to bullet weight ratio compared to handgun cartridges. A relatively large amount of powder is used in conjunction with a relatively light, aerodynamically efficient bullet. When it comes to suppressing a rifle cartridge, the problem is twofold:

> 1) Velocity. A rifle bullet is usually designed to exit the muzzle at a velocity of two to four times the speed of sound, depending on the cartridge. Obviously, this will create a ballistic crack which will be audible and so limits our ability to suppress the weapon.
>
> 2) Suppressor size. The relatively large amount of propellant powder being converted into gases requires an equally large suppressor to contain them in order to keep the muzzle blast from making much noise.

With these two factors in mind, you can see that it is largely an impractical endeavor to *fully* suppress a rifle cartridge.

But what about the "cold-loading" I was talking about earlier? Well, that is a possibility, but one that's not as easy to accomplish with a rifle cartridge as with a handgun cartridge.

Rifle cartridges like the 5.56x45mm NATO produce most of their ballistic performance through the use of a small, light bullet moving at almost three times the speed of sound. (Remember, $M/2*V^2=KE$.) Limiting the velocity at which the small, light bullet can travel would severely hamstring its ballistic performance, causing it to lose a very substantial amount of range and energy in the process.

Due to the larger powder capacity of their cases, rifle cartridges are particularly sensitive to the amount of powder used to propel the bullet downrange. Loading rifle ammunition to pressures far below design specifications will, in many cases, cause very inconsistent powder ignition, and consequently, inconsistent ballistics from shot to shot. Therefore, it is not a practice many are in the habit of. However, there are three ways to deal with this problem:

The first is to use what is called a *case filler*. This filler, usually consisting of a material such as Dacron or Pufflon, is placed in the case between bullet and the propellant powder. When the bullet is seated into the case, the filler is compressed against the powder charge and pushes it to the back of the case, allowing the primer spark to contact the majority of the powder quickly and evenly. This simple addition solves the shot-to-shot ballistic consistency issue quite well. The filler itself has no explosive properties of its own, yet it burns away completely when the shot is fired. Some types of filler even help lubricate the barrel on the way out.

With that problem solved, another rears its head. Bullets fired through most small arms are stabilized in flight by spin imparted to the bullet by the barrel's rifling. For the 5.56x45m NATO, a standard twist rate of 1 turn in 12 inches will sufficiently stabilize a 55-grain bullet leaving the barrel at 3250 feet per second. However, this rate will not sufficiently stabilize an 80-grain bullet leaving the muzzle at 1040 feet per second. Accuracy will suffer if this bullet is fired through the standard barrel. The twist rate must be much faster at 1 turn in 7 inches for the elongated 80-grain bullet to stabilize properly. It is generally better that a bullet be overstabilized than understabilized.

But even with both of those problems solved, you are still limited by what an 80-grain, .224" bullet moving at subsonic velocity can do. While range would probably be significant, this combination generates only 192 foot pounds of energy at the muzzle. That's about equivalent to the energy of .380 Auto from the muzzle of a Walther PPK. Not quite up to assault rifle standards.

The second option comes in when space is a consideration. When moving through close quarters, a large suppressor at the end of a rifle can limit the operator's ability to move efficiently. Also, the reverberation of loud sounds can cause pressure variations which can be disorienting, not to mention cause temporary or permanent hearing loss. Therefore, a small suppressor that reduces sound/flash signature as much as possible, but does not attempt to contain it wholly may be beneficial in these environments. Even a rather limited reduction in sound pressure can make a significant difference in the operator's performance.

These types of suppressors may limit the sound pressure level of a 5.56mm assault rifle to that of an unsuppressed .22 LR rifle. Still a significant amount of noise at the muzzle. However, at longer ranges, bullet flight noise is actually louder than the suppressed rifle's muzzle blast, so drawing attention away from the shooter's position and to the perceived source of the bullet flight noise. Therefore, it's beneficial to have this limited suppression available.

The third option - one that is becoming more and more popular due to the practicality of it - is to use a small, relatively low capacity case in conjuntion with a rifle bullet that is very heavy (hence long and more ballistically efficient) for its diameter. Called "Whisper" cartridges by their inventor, J.D. Jones, the heavy, efficient rifle bullets are fired at subsonic velocities from a case with a powder capacity comparable to that of some pistol cartridges. These features serve to keep energy high, drag low, and solves the rifle case "cold-loading" problem without the need for a filler. Also, barrels chambered for these cartridges are designed with fast rifling twists, in order to facilitate a high degree of accuracy with long bullets at low velocity.

Essentially, what happens is that the heavy bullet loses energy from wind resistance much slower than a smaller, lighter bullet would, attributing to better range and striking power, while ballistics are held to match grade accuracy and shot-to-shot consistency. Even with a bit more arc in the trajectory and flight time limbo, these cartridges do have the longest range and highest striking energy of any subsonic cartridge developed thusfar. What's more, they have the same case head dimensions and overall lengths as common military cartridges such as the 5.56x45mm NATO and 7.62x51mm NATO. This means that these cartridges can be chambered in those weapons with very little alteration.

For the sake of thoroughness and comparison, the .300 Whisper firing a 240-grain Sierra MatchKing HPBT at 1000 fps generates 533 foot pounds of energy at the muzzle. It will retain about 70% of that energy out to 400 meters. That's about 375 fpe, or more than most 9mm Para loads *at the muzzle* of a Beretta 92. Pretty impressive.

Side Effects of Suppression

1) Reduced recoil. Suppressors can be just as efficient as muzzle brakes in terms of recoil reduction. Because suppressors are designed to capture propellant gases and release them slowly into the atmosphere, the usual "punch" of high-velocity gases against the weapon's muzzle are reduced to what could be called a "push." Also, the sheer mass of the suppressor will help to reduce movement at the muzzle. Muzzle brakes, on the other hand, actually increase a shooter's exposure to harmful sound pressure levels by directing muzzle blast back toward the shooter.

2) Freebore boost. The phenomenon known as "freebore boost" occurs in particular suppressor designs and sometimes requires a particular loading of ammunition. It is caused by a primary expansion chamber ahead of the barrel's muzzle which acts as a barrel extension as a bullet passes through it. Propellant gases continue to expand inside the chamber and push the bullet through the baffle stack at a slightly increased velocity. The suppressor can actually increase bullet velocity up to about 40 feet per second (12.1 m/s) depending on the design.

3) Altered zero. Any weapon with a suppressor attached will have a substantially different zero (point of impact) from when the suppressor is not attached. This is due largely to the mass of the suppressor altering the harmonics present in a barrel when a shot is fired. Fortunately, the suppressed zero is usually repeatable. This cannot be avoided. Tandem aiming devices or a device which can calculate two points of impact will be necessary if the weapon is to be used both with and without the suppressor attached.

4) Higher cyclic rate. Any automatic weapon with a suppressor attached will have an increased rate of fire due to the fact that a suppressor is designed to contain propellant gases. This has the effect of increasing pressure within the weapon's operating system, so increasing ROF. Some types of operation (particularly blowback operations) are more sensitive to this effect than others.

5) Increased heat retention. Because a suppressor contains propellant gases, it also contains and absorbs heat. As a consequence, barrel heat dissipation happens at a slower rate. In conjunction with side effect #4, these effects translate to increased barrel wear.

6) Increased fouling. Suppressed weapons need to be cleaned more often due to the fact some of the propellant sediment is forced back into the weapon's action by the suppressor.

Suppressor Maintenance

After a certain amount of usage, all suppressors get fouled by propellant gas sediment. Most modern suppressors are easily maintained by a complete or partial submersion in hot, soapy water or a liquid solvent designed to break up fouling. This should be done after each use, though I have heard of at least one suppressor burning through literally thousands of rounds between cleanings without a substantial loss of efficacy.

Water is a byproduct of gunpowder combustion. Because a suppressor is designed to contain this combustion, water tends to accumulate inside the exapansion chamber of a suppressor. For this reason, most modern suppressors are coated inside and out with a corrosion-resistant finish. An effort should be made to remove all water from the suppressor unit after each use.

I've heard a few people talking about "blowing out" a suppressor. The term "blowing out" suggests one of two things:

> 1) The suppressor has failed to contain the pressure created by the expanding propellant gases inside of it and has literally exploded. While very unlikely, this could happen for a number of reasons, the most likely being some kind of obstruction in the bullet's path. The only way something like this could happen with a modern design is if the suppressor were seriously neglected or maliciously tampered with.
>
> 2) The suppressor has come loose from its mount and has lost concentricity with the barrel's bore. In this case, the bullet comes into physical contact with one or more of the suppressor's baffles and is deflected to a path divergent from the bore axis. If enough contact is made, the bullet could be deflected through the wall of the suppressor, destroying is completely, and possibly causing harm to the shooter. This is apparently a somewhat common occurrence in thread-mounted (screw-on) suppressors, which can be dismounted by the torquing action of the barrel when a bullet is guided through its rifling. The best way to avoid this happening is to make sure that the suppressor is mounted tightly at all times.

More Reading

There are a few sources of information that I recommend regarding suppressor technology, some of which are web-based and available to you right now. Links to suppressor manufacturers can be found on the links page of this site.

- The **BR Reflex Suppressors** site is an indispensable online resource regarding the design, testing and use of firearm sound suppressors. Gotta love those Finns. Lots of scientific data compiled by Dr. Rauno Pääkkönen, Ilkka Kyttälä and Juha Hartikka.
- **The Use of Sound Suppressors on High-Powered Rifles** is a lengthy and informative article written by Mark White of Sound Technology. It deals specifically with rifle suppression, but most of the information can be related to other forms of firearm suppression.
- **Silencer History and Performance, Volume One: Sporting and Tactical Silencers** by Alan C. Paulson (ISBN# 0-87364-909-5) is the first book of a three volume set to be released. When complete, these volumes will offer the most comprehensive look at suppression technology available. I highly recommend this book if you are interested in learning about firearm suppression.
- **Silencer History and Performance, Volume Two: CQB, Assault Rifle, and Sniper Technology** by Alan C. Paulson, N. R. Parker and Peter G. Kokalis (ISBN# 1-58160-323-1) is the second book of the three volume set. Again, highly recommended.
- And of course, there's the **US Patent Office** website (one of my personal favorites). Relevant patent numbers are: 880386, 916885, 944646, 1482805, 2008964, 3500955, 4384507, 4512236, 4576083, 4588043, 4907488, 4928573, 4974489, 5164535, 6308609, 6374718, 6575074.

References

[1] http://www.gem-tech.com/general.html

Types of Small Arm Operation, Automatic

Blowback

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The method of operation in which the breech is kept closed by the inertia of the breech-block and pressure of the recoil spring so that, on firing, the chamber pressure 'blows the bolt back' once it overcomes this inertia. Hence, such a breech is not positively locked.

Types of weapons that use Blowback Operation usually fire low-powered, low pressure cartridges such as the .22 Long Rifle, .32 Auto, .380 Auto, etc... This is due to the fact that the cartridge case is usually in the act of being extracted from the chamber before pressure drops inside the bore. The cartridge case provides a breech seal, but the further it is extracted from the chamber, the less direct case support it has. Because of this, it is considered dangerous to fire high pressure cartridges in weapons using Blowback Operation. If the pressure inside the bore exceeds what the case can contain without support, a case rupture occurs. This is a Very Bad Thing™.

Some blowback-operated submachine guns have been known to fire higher pressure cartridges that have previously been considered to require a locked breech in order to avoid case bulging or rupturing. These include the 9mm Parabellum, .40 S&W and .45 ACP +P. In this case, opening of the bolt is somewhat delayed by a massive breech block.

Blowback Operation is the least expensive form of automatic operation to manufacture, as the mechanisms involved are very simple. The barrel is always in a fixed position.

Delayed Blowback

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A blowback weapon in which an additional restraint or brake is placed on the bolt or other breech closure so as to delay or slow down the opening, but without actually locking the breech.

The most popular form of Delayed Blowback Operation is probably Heckler & Koch's **Roller Locking Delayed Blowback** mechanism.

[The Roller Locking system] *consists of a pair of rollers located on either side of the bolt, with a reciprocating wedge designed to fit between the rollers. When the breech is closed, the wedge is moved forward to spread the rollers apart and into formed anchor channels on the inside of the action. After firing, the locked rollers prevent the breech from immediately opening. The impulse first forces the wedges rearward, allowing the spring-loaded rollers to return to a central position and clear the anchor channels. Once the rollers are clear, the bolt assembly is free to open the breech with a safe chamber pressure.*

The Roller Locking mechanism had its genesis during WWII in Mauser's StG45 sturmgewehr (assault rifle). Development continued after WWII, eventually culminating into the form of the Heckler & Koch G3 Battle Rifle. Several of Heckler & Koch's firearms have used this form of operation, including the famed MP5 submachine gun and P9S pistol.

Another method of Delayed Blowback Operation is known as a **Gas Delayed Blowback** mechanism. This method was devised by Steyr for their GB ("Gas Bremse" or "Gas Brake") pistol in the early 1970's. it was later modified by Heckler & Koch and is found in the P7 series pistols. The system devised by HK includes a piston attached to the muzzle end of the slide, which rides inside of a small tube underneath the barrel. As the pistol is fired, a port in the barrel just ahead of the chamber bleeds some of the propellant gas into the piston tube. As the slide recoils, the rearward motion of the piston is resisted by the gas pressure bled into the tube. After the bullet leaves the muzzle, pressure drops inside the barrel and piston tube, allowing the piston/slide to complete its recoil stroke.

Other methods include the Blish system found on pre-WWII Thompson submachine guns and the Kiraly system found on the French FAMAS rifle. Most Delayed Blowback-operated firearms depend on a mechanical mechanism rather than gas to delay the breech opening.

Most Delayed Blowback systems include a chamber with logitudal slots, or flutes, cut into it. This assists in case extration by equalizing pressure outside of the case and allowing some of the propellant gases to "float" the case from the chamber. A fluted chamber leaves a distinct set of burn marks on the exterior of the case.

Types of weapons that use Delayed Blowback Operation can fire at any pressure level. The barrel is always in a fixed position.

Recoil

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A term descriptive of automatic and self-loading weapons which depend upon the recoil of the weapon to actuate the automatic or self-loading mechanism. In general, the barrel is permitted to recoil so as to deliver impetus to the mechanism; the recoil may be long or short, the latter being more common. Familiar weapons using recoil operation are the various Browning machine guns and the Colt automatic pistol.

In this type of operation, the barrel actually moves inside the weapon in order to transmit force to the breech block, while keeping the breech locked until pressure inside the bore drops to a level safe enough for case extraction to begin.

Short Recoil Operation is the most common form of operation found in semi-automatic pistols. There are several specific methods of Short Recoil Operation. One of the most common methods found is the "tipping barrel" method of operation developed by John Moses Browning around the turn of the 20th century.

In the Model 1911 pistol, two lugs machined into the top of the barrel engage recesses machined into the inside of the slide. When a shot is fired, recoil momentum is transferred to the barrel and thus, the breech block. (In this type of automatic pistol, the slide functions as the breech block.) The slide and barrel recoil locked together for a short distance (hence, short recoil), long enough for the bullet to leave the barrel and pressure to drop to a safe level. A pinned link on the underside of the barrel then arcs the breech end of the barrel down, swinging the lugs out of engagement with the slide. The slide is then free to recoil independently, re-cocking the hammer while extracting and ejecting the spent cartridge case. A spring underneath the barrel is compressed as the slide moves rearward. When the rearward motion of the slide ceases, the spring pushes the slide forward again. Upon the return stroke, the slide pushes a fresh cartridge from the magazine and into the chamber. Continuing forward, the slide pushes the barrel into battery and the barrel's lugs again engage the recesses in the slide.

In later pistol designs, Browning incorporated a simple open cam machined into the underside of the barrel to replace the more complex two-part swinging link. This can be found on the GP-35 (Hi-Power) among others. A closed cam was developed around the same time by Charles Petter. The Browning-Petter cam can be found on the SIG P210 and the CZ75. Some years later, the Swiss firm of SIG developed a locking block around the barrel's chamber that engaged the entire ejection port of the slide. This remedied the somewhat more complex machining operations needed to create locking lugs on the barrel and recesses in the slide. These two features have since become the standard and can be found on a wide variety of pistols manufactured today including the Glock, Heckler & Koch USP, Kahr, SIG-Sauer P Series, Steyr M/S Series, etc... This method of operation is commonly called Modified Browning operation.

Another unique form of short recoil operation can be found in the Beretta Cougar series pistols and the Mauser M2 pistol. This is called Rotating Barrel Operation.

Breech block [slide] *and barrel are locked together by an interrupted lug system; they recoil together but a lug on the barrel is drawn through a helical groove on the gun's frame, so causing the barrel to rotate until the breech lugs are unlocked. The barrel then stops moving while the breech-block continues rearward to complete the cycle of operation. On closing the breech after re-loading, the forward movement rotates the barrel into the locked position.*

Long Recoil Operation is a very uncommon form of operation, found on very high-powered weapons such as Steyr's IWS 2000 anti-matériel rifle.

A system of operation of automatic weapons which relies upon the barrel and locked breech recoiling together for a distance at least as long as a complete unfired cartridge. At the end of this stroke the bolt is unlocked and held, while the barrel is allowed to run back to its forward position. During this movement the cartridge case is extracted and ejected and a fresh round placed in the feedway. The bolt is then released, runs forward to chamber a round, locks, and the weapon is ready to fire. Not common in any type of firearm, least of all in pistols, but several notable designs of the past have employed it.

The long recoil stroke works as a method of compensating for heavy recoil and is usually used in conjunction with some kind of hydraulic buffer system.

Gas

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Weapon in which the cycle of operation is performed by gas pressure. The gas is part of the propellant gas, tapped from the barrel through a port or regulator, and directed either against a piston or against the bolt or bolt carrier. The gas pressure causes the bolt to be unlocked and driven rearward to commence the cycle for the next shot.

Gas Operation was first developed by John M. Browning for his Auto 5 shotgun. There are two main types of gas operation. These are Gas Piston Operation and Direct Gas Operation.

Gas Piston Operation is the more common of the two methods and is found on a wide variety of firearms, from shotguns to assault rifles to machine guns. The method of operation found on the Kalashnikov AK-47 and variants is a method of Gas Piston Operation. Some types of Gas Piston Operation include a regulator that controls how much gas is allowed to enter the system. This is used when a rifle becomes excessively dirty or the rate of fire needs to be adjusted. More gas through the system gives a faster push to the piston, helping the bolt or bolt carrier overcome the friction of dirt and grit that has made its way into the action. This also increases the rate of fire.

Direct Gas Operation is found on the AR-10 and AR-15/M16 series rifles. As a shot is fired in this type of operation, gas is tapped through a hole in the barrel and passes through the base of the front sight. The gas then travels through a small tube along the top of the barrel and into a port in the front of the receiver. The gas then impinges directly against a part of the bolt carrier, pushing the entire carrier rearward. The bolt is rotated by a cam in the bolt carrier. This unlocks the bolt from the barrel extension and the cartridge case is then extracted and ejected. Upon the return stroke, a fresh round is collected and pushed into the chamber. The bolt again locks into the barrel extension and the process then repeats, if necessary.

Gatling

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When first deployed around 1865, Gatling's guns employed hand cranks to control cycling and firing. In most modern applications cycling energy comes from external electric or hydraulic motors. The significant task of accelerating massive ammunition feed belts is also usually delegated to motors. Note that some models do derive partial operating energy from ammunition gases. The continuous rotary motion of the barrels and smooth movement of other elements helps attain high cyclic rates. These motions resemble those found in high-speed manufacturing systems.

The modern Gatling gun is usually composed of 3 to 7 barrels in a circular array. In operation, the barrels and inner receiver rotate together. Independent bolts, one aligned and moving with each barrel, follow a helical cam track in the outer receiver. The cam track controls the feeding, locking, and extracting functions by moving each bolt fore and aft relative to its barrel. The timing of the system is fixed by the position of the bolt in track versus rotation. Each bolt typically contains its own striker or other firing device. (Cannon cartridges are usually electrically primed.)

Gatling Operation was patented by Dr. Richard J. Gatling, MD, in 1862. It can be called the first machine gun. The Gatling principle originally operated on a hand crank mechanism, cyclic rate dependent on the speed at which the crank was turned. Rate of fire was very slow by modern machine gun standards (around 250 rpm), but at the time it was the fastest system available.

Today, Gatling guns are usually controlled by an electric motor, which means that rate of fire depends only on how fast the motor turns the mechanism. Theoretically, a Gatling gun can fire at any rate, from as slow as is needed to as fast as is safe. Most motors have several pre-set rates of fire, which can be selected by the user.

Information in italics courtesy of RKBA.org

Chain

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The Chain Gun derives its name from the use of a conventional roller chain in an endless loop which drives the bolt. The chain is driven by an electric motor, and a shoe on the chain engages in the bolt, carries it forward to chamber a round, holds it closed, then retracts it to extract the spent case. Cams rotate the bolt head to lock into the barrel and also actuate the firing pin as the bolt locks. A dynamic brake on the motor ensures that when the trigger is released the bolt stops in the open position, so that there is no danger of cook-off. The belt feed is also driven by the motor, independently of the bolt mechanism, so that there is ample power to handle long belts, particularly in a vehicle bounding over rough country. The Chain Gun is particularly well suited to tank installation since case ejection is forward, under control, and the relatively long bolt closure dwell time reduces the amount of fumes released into the vehicle. The Hughes chain gun is one of the few new operating principles which have appeared in recent years.

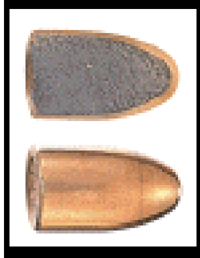
The Chain Gun system was developed by the Hughes Helicopter Company in the 1970's as an aircraft weapon in 25mm and 30mm caliber. It was later adapted to rifle calibers for use in armored vehicles.

Italicized text exerpted from the *Greenhill Military Small Arms Data Book* by Ian V. Hogg, unless otherwise noted.

Bullet Types

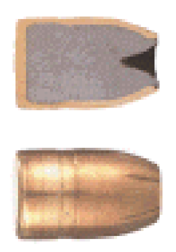
back

Handgun Bullets



FMJ (Full Metal Jacket)

Lead core is enclosed by a strong metal jacket on this non-expanding, deep-penetrating, general-purpose bullet. Provides smooth, reliable feeding in all types of semi-auto handguns.

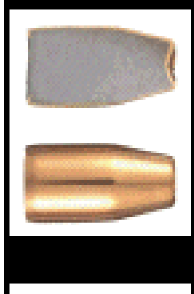


JHP (Jacketed Hollow Point)

The exposed lead at the tip of the jacketed hollow point rapidly initiates uniform, controlled expansion that progresses to the depth of the hollow point cavity. Penetration is also controlled for maximum energy transfer to the target, assuring its suitability as a hunting bullet. Excellent accuracy and bullet integrity.

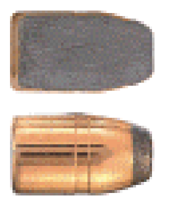
SJHP (Semi-Jacketed Hollow Point)

With more exposed lead at the tip, the SJHP expands a little more rapidly than a jacketed hollow point bullet. Penetration is also controlled for maximum energy transfer to the target, assuring its suitability as a hunting bullet. Excellent accuracy and bullet integrity.



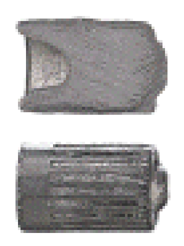
FMC (Full Metal Case, Truncated Cone)

The lead core of this bullet is enclosed in a light copper jacket, which has a cone shape and a flat or cupped point. The results is less expansion than a JHP bullet, more than an FMJ, and deeper penetration than an SP bullet. The shape of this bullet also has the effect of reducing ricochet and has shown increased reliability in penetrating auto glass compared to FMJ.



SP (Soft Point)

Exposed lead soft point initiates reliable expansion, provides deeper penetration than hollow point bullets. Precisely engineered copper jacket and swaged lead core provides the necessary concentricity and balance required for top-level accuracy.



LWC (Lead Wadcutter)

The full wadcutter profile of this solid lead bullet cuts clean signature in paper targets for precise scoring. Consistent accuracy results from formation by swaging process, which eliminates balance-destroying voids often found in cast bullets. Excellent choice for competitive shooters.

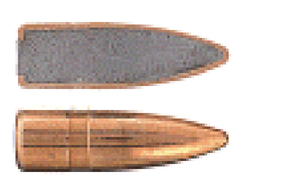
LSWC (Lead Semi-Wadcutter)

Solid lead bullet with semi-pointed nose. Formed by swaging process with sharp shoulder for clean hole punching in paper targets. Good choice for target or general purpose shooting.

RNL (Round Nosed Lead)

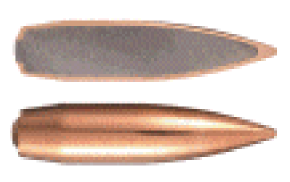
Solid lead bullet with rounded ogive for down-range accuracy. Hard-hitting, economical, general purpose bullet for all revolvers.

Rifle Bullets



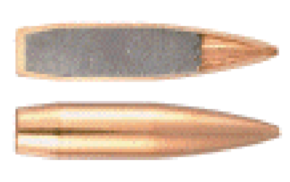
FMJ (Full Metal Jacket)

The lead core of this bullet is enclosed in a heavy copper jacket, which results in little or no expansion and deep penetration. Not recommended for hunting, the primary uses of the FMJ are military and target shooting.



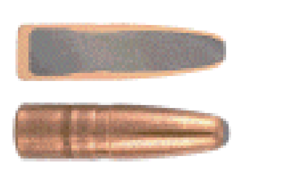
FMJBT (Full Metal Jacket Boat Tail)

The lead core of this bullet is enclosed in a heavy copper jacket, which results in little or no expansion and deep penetration. Boat tail heel further reduces drag to improve downrange velocity.



HPBT (Hollow Point Boat Tail)

Extremely accurate hollow point bullet with pointed, aerodynamic design. Boat tail heel further reduces drag to improve downrange velocity. Precision balance and exceptional concentricity greatly increase bullet stability to assure superb accuracy.



SP (Soft Point)

Exposed lead tip on this bullet and broader point diameter provides rapid, controlled expansion at somewhat lower velocities. Broad wound channel results from expansion up to 200% of original bullet diameter.

Shotgun

Regular Ammunition

Shot Sizes

	F	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9
Pellet Diameter															
Inches	.22	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08
Millimeters	5.59	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03

Buckshot Sizes

	No. 000	No. 00	No. 0	No. 1	No. 2	No. 3	No. 4
Pellet Diameter							
Inches	.36	.33	.32	.30	.27	.25	.24
Millimeters	9.14	8.38	8.13	7.62	6.86	6.35	6.10

Slugs

Sabot Slug	Rifled Slug (Foster)
	

Cased Ammunition Construction

Rim Types ^

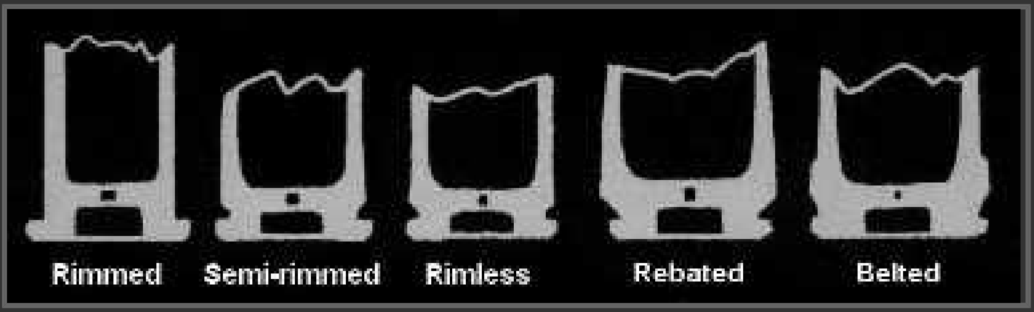
Rimmed cartridges have a rim or extractor flange of larger diameter than the base of the case, often with a groove or undercut area immediately ahead of the rim. (.30-30 Winchester)

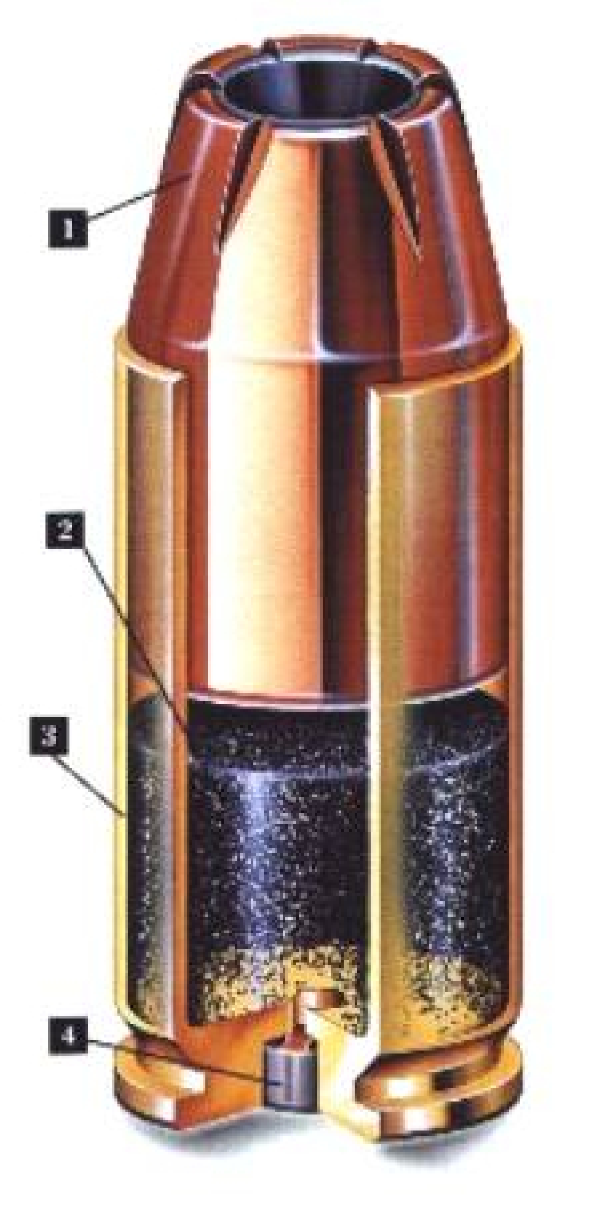
Semi-rimmed cartridges have a rim that is only slightly larger in diameter than the base of the case and usually also has a distinct undercut area between the rim and the base. (.32 ACP)

Rimless cartridges have a rim and base of the same diameter. They are the most common type of military cartridge. (.45 ACP)

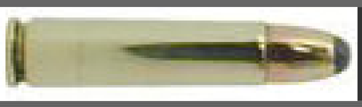
Rebated cartridges have a rim of smaller diameter than the base, plus a definite extractor groove between the rim and the base or belt. Uncommon. (.50 Action Express)

Belted cartridges have a distinct belt or flange at the base just forward of the rim, and an extractor groove between the rim and the belt. (.300 Winchester Magnum)





Straight-Walled or Bottlenecked? ^



.30 Carbine

Straight-walled cartridges have no shoulder or bottleneck, the base of the case having roughly the same diameter as the bullet. Though in actuality, most straight-walled cases have a slight taper with the base having a slightly larger diameter than the neck. Most handgun cartridges are straight-walled.

.308 Winchester

Bottlenecked (or simply "necked") cartridges have substantially larger body than the diameter of the bullet. This is done in order to increase the powder capacity behind a smaller bullet, increasing velocity dramatically. Most rifle cartridges are bottlenecked.

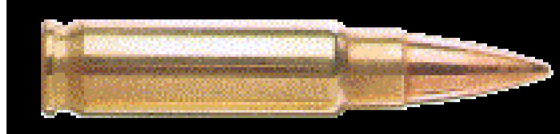
Primer Placement ^

Rimfire cartridges have the priming compound distributed around the rim of the case. These cases cannot be reloaded. Uncommon. (.22 Long Rifle)

Centerfire cartridges have the priming compound contained in a separate cup in the center of the case head. The diagram above shows all five rim types with centerfire cases. Almost all modern cased cartridges are centerfire.

Please see the **Cased Ammunition Data** page for more information about cased cartridges.

Cased Cartridge Data



5.7x28mm FN (SS190)

Below are tables listing some common cartridges. They show general cartridge dimensions and common ballistics for each cartridge. This is provided to give players a general idea of what niche certain cartridges fill, and can be used as a yardstick for creating their own cartridges.

Pistol and Submachine Gun	Case	Bullet Diameter (in.)	Case Length (in.)	Shoulder Diameter (in.)	Bullet Weight (grs.)	Muzzle Velocity (fps)	Muzzle Energy (fpe)
5.7x28mm FN	C	.224	1.13	.309	31	2340	377
.22 Long Rifle	B	.223	.595	-	38	1280	138
.25 Automatic	D	.251	.62	-	50	810	73
5.45x18mm Soviet	C	.210	.700	NA	40	1035	95
.32 Automatic	H	.308	.68	-	71	905	129
7.62x25mm Russian Tokarev	C	.307	.97	.370	87	1390	365
.380 Automatic (9mm Short)	D	.356	.68	-	90	1000	200
9mm Ultra	D	.355	.72	-	123	1070	350
9mm Parabellum (9mm Luger)	D	.355	.754	-	124	1150	364
.38 Special	B	.357	1.16	-	158	900	284
.38 Super	H	.358	.90	-	125	1150	367
.357 SIG	C	.357	.865	.424	125	1350	505
.357 Magnum	B	.357	1.29	-	125	1450	583
.40 S&W	D	.400	.850	-	155	1205	500
10mm Automatic	D	.400	.992	-	180	1150	528
.400 Corbon	C	.400	NA	NA	135	1450	600
.44 Magnum	B	.429	1.29	-	240	1350	971
.44 Auto Mag	D	.429	1.298	-	240	1400	1045
.440 Corbon Magnum	J	.440	NA	-	240	1800	1727
.45 ACP	D	.452	.898	-	230	855	373
.45 Colt	B	.454	1.29	-	185	1100	497
.45 Winchester Magnum	D	.451	1.198	-	230	1550	1227
.454 Casull	B	.452	1.39	-	300	1500	1500
.475 Linebaugh	B	.475	1.5	-	370	1495	1840
.500 Linebaugh	B	.510	1.405	-	500	1200	1599
.50 Action Express	J	.500	1.285	-	300	1579	1568

Rifle and Carbine	Case	Bullet Diameter (in.)	Case Length (in.)	Shoulder Diameter (in.)	Bullet Weight (grs.)	Muzzle Velocity (fps)	Muzzle Energy (fpe)
22 Long Rifle	B	.223	.595	-	38	1280	138
.22 Hornet	A	.223	1.40	.274	45	2690	723
5.45x39mm Soviet	C	.221	1.56	.387	54	2950	1045
.223 Remington (5.56 NATO)	C	.224	1.76	.349	55	3250	1290
5.7x28mm (SS190)	C	.224	1.13	.309	31	2340	377
.243 Winchester	C	.243	2.05	.454	100	2960	1945
.270 Weatherby Magnum	E	.277	2.55	.490	150	3245	3501
30-30 Winchester	A	.308	2.03	.402	150	2390	1902
7.62x39mm Soviet	C	.311	1.52	.344	122	2329	1470
.303 British	A	.311	2.21	.401	180	2460	2420
.308 Winchester (7.62 NATO)	C	.308	2.01	.454	150	2750	2520
.30-06 Springfield	C	.308	2.49	.441	172	2640	2660
7mm Remington Magnum	E	.284	2.50	.490	160	2950	3090
.300 Winchester Magnum	E	.308	2.60	.489	200	2825	3544
.338 Winchester Magnum	E	.338	2.49	.480	250	2660	3921
.338 Lapua Magnum	C	.338	2.72	.540	250	2950	4830
.340 Weatherby Magnum	E	.338	2.49	.495	250	2980	4931
.375 Holland & Holland	E	.375	2.85	.440	300	2530	4265
.416 Remington Magnum	E	.416	2.85	.487	350	2520	4935
.458 Winchester Magnum	F	.458	2.50	-	500	2040	4620
.50 Browning (BMG)	C	.510	3.90	.708	720	2810	12630
.585 Nyati	I	.585	2.79	.650	750	2235	8320
700 Nitro Express	B	.700	3.50	-	1000	2000	8900

Case Types:

[**A**] Rimmed, Bottlenecked	[**G**] Semi-rimmed, Bottlenecked
[**B**] Rimmed, Straight	[**H**] Semi-rimmed, Straight
[**C**] Rimless, Bottlenecked	[**I**] Rebated, Bottlenecked
[**D**] Rimless, Straight	[**J**] Rebated, Straight
[**E**] Belted, Bottlenecked	[**K**] Rebated belted, Bottlenecked
[**F**] Belted, Straight	[**L**] Rebated belted, Straight

The Real Story on "Cop Killer" Teflon-Coated Bullets

back

In 1966, the coroner of Lorain County, Ohio, Dr. Paul Kopsch, Sgt. Daniel Turcus, Jr., of the Lorain Police Dept.,. and Dr. Kopsch's special investigator, Donald Ward, decided that armor-piercing handgun cartridges could be sold to those police departments or officers that either lacked rifles or might be interested in testing special-purpose handgun ammunition. Major factories had produced such ammunition for the police for years, but interest was minimal, accounting for low sales and little attempt at improvement. Kopsch, Turcus and Ward easily succeeded in making a round that out-penetrated the tame old factory offerings.

Their original KTW bullet centered around a case-hardened steel core. Even at standard velocities, this core would obviously hold its shape and drill through automobiles, cinder blocks and other materials likely to defeat conventional police handgun loads. This was literally the core of the solution, but presented difficulties. The hard core would not take rifling and would ruin the bore. A gliding-metal jacket with full teflon coating took care of this. The round gave good penetration but poor accuracy at long range.

Then a ballistic engineer at the H.P. White Laboratories suggested that a new alloy called Kennertium W-10 be tried, instead of the steel then used, to add the ballistic stability needed for increased accuracy at long range. W-10 is a sintered tungsten alloy that is heavier than lead and harder than most steel alloys. The new material worked, but it was expensive. The expense didn't worry the developers much, since the specialty bullets would not be shot in quantity. In 1969, the prices for the 200-gr. W-10 cored, Teflon-coated .38 Spl. rounds were about six times those of conventional metal-pointed "armor-piercers" of standard make. Sales were low in volume, though relatively high in profit.

By the early 1970s, supply of Kennertium became erratic, and KTW reverted to much lighter steel and, later, brass cores, both of which reduced the maximum range to about a third of that of the former type. KTW made a plus of the reduced range by noting that long range was not necessary in this type of round and, in fact, would increase danger to bystanders in metropolitan areas. The high prices and low sales volume continued; so did the distinctive pea-green teflon coating which now formed the only protection for the bore.

The claim was made by the media that the teflon also lubricated the point of impact and increased penetration dramatically. That claim, in reference to soft body armor, was convincingly refuted by government test, with the Justice Dept. saying it "has little or no effect on the penetrating qualities of the projectile" and the Treasury Dept. labeling it as "little more than a cosmetic additive." But the fact that Teflon protects the bore from the ill effects of the hard bullet core is incontrovertible. By end of 1981, KTW was offering its products in most handgun calibers. Sales were still limited to police agencies or police officers ordering through federally licensed dealers, and were still limited in volume.

Then, in January 1982, a dramatic change occurred. KTW got national, prime-time television coverage in NBC's "Cop Killer Bullets." Law enforcement officials had pled with NBC to drop the sensational coverage of the virtually unknown bullets lest they come to the attention of criminals. NBC not only refused, but rebroadcast the show six months later. Then the print media joined in.

Of course, KTW's restricted sales policies forbade a rash of sales to criminals, but many police departments had to answer frantic questions from officers and the public concerning the implied threat. The departments didn't have data, and some set out to buy and test KTWs to see 'just what the threat was. Other small bullet makers saw the light and soon a number of KTW competitors appeared to share in police testing budgets. Hard cores were the rule, high velocities and pointed bullets were preferable, but Teflon was considered unnecessary.

Some anti-gun members of Congress saw the light too. Here was an opportunity to get all sorts of free personal publicity in all sorts of media. All they had to do was introduce a bill with a catchy title to outlaw the import, manufacture of sale of..of what? The title, having been stolen from NBC, was easy: "A bill to stop the proliferation of 'cop-killer' bullets." "Cop-Killer" was the most exciting label to come along since "Saturday Night Special" and just as vague. Its "definition" was simply:

Any bullet that when fired from a 5" barreled handgun is capable of penetrating the equivalent of 18 layers of Kevlar.

Technical experts of the FBI, BATF, Secret Service and police forensic labs throughout the country felt this definition to be impractical and unenforceable, but none of them could think of a good one.

A four-year campaign to outlaw so-called "armor-piercing" or "cop-killer" bullets began. During that time NRA-ILA successfully fought off several bills that would have had grave implications for American gun owners and dealers. August 1986 saw passage of H.R- 3121, which while symbolically offensive, greatly narrowed the definition of proscribed bullets (earlier bills threatened to outlaw up to 85% of big game ammunition), and contained no criminal penalties for dealer or private possession, transfer or use of such bullets. An exception was made for misuse in a violent federal crime.

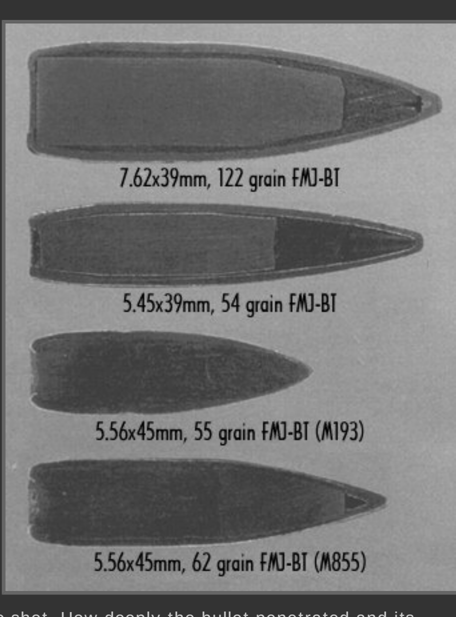
The law defined offending bullets as "a projectile or projectile core which may be used in a handgun" and constructed entirely (except for trace elements) of tungsten alloys, steel, iron, brass, bronze, beryllium copper or depleted uranium or a combination of those metals. Further, the Secretary of the Treasury may exempt a projectile covered in the "armor-piercing" definition, but may not expand the law to include projectiles not expressly included in the established definition. - W.F.P.

Reprinted from *The American Rifleman*, February 1989

Patterns of Military Rifle Bullets

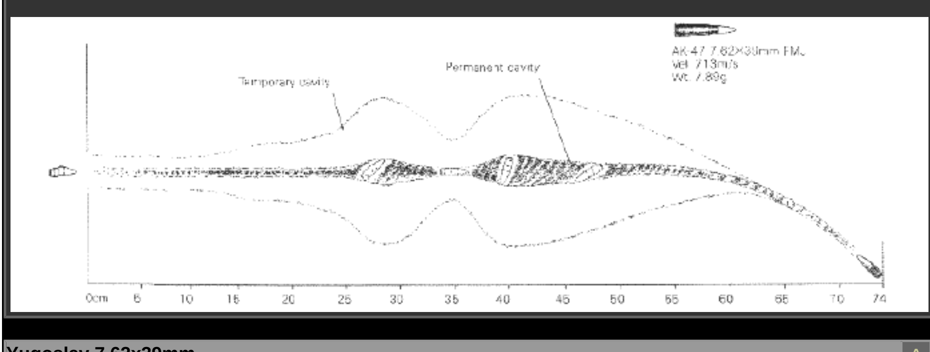
By Dr. Martin L. Fackler

Introduction



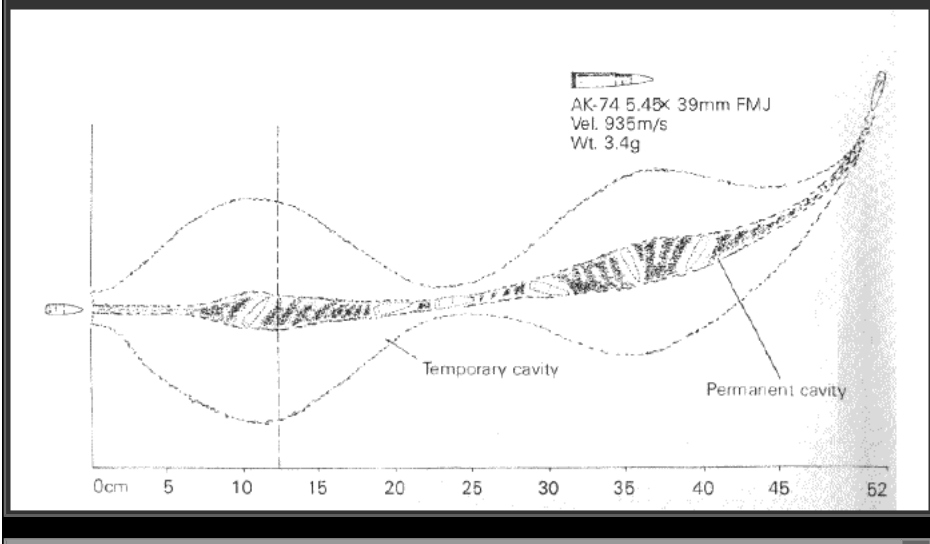
Current Rifle Bullets

Soviet 7.62x39mm

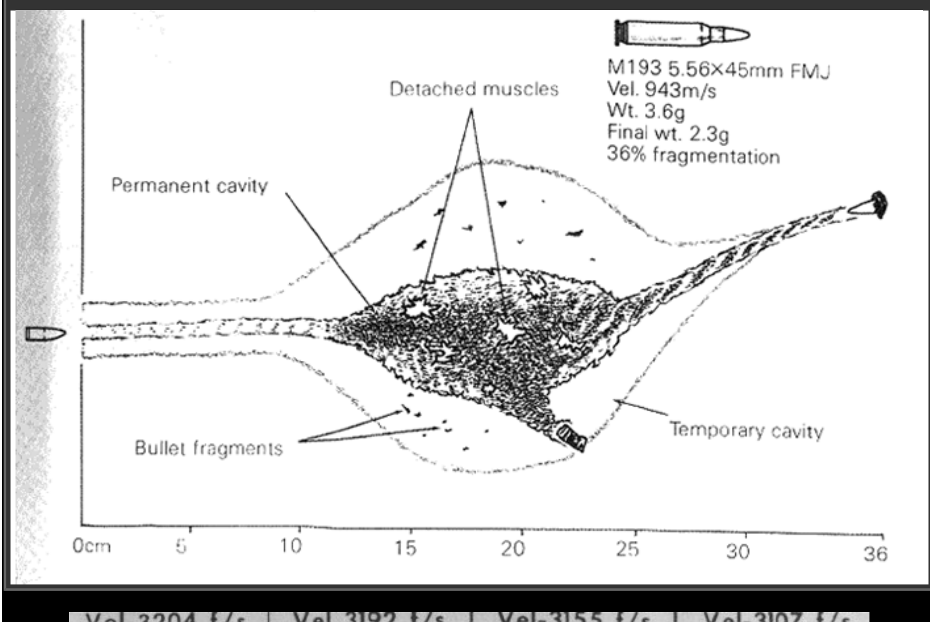


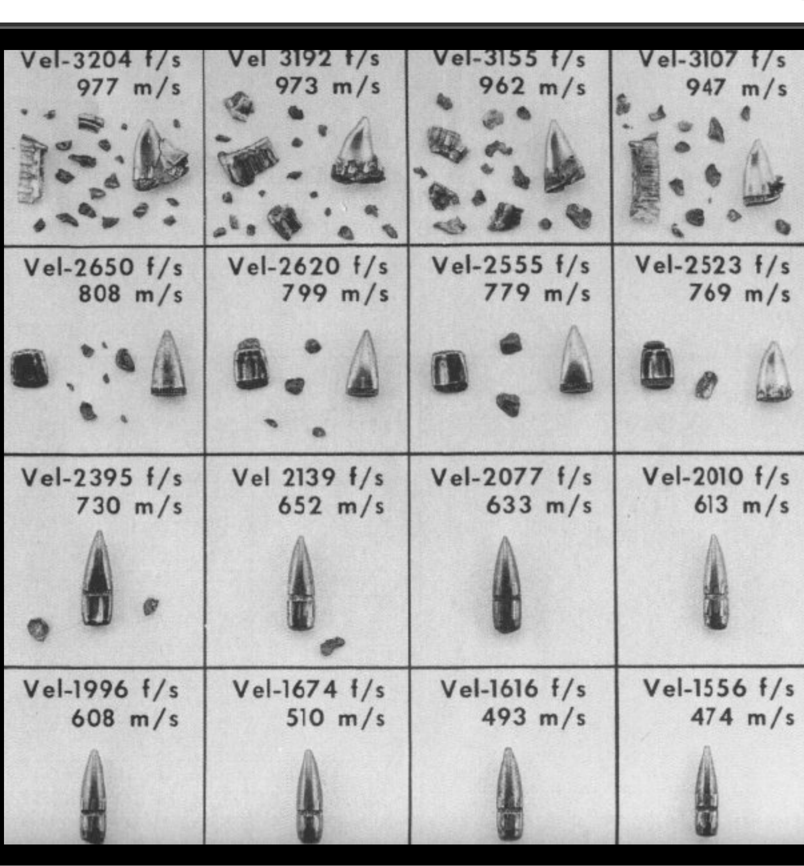
Yugoslav 7.62x39mm

Soviet 5.45x39mm



US M193 5.56x45mm



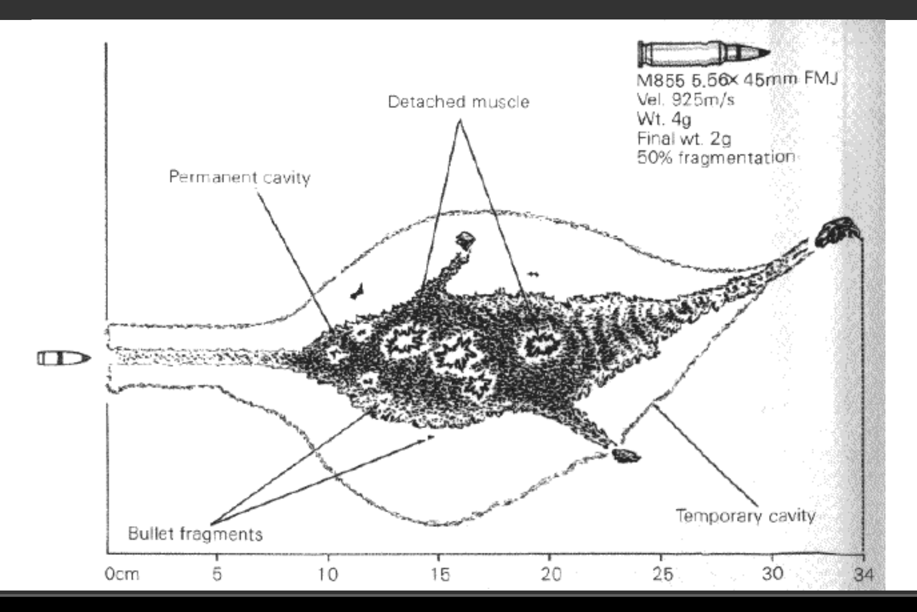


NATO M855/SS109 5.56x45mm

The slightly heavier and longer American M855 bullet shot from the M16A2 assault rifle is replacing the M193 bullet shot from the M16A1 as the standard bullet of the US armed forces. FN Herstal originally developed this bullet type (which has a steel "penetrator" as the forward part of its core) designating its bullet the SS109. The wound profile is very similar to that produced by the M 193 bullet. Although the SS109 and the M866 are not the same bullet, their differences are small and one almost needs a magnifying glass and a side-by-side comparison to differentiate the two. There is little difference in their performance in tissue.

The abdominal and the thigh wound produced by the M856 or the SS109 bullets would be essentially the same as those described above for the M16A1 M193 bullet.

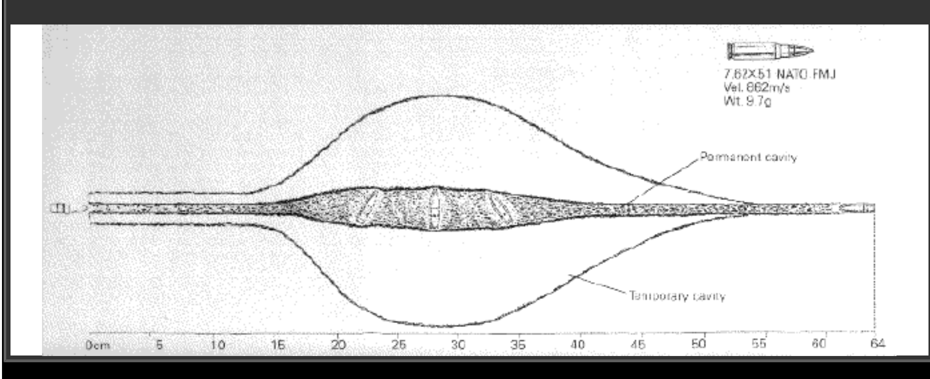
The longer 5.56mm bullets (M866, SS109) need a higher rotational velocity to maintain stabilisation in air. FN claimed that this faster rotation also causes the SS109 to have a significantly longer path in tissue before marked yaw occurs, thus producing wounds of less severity. This is simply untrue. Additional rotation beyond that needed to keep the bullet straight in air appears to have little or no effect on the projectile's behaviour in tissue. However, there is a situation concerning rotation rates whereby these longer 5.56mm bullets can cause increased wound severity. Shooting the SS109 or M855 bullet in the older M16A1 rifle barrel (they are not intended for use in this 1-in-12in twist barrel, but in the newer M 16A2 1-in-7in twist) produces a bullet spin rate insufficient to stabilise the longer bullets. Such a bullet will yaw up to 70° in its path through air. Striking at this high yaw angle (essentially travelling sideways), these bullets break on contact and the marked fragmentation, acting in synergy with the temporary cavity stretch, causes a large (over 15cm) stellate wound with the loss of considerable tissue (Fackler, M.L., unpublished data, 1988).

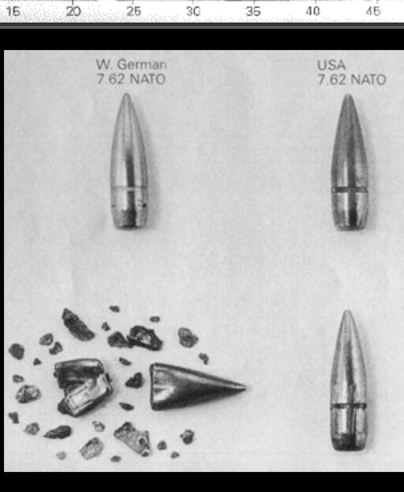


NATO 7.62x51mm (US version)

The wound profile of this full-metal-jacketed military bullet shows the characteristic behaviour in tissue observed in all non-deforming pointed bullets. It yaws first through 90° and then, after reaching the base-forward position continues the rest of its path with little or no yaw.

The uncomplicated thigh wound might show very minimal tissue disruption since the streamlined bullet tends to travel point forward during the first 16cm of its tissue path. The abdominal wound, with a sufficiently long path so that the bullet will yaw, causing the large temporary cavity that is seen at depths of 20 to 35cm, would be expected to be very disruptive. If the bullet path is such that this temporary cavity occurs in the liver, this amount of tissue disruption is likely to make survival improbable.





NATO 7.62x51mm (West German version)

The design standards for ammunition that can be called "NATO" ammunition do not specify bullet jacket material or jacket thickness. The construction of the West German 7.62 NATO bullet differs from the US 7.62 NATO round in that the jacket material is copper plated steel, whereas the US version is copper (or the so called gilding metal alloy, which is predominantly copper). The West German steel jacket is about 0.020in (0.6mm) thick near the cannelure and the US copper jacket is about 0.032in (0.8mm) thick at the same point. This design difference is responsible for a vast difference in performance in tissue. The German bullet, after travelling point-forward for only about 8cm, yaws and breaks at the cannelure. The flattened point section retains only about 66 percent of the bullet's weight, the remaining 45 per cent becomes fragments. The wound profile can be described as an enlarged M16 profile, with dimensions of the tissue disruption increased by 60 per cent (temporary cavity about 22cm diameter; permanent cavity about 11 cm diameter, penetration depth of the bullet point about 58cm).

The uncomplicated thigh wound from this bullet is likely to have a large exit with the loss of substantial tissue near the exit; still, this might not be a very serious wound since the bullet fragmentation does not occur until beyond 10cm of penetration depth and, in most shots, the bullet will have passed well beyond the major vessels before this occurs. The abdomen shot, however, because of the much enlarged permanent cavity from bullet fragmentation, is likely to prove fatal in a majority of cases.

Soviet and Chinese 7.62x54mm R (Rimmed case)

This bullet, although not nearly as common as the AK-47 or the others discussed above, is included because it is currently used in the Dragunov sniper rifle and the Communist bloc light machine-guns. Also, since it was the standard Soviet military round in WW1 and WW2 (in the bolt-action Mosin-Nagant), it might well be found in considerable numbers in some Third World countries. The bullet weighs 9.6g; the base is hollowed out with a cone-shaped cavity - 5mm deep for the Soviet, 3mm deep for the Chinese). The Soviet bullet has a copper-plated steel jacket and the Chinese one has a jacket of what appears to be brass. The muzzle velocity is about 853m/s and the wound profile closely resembles that of the 7.62 NATO (US version). Thigh and abdominal shots thus would be as described above for the US 7.62 NATO bullet.

Overview

In addition to the full-metal-jacketed construction which makes them "military" bullets, the pointed ogival "spitzer" tip shape is shared by all modern military bullets. The obvious advantage of this streamlined shape is decreased air drag, allowing the bullet to retain velocity better for improved long-range performance. A modern military 7.62mm bullet (with all-lead core) will lose only about one-third of its muzzle velocity over 600 yards (467m); the same weight bullet with a round-nose shape loses more than one-half of its velocity over the same distance.

More pertinent to the present discussion is this pointed shape's effect on the bullet's yaw in tissue. The first full-metal-jacketed bullets (1885-1910) were over four calibres long and round-nosed. Typical of this bullettype are the 6.5mm Carcano and the 30-40 Krag bullets; they penetrate tissue simulant travelling point-forward for 50cm or more before significant yaw begins (Fackler, M.L., unpublished data, 1987). The very minimal wounding effect produced by these early round-nosed jacketed bullets was remarked upon by surgeons of the time (Kocher, Markins, Brunner, Abbott, LaGarde, etc.). Even those soldiers with through-and-through chest wounds in which the bullet missed the large vessels (but passed through the lung) would be fit to rejoin their units in a few weeks.

The distance that the military-type bullet travels point-forward before yawing is critical to wounding effects. The distance shown on the wound profiles is the average distance at which this occurs. However, it is important to recognise how much shot-to-shot variation from this average distance can be expected. Taking the M16 wound profile (Fig. 6) as an example, it shows significant yaw starting at a 12cm penetration depth. Seven out of ten shots can be expected to begin yaw within 26 per cent of this distance (between nine and 16cm penetration depth). This plus or minus 25 per cent rule is a useful approximation that can be applied to the otherwound profiles. Let us apply it to the 50cm distance-to-yaw for the older bullets; whether the bullet begins to yaw between 37 or 63cm penetration distance does not effect most wounds of the human body because, in the great majority of cases, the total tissue path will be less than 37cm.

Conversely, inconsistent effects have been noted in wounds caused by the M16 and other modern military bullets. Considering the variation in length of the possible tissue path through the human body, this "inconsistency" of effect is to be expected. Beware! This variation can be used to dupe the unsuspecting. A series of shots through a 14 or 15cm block of tissue simulant or the leg of a 25kg animal can give enough variation so that, by selective choice of exit wound photographs, one can "prove"any point one wishes (such as one bullet being less "humane" than another). The author hopes that understanding this will make the reader less likely prey to this sort of deception.

Bullet mass and bullet striking velocity establish a bullet's potential; they set the limit on the tissue disruption it can produce. Bullet shape and construction determine how much of this potential is actually used to disrupt tissue; they are the major determinants of bullet effect. Far and away the most disruptive bullet of those described is the West German 7.62 NATO round. Its fragmenting behavior maximises utilisation of its much higher potential (bullet mass well over twice that of any of the 5.56mm bullets and velocity only about ten percent less than theirs) for tissue disruption.

This author has not tested other European 7.62 NATO rounds, but the "NATO standards" apparently allow bullet designers great latitude in the choice of bullet jacket material and thickness. In 1979 a published high-speed x-ray photograph showed the Swedish 7.62 equivalent to the 7.62 NATO bullet breaking in a soap block shot at a range of 100m. Although bullet fragments were not recovered and photographed (the importance of bullet fragmentation in tissue disruption was not well recognised at the time), one must suspect the same very disruptive behaviour from this bullet as from the West German round. This is particularly ironic since the Swedish wound ballistics program was using every means possible to discredit the M16 as "inhumane" while, at the same time, Sweden was producing a 7.62 military bullet that caused far more extensive wounds than the M16.

Future combat rifle considerations

Two concepts that are being considered deserve comment. First, the flechette (a nail with fins) used as a single small-arm projectile) this projectile has been used in artillery rounds to increase the radius of the injuryzone. It retains velocity well due to its aerodynamic shape and high length-to-diameter ratio. It can cause wounds at a much greater distance from the detonation than blunt irregular fragments or spheres that lose velocity rapidly. However, an overwhelming limitation of the flechette is the very minimal wound it causes. Flechettes are stabilised in air by fins rather than rotation. Fin stabilisation works just as well in tissue, keeping the projectile point forward. Travelling in this attitude, it causes minimal tissue crush disruption and almost no temporary cavity.

Military rifle bullets yaw in tissue because their rotation is sufficient to maintain their point-forward travel in air, but insufficient to maintain that position in tissue - sooner or later they yaw to reach their stable centre-of-mass-forward attitude. Flechettes have the drag of the fins permanently attached on their tail to keep the point forward; this stabilises them in air and in tissue.

Considerable confusion exists concerning the effects of flechettes. In a recent publication one finds the erroneous statement "...the flechette can inflict severe wounds by virtue of its poor stabilisation and readiness to tumble on impact...". Bellamy's "Little arrows", the classic paper on flechettes, points out a reason for the misconceptions: Many flechettes launched from artillery shells are bent by the force of the detonation. Persons close to the detonation are penetrated by these bent flechettes. It has been assumed that the bending resulted from the flechettes striking the body. Bellamy's report is in accord with this author's personal experience treating flechette wounds on the battlefield - flechettes, as used thus far in warfare, travel straight in tissue and cause very minimal tissue disruption.

The second consideration is the use of the three-round burst at a rate of fire of 2,000 r/min in the Heckler & Koch G11 caseless ammunition rifle. This burst fire and high cyclic rate are designed to increase hit probability. This may be a significant factor in the weapon's effectiveness at ranges over 200m, where only one of the three rounds is likely to hit. What, however, will be the wounding effect of this three-round burst at ranges under 50m where most of the casualties have occurred in recent conflicts? At this range the three rounds will hit the body within a few centimetres of one another; each successive round will hit within 30 milliseconds of the previous one. The first temporary cavitation pulsation (expansion and collapse) might last for 10 to 12 milliseconds; several pulsations of similar duration will follow. The tissue will still be moving from the temporary cavitation caused by the first round when it is subjected to the second temporary cavity, and so on for the third. Will the effect be simply additive, like three separate shots? Or will the close time proximity cause a synergistic effect, resulting in a wound that many will call "inhumane"?

This author would like to see some rational testing of effects (in which the entire projectile-tissue interaction is captured - not just the first 15cm) as a basis for estimating wounding effects so that the combat surgeon can be forewarned and not, as occurs in practice, have to use the wounded combatant to learn how best to treat some new, unusual wound.

Page source: International Defense Review, January 1989, pp. 56-64

Terminal Ballistics

back

by Static and Dr. Wells, Edited by Stillman

Recently there has been an across-the-board increase in the study of ballistics. However, one area where there has been more study than any other is that of terminal ballistics. For our purposes, we will say that Terminal Ballistics is the study of a bullet's path and its actions once it has encountered its target. For the most part, this paper will use a semi-fluid medium as the target, unless stated otherwise. It is important to note that very little contemporary research is done using actual human bodies. Rather, it is done using ballistic gelatin, which does not exactly simulate a human body, although it comes very close as test mediums go.

An important point must be made at this part of the discussion, one which has not been discussed in depth in any paper I have come across. Pistol rounds and rifle rounds have different wounding mechanisms. The purpose of this paper is to compare the two different wound profiles. First, each wound profile will be discussed. Then, the wound profiles of both types of rounds will be compared in the last part of the paper.

Pistols

Pistol rounds have received the most attention lately, and it is here where I will start. Typically, a pistol round has a length-to-width ratio of about 2:1. Their composition is typically of a lead/antimony or lead/bismuth mix, frequently with a thin metal jacket, usually of copper. Pistol caliber hollowpoints are more pronounced than rifle caliber for a number of reasons, though the main one appears to be due to the relative bullet sizes. Pistol rounds have a wide variety of velocities, ranging from subsonic to supersonic. It is extremely important to note at this time that the wounding effects of supersonic bullets have been highly exaggerated, and all contemporary papers are quick to point this out. This will be covered in depth in the rifle section. We will break the discussion of pistol rounds into two categories: full metal jacketed (FMJ) rounds, and jacketed hollowpoint (JHP) rounds.

Full metal jacket rounds enter the target typically nose first (it is extremely hard to tumble a pistol round in flight), and then proceed in a straight line through the target, unless acted upon by another force, such as impact with a bone. Towards the end of the bullet's travel in the target, the round can skew slightly in trajectory, but rarely will it fully tumble. When a bullet of this size does tumble, it creates very little additional tissue disruption, so the phenomenon is considered moot. Throughout the bullet's transit, two cavities are simultaneously created and superimposed on each other. These are the temporary cavity and the permanent cavity. The temporary cavity exists for a fraction of a second, and is caused by the shock of the round as it transits the body of the target. This cavity has been attributed in the past to damage that occurs distant to the actual permanent wound cavity. Although popular, this conception is false. The "hypersonic" shock waves that are said to disrupt the body when a supersonic round enters it do not exist. The human body is designed to receive traumatic shocks and dissipate the energy. This topic will be further explored in the rifle section as well. FMJ's may come to rest in either the nose-first or tail-first attitude. This probably is due to individual round construction, but I have found no papers studying this.

Jacketed hollowpoint rounds typically enter the target nose first, for the same reasons as FMJ. Once the round enters the target, the round (for the purposes of this paper) begins to expand, typically increasing the width of the round by 50-90%. Forensic evidence points out that a large percentage (some papers have sighted figures as high as 50% based on forensic evidence) of hollowpoint rounds do not mushroom out as their construction intended. If the round expands evenly and does not come apart, it may continue forward, creating a larger than expected wound cavity, and decelerating very fast. This deceleration causes a larger temporary cavity (due to energy transfer from bullet to target) but not a tremendous amount of additional tissue damage. Additional tissue damage is mainly due to the expansion of the bullet. It is important to note that the sudden energy dump is much more likely to cause a target some degree of "knockback" or physical knock down. If the round doesn't expand evenly, it may begin to tumble. This increases the probability that the bullet will begin to fragment or come apart. If the round begins to tumble and does not come apart, there is no appreciable increase in damage. However, when the round starts to come apart in the body, it increases the areas of the body that are disrupted by the round, with a subsequent increase in overall damage to the body. The increase is typically small, but noticeable, and usually results in increased bleed rates. However, this would not be termed an explosive event, as the round is typically shedding small parts of itself.

Rifles

Rifle rounds are almost always constructed with a lead/antimony or lead/bismuth core, and jacketed with copper or other appropriate metal. It is becoming more and more uncommon to find a non-jacketed rifle round. This paper will only address jacketed rifle rounds. Rifle rounds usually have a length-to-width ratio of close to 3:1. Most of the papers I have studied only addressed rounds smaller than 7.62mm in diameter, though I imagine that larger rounds would have similar characteristics. Most rifle rounds are supersonic, which is one characteristic that separates them from nearly all pistol rounds. Keep in mind however, that the fact they are supersonic has little direct bearing on their wounding profile. Instead, it is the energy involved which is one of the deciding factors. Almost all of the relevant discussion regarding wounding profiles can be discussed using FMJ rounds, though we will touch on JHP rounds as well. It is important to note that not all rifle rounds with an open tip are considered JHP rounds. Some of these rounds use ballistic tips, frequently made of a plastic or similar material. Some of them are intentionally left empty to increase the yaw of the bullet once it enters a target. As these are not purpose-built expanding rounds, these will be discussed under FMJ's.

Full metal-jacketed bullets are extremely common, and deserve special attention. For the purposes of this paper, we are going to assume that the rounds strike the target nose first, even though this is often not the case. This type of round has a tremendous amount of energy behind its sharply defined point, and is capable of limited armor penetration because of this. Once the bullet enters the target, it almost immediately begins a yaw process. This is commonly referred to as tumbling. This reference is not entirely accurate, as most rounds do not truly tumble. Instead, as they approach or exceed ninety degrees of yaw, the bullet comes apart. Unlike the JHP pistol rounds, this fragmentation of the bullet is nearly explosive in quality. Typically, the bullet breaks into two primary parts, and dozens of small fragments. These fragments have a tremendous amount of energy, and can be found up to a full thirty centimeters away from the initial point of departure. It is important to understand that each of these fragments creates its own permanent and temporary cavity. Upon forensic examination, these "explosions" and subsequent fragmentation, appear to create a much larger permanent cavity than can be immediately explained. Previously, this was erroneously written off as an un-collapsed temporary cavity. Additionally, the small fragments may enter fluid channels (blood stream, intestinal tract, etc.), and be carried elsewhere to do further damage. This can explain some of the anecdotal reports of people suffering severe cerebral injuries after being shot in the abdomen with a rifle caliber bullet (Maddox 1985). It also stresses the importance of proper scientific forensic examination. Bullets of this type will typically end their movement through the target in a tail-first aspect. It is possible for a bullet to enter the body and not tumble, or to tumble and not fragment, or to suffer delayed fragmentation. The scenario described above however is the most common one so far examined.

Rifle bullets using a hollowpoint design have not been studied as closely as pistol caliber hollowpoints. However, some ideas have been discussed and debated. Assuming the round enters point-first, it should quickly expand, similar to the pistol round. It then has many of the same options as the pistol JHP. If the round begins to yaw, it will yaw more rapidly, but with a slightly lower tendency to suffer explosive fragmentation, as the length of the bullet has been reduced by the expansion of the nose. The round may also suffer from low energy fragmentation, similar to the JHP pistol round. This will cause more tissue damage due to a higher velocity inherent to most rifle rounds. These low energy fragments can still penetrate the body for some distance. However, the primary wounding mechanism, being the explosive fragmentation, may be sacrificed. Overall, a JHP will have a higher definite wounding capability, while an FMJ will have a slightly higher potential wounding capability and is more likely to reach that potential. The JHP is almost always going to end up in a tail-first aspect.

Conclusions

From the above statements, the following conclusions can be drawn: First, while pistol and rifle bullets both disrupt tissue through direct effects, rifle bullets do this through a process that can not be easily duplicated with a pistol bullet. Second, FMJ rifle bullets all inherently have armor penetrating capability while retaining extremely high tissue disruption abilities, while a hollowpoint bullet will still have the lack of armor penetration values that is almost universally attributed to hollowpoint designs. Third and finally, it should be stressed that there has been no proven increase in lethality when comparing rifle FMJ's and JHP's. There is a tremendous amount of number-based evidence that shows FMJ rounds to be more lethal, but there are far more casualties attributed to FMJ's than to JHP's. Therefore, these are the cases that get studied. Ballistic gelatin evidence supports this as well, however it is not a guaranteed indicator of terminal performance.

A Brief History of Modern Infantry Rifles

back

By Ben Broughton

The Golden Age

At the beginning of World War Two, most European countries were still using bolt-action rifles. Great Britain had the Lee-Enfield, Germany was largely using the Mauser, Russians had the Mosin-Nagant, The French had their MAS36, Italy with their Mannlicher-Carcanos, Japan with the Arisaka... The list goes on. These rifles were designed to engage human-sized targets at up to 1000 meters, more or less. They were designed as offensive weapons, to be used in tandem with a defensive weapon, a handgun, which filled the gap of about 25 meters where a bolt-action rifle was incredibly hard to use to good effect.

The US adopted the M1 Garand in 1936. One of the first, if not the first semi-automatic infantry rifle adopted by a nation's military. The reason it fired in semi-automatic mode was to allow the user to engage multiple targets very quickly in relation to bolt-action rifles. It was still on par with the older bolt-actions because it fired a "full power" rifle cartridge that was effective out to about 1000 meters. The Russians also adopted a semi-automatic rifle in small numbers the same year.

Enter: The Assault Rifle

During WWII, the Germans learned of the usefulness of the submachine gun through fighting in the urban environments of the eastern front. This caused some designers to re-evaluate the role of the infantry rifle. During that time it was found that soldiers rarely engaged targets effectively at ranges beyond 300 meters. Using this information, Mauser engineers created a new compact rifle firing a less powerful rifle cartridge that could be used in a dual role; as an offensive weapon accurate at ranges to around 300 meters (beyond what their "machine pistols" were capable of) and a defensive weapon which fired in fully automatic mode for use in close range engagements.

In 1943, the Reich put the 7.92x33mm cartridge and the MP43 in full scale production for this purpose. A few minor changes and the MP43 was produced the next year as the MP44. The way the story goes, the MP44 was later renamed StG44 or "sturmgewehr" -*assault rifle*- by Hitler himself. The title stuck and the rest is history.

The Russians followed suit after being on the receiving end of the MP43 and developed the 7.62x39mm cartridge for the SKS semi-automatic rifle. By post-war 1946, the SKS would replace most of the USSR's old Mosin-Nagant bolt-action rifles, and supplement the Tokarev SVT semi-automatics. But in the next year, the SKS would also be supplemented and eventually replaced by the Avtomat Kalashnikov, 1947 or AK-47.

Behind the Times

The rest of the allied forces were slower to accept this idea, probably because they'd just formed the North Atlantic Treaty Organization (NATO), which concentrated some effort on logistics and the standardization of weapons and ammunition. The US, whose forces spent a relatively short amount of time in Europe and apparently had no problem with the M1 Garand and other weapons on the Pacific front, didn't see the need to compromise a great deal on a rifle cartridge. Throwing their political weight around NATO, the US pushed for the adoption of a shortened .30-caliber cartridge developed by the Springfield Armory, which would be called the 7.62x51mm NATO. It was adopted by the Army in 1954, and introduced commercially as the .308 Winchester.

A variety of fully automatic rifles were developed using this cartridge, including the FN-FAL widely adopted by many countries (to be adopted by Great Britain and satellites as the L1A1), the US M14 which was little more than a modified M1 Garand, and the German Republic's G3, also widely adopted.

Ten years later, a small faction of designers in the US had been developing moderate-power, .22-caliber rifle cartridges for the Continental Army Command (CONARC) to replace the .30 Carbine. Eventually these rifles were offered as an alternate technology to main battle rifles. The US military small arms establishment based at the Springfield Armory was against this all the way, and had been since day one. But the Vietnam War really drove the point home to the other branches of military service. Again, close range engagement was the rule rather than the exception and the 7.62mm NATO was decided to be overly powerful for general use.

The US Catches Up

Eugene Stoner designed his AR-15 for use with a slightly modified .222 Remington rifle cartridge for the CONARC project, which had spread to other branches of the military, namely the Air Force, who were interested in replacing the M1 Carbine with a better system. Financial matters caused Armalite to sell the rights to the AR-15 to Colt's Patent Firearms Manufacturing Company, and Colt's began selling the idea to various government agencies. The M16 was born along with the 5.56x45mm rifle cartridge and both were thrown directly into service in 1964. In an effort to standardize US armed forces and simplify logistics, Secretary of Defense Robert McNamara ordered thousands of M16s. Shortly afterwards, Remington introduced the new military cartridge commercially, calling it the ".223 Remington".

During Vietnam, some NATO countries showed disapproval at the fact that the US had decided to adopt a rifle cartridge that the Organization hadn't approved. The US responded with a shrug of political apathy.

The 5.56x45mm had found a home in the US, and by default, other NATO countries. During the 1970's, Fabrique Nationale built the CAL (and later the FNC), Heckler & Koch released the HK33 and variants, Galil intoduced his rifle, Beretta made the AR70/223, France put out the FAMAS, SIG introduced the 540, Steyr introduced the AUG, RSAF Enfield was developing the L85 (later to be adopted as the SA-80)...

The USSR Responds

For the second time in a span of 25 years, the USSR had assets on the wrong end of new small arms developments. In reaction to the positive effects the lighter 5.56x45mm cartridge was having in combat, the 7.62x39mm and AK-47 were soon replaced by more modern designs.

In 1974, the 5.45x39mm Soviet cartridge was introduced in an updated rifle also of Kalashnikov design, the AK-74.

NATO Approves

During the 1970's, NATO performed its own tests on the US 5.56x45mm, coming to the conclusion that after a little modification, the cartridge would be good enough for use in a general infantry rifle. Fabrique Nationale designed a new primary bullet -a light armor-piercing bullet known within FN as the "SS109"- and the cartridge was adopted by NATO in 1980.

Epilogue

Today, the advancement of the infantry rifle continues with Heckler & Koch's G36 and variants, STK's SAR-21, IMI's Tavor, Vektor's CR21 and many, many more. Behind all of them is a 36 year-old cartridge whose evolution began more than 60 years ago.

Recoil / Muzzle Energy Calculator

[taylor knockout value] [english to metric conversion] [onlineconversion.com]

Bullet Weight (grains)
Bullet Velocity (feet per second)
Powder Weight (grains)
Gun Weight (pounds)

Calculate Reset

Recoil Energy

foot pounds @

feet per second

Recoil Impulse

pounds per second

Muzzle Energy

foot pounds

Taylor Knockout Scale

[recoil calculator] [english to metric conversion] [onlineconversion.com]

Bullet Weight (grains)
Bullet Velocity (feet per second)
Bullet Caliber (inches)

Calculate Reset

TKO

mass*velocity*caliber/7000

John Taylor was a legendary African game hunter who used many different cartridges on large, dangerous game. *Lots* of large, dangerous game. He would commonly go out of touch with western civilization for *years at a time* while hunting. He wrote books about the subject, including *Pondoro* (which means "lion" in the Chinyungwe language. I told you he was out in the sticks!), and *African Rifles and Cartridges*.

While he was out there, so lost that he wasn't aware that World War Two had started, he developed a simple cartridge rating system he called his Knockout Scale. Mr. Taylor was aware of the fact that game is killed by tissue destruction, resulting in blood loss, and that tissue destruction occurs through bullet penetration and expansion.

This scale generates a composite number which can be used to gauge a given cartridge's *potential* to stop a living, breathing animal. The scale does not assume that all kinetic energy can be transferred into a given target at any given time. It merely gives an idea of scale; what is appropriate for an animal of a given size. For instance, try these cartridges:

Handgun	Bullet Weight (grains)	Velocity (fps)	Caliber (inches)	TKO
.22 Long Rifle	38	1280	.224	
9mm Parabellum (Luger)	124	1150	.355	
.38 Special	158	800	.357	
.357 Magnum	158	1225	.357	
.40 Smith & Wesson	155	1150	.400	
.44 Magnum	240	1180	.429	
.45 ACP	230	850	.451	
.454 Casull	300	1500	.454	
.50 GI	300	725	.500	
.50 Action Express	325	1400	.500	
.500 S&W Magnum	440	1625	.500	

Rifle	Bullet Weight (grains)	Velocity (fps)	Caliber (inches)	TKO
5.45x39mm Soviet	54	2950	.221	
5.56x45mm NATO (.223 Remington)	62	3100	.224	
7.62x39mm Soviet	122	2330	.310	
7.62x51mm NATO (.308 Winchester)	147	2750	.308	
.30-06 Springfield	180	2750	.308	
.300 Winchester Magnum	190	3150	.308	
.338 Laupua Magnum	250	2950	.338	
.375 Holland & Holland	300	2530	.375	
.416 Rigby	400	2420	.416	
.470 Nitro Express	500	2150	.470	
.50 BMG	660	2910	.510	
.700 Nitro Express	1000	2000	.700	

The TKO scale only takes damage from mechanical means into account. Relatively speaking, a cartridge with a TKO of 1 could kill a human being at close range, though most cartridges designed for self-defense have a TKO between 4 and 12. On the other end of the scale, a cartridge with a TKO of about 40 or above could incapacitate a charging elephant, depending on shot placement. The bigger cartridges almost gaurantee that such a large animal will be stopped in its tracks.

Since Shadowrun uses the Power Level of the "weapon" as the means for resolving armor penetration as well as determining damage, the result of the TKO scale helps us very little for determining a Power Level for real life cartridges. (In reality, the ability to penetrate armor and deliver a damaging effect have very little to do with each other.) However, it is an interesting way to compare the potential for damage between certain cartridges.

Measurement Converter

back | home

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Distance Unit Conversion							
Meters	Millimeters	Inches	Feet	Yards	Miles	Nautical Miles	Calibrate
							Calculate

Weight Unit Conversion						
Kilograms	Grams	Grains	Ounces	Pounds	Metric Tons	Calibrate
						Calculate

Energy Unit Conversion		
Foot Pounds	Joules	Calibrate
		Calculate

Guns. Lots of Guns.

"You're acting like a first year f*ing thief! I'm acting like a professional!"**
-Mr. Pink, Reservoir Dogs

Throughout the years I've spent playing Shadowrun, I've come to realize something. The bulk of Shadowrun players know next to nothing about how a firearm functions. That's understandable. Not everyone wants or needs to take the time to learn about them just to play a game. That's why I've created this site. To educate and inform those interested in firearms, and to create rules that come closer to reflecting the reality of firearms.

Though Shadowrun takes place in a futuristic, Gibson-meets-Tolkien kind of world that resides in the imaginations of its players, its story line is set in a near-future Earth. That means the laws of physics as we know them still apply. While "realism" may be a word that inspires conniption fits from the occasional gamer, the word "practicality" should not. Even in a fairly abstract role playing game system, anyone should be able to understand that some things tend to be far more abstract than others, which makes them impractical in terms of playability. With that in mind, statistics and ratings for firearms should be consistent within the system.

I know that some people are bound to have a problem with some of these weapons. That basically comes down to a difference in how we perceive the world of Shadowrun and how we like to have fun playing within it. Different groups play the game differently. If your game is geared more toward a Hong-Kong-Blood-Opera-Flying-Lead-And-Kung-Fu type thing, these rules probably aren't going to make you very happy if your character ends up looking down the bore. Lethality is definitely enhanced.

I'll try to explain my view a little more thoroughly. Guns kill, soldiers die, and good shadowrunners don't do much shooting. It's not good for business. Loud noises and dead bodies tend to cause investigation. Investigation draws attention to people who must live with a high degree of anonymity in order to keep their clients happy so that they can get paid. Believe it or not, shadowrunning is a service industry. It exists to circumvent the rules that a society has chosen to impose upon itself through a little thing called government. If you get caught, you'll get punished. One of the better ways to keep from getting caught is to keep your face out of the spotlight and stay safely in the shadows. Tact. If you're dumb enough to leave a trail of bodies and evidence in your wake, you're gonna find yourself in a little box, sitting on top of a seventeen-inch cybercock in no time. And it will be about as straight and narrow as the choices you made before you got yourself into that little predicament. It's just a matter of time. But if you can manage to pull off jobs without drawing attention to yourself, that risk turns into reward.

Obviously, these ideas can conflict with the way that some people like to play the game. There's nothing wrong with playing the game the way it is presented in published Shadowrun material. And there's nothing wrong with playing it using your own rules, either. As long as you're having fun, you're doing it right.

Issues

"Why do they cost so much?" Because firearms are expensive. Not normally because they're that difficult to make, but because the corp making them wants their cut, and the politicians want to be well paid for the crap they have to take from the people and committees fueled by the media that don't seem to really know what they're talking about. The firearms presented in the plethora of official Shadowrun materials are excessively cheap, assuming one Nuyen is equivalent to one US Dollar.

(Since I wrote the above many years ago, I've had to correct myself...) According to Wordman's excellent Sixth World site, one Nuyen is equivalent to five UCAS dollars. This is apparently stated on page 84 of the **Neo Anarchist's Guide to North America** and I missed it back when I had access to a copy. If you'd like, you can assume that the prices I have listed are in UCAS dollars rather than Nuyen and divide by five to get the actual cost in Nuyen. If that has changed with the release of **Shadows of North America**, please let me know, or if you're in the position to, send me a copy!

"Why do they generally weigh less than other Shadowun firearms?" Because the weights listed in Shadowrun are notoriously screwy. What is listed under weight ratings is called a "kilogram". It should actually be called a pound. Things are excessively heavy in Shadowrun because of this. If you'd like to be a little more precise, one pound (lbs) equals 453 grams (g). You do the math (kg/0.4536=lbs). There's a measurement converter here.

Another thing I've already heard is that the guns "aren't different enough." The firearms presented here have been designed more for player preference and an attempt at displaying a bit more practicality than any big changes in game effect. For instance, many of the pistols available here are very similar to each other as far as the game is concerned because the things that make them unique in reality (i.e. double action or single action trigger mechanisms, etc...) do not make any difference in Shadowrun's system of rules. However, if you're a gamemaster, once you've learned the details of how certain firearms function, you can use certain limitations that every firearm possesses in a realistic manner to control situations that might otherwise be argued against during game play. A deeper level of detail can also help players emerse themselves into character.

The firearms listed here will also show you what the FCG can do for you. More information on the FCG can be found below.

Firearm Ratings

On each firearm page, you will find a table of statistics that looks like this:

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P3 ERASe	**10x24mm**	**Heavy Pistol**	**5**	**15 clip**	**SA/BF**	**9M**	**1.9**	**12/18 days**	**3,000 ¥**

Model: Designates the model name, number, or abbreviated name of the firearm.

Caliber: Adds a dimension to the Shadowrun system by designating the difference in calibers and cartridges between firearms. Unless otherwise noted, the firearm may only use the cartridge stated in this field. For example, a firearm using 9mm Parabellum ammunition may not use 9mm Kurz, 9mm Makarov, 9x23mm, or any other cartridge but 9mm Parabellum.

Sometimes these cartridges are known by several different names, but are actually the same cartridge (for example, 9mm Parabellum = 9x19mm Luger; 9mm Kurz = .380 Auto). More detailed information about cartridges can be found in the Ammunition By Caliber section of this website.

Range: By canon Shadowrun rules, each firearm belongs to a larger class of firearms. Each class has its own range table (SR3.111; i.e., Light Pistol, Heavy Pistol, Submachine Gun, etc...). In most cases, that class also has a standard Damage Code (i.e., Light Pistol usually have a damage code of 6L). In rare cases, the range tables and damage codes do not match. In the case of the Hammerli 610S (being a target pistol), this has been done to simulate a weapon of class that has better range than other weapons of its class (Heavy pistol range, Light Pistol damage).

Firearms on this website occasionally use the same method for the same purposes. For example, some weapons found in the Assault Rifles section use the Sport Rifle or LMG range tables. This is done to simulate that a given firearm may have better range than most of the others in its class. Also, this website uses additional range tables for new "classes" of firearms (Light Carbine, Carbine, Heavy Sniper Rifle, etc...). The modified range tables can be found in the Rules section of this website. In the future, each firearm may include its own range table.

Conceal: This rating represents a measurement of how difficult it may be to hide a particular firearm. For more information, see SR3.270.

Ammo: This rating reresents the firearm's base ammunition capacity and the type of ammunition storage device that is used. Some firearms may employ different magazines with different capacities. Reduced capacity can result in an increase to the weapon's Conceal Rating. Conversely, increased capacity can result in a decrease of Conceal Rating.

A **(c)** or **clip** is used to represent any type of detachable magazine that can be quickly removed from or inserted into the firearm. In an effort to inform and enlighten, the term "clip" is a misnomer when used in this context. The correct term is "magazine" or more specifically, "detachable box magazine".

Cylinder or **cyl** represents a rotating, multi-chambered magazine from which cartridges are directly fired, commonly found in revolvers. While modern revolvers include a cylinder that can be unlocked from the frame in order to allow all of its chambers to be loaded or unloaded at once, there are a couple of revolvers to be found on this site that only allow one chamber to be loaded/unloaded at a time. Special rules for these revolvers are located in the applicable firearm's notes.

A **(m)**, **mag** or **magazine** represents any type of internal magazine, into which cartridges are loaded or unloaded individually. In reality, this is not necessarily the case.

A **(b)**, **break** or **breech** represents any type of manually-operated firearm in which the action is opened and one cartridge at a time is loaded directly into the chamber. This includes double-barreled shotguns, break-action pistols and the like.

Mode: Designates the available modes that the weapon can fire in. Single Shot (**SS**), Semi-Automatic (**SA**), Burst Fire (**BF**), and Fully Automatic (**FA**). Some weapons are selectable between different modes (**SA/BF/FA**) while others can use only one mode (**SS**).

While the term behind the acronym does not technically fit, **SA** mode is used in conjunction with double-action revolvers on this website. This is done in order to simulate that double-action revolvers can be fired very quickly indeed, at the same speed or faster than many semi-automatic pistols, and as such should not require a Complex Action to fire, as with **SS** mode.

Rules regarding modes can be found in SR3.114.

Damage: Represents basically how much damage the weapon is capable of dealing out proir to staging and resistance. The number is the **Power Rating** (the higher it is, the more powerful the weapon), and the letter reprents the **Damage Level** (Light, Moderate, Serious, or Deadly). Rules regarding damage can be found in SR3.114.

Weight: Weight of the weapon, unloaded, in kilograms. Canon rules are notoriously faulty here, with the number better representing pounds rather that kilograms. That issue is corrected on this site. Weights actually are in kilograms.

Availability: This stat represents how difficult it is to aquire the weapon. Personally, I apply this rating only to the North American continent. Other areas may have different availability ratings. Rules for availability ratings can be found in SR3.114.

Cost: This is a rating of how cute the firearm is, in nuyen (¥). Just kidding. This value represents the manufacturer's suggested retail price, in a freely exchangeable currency known as "nuyen". On the streets, the weapon may be marked up or down, at GM discretion.

As you have probably noticed, my site does not include ratings for **Street Index** or **Legality** on this website. That may change in the future, but previously I have felt that GMs should be given discretion in controlling these variables during game play. **Street Indexes** can be used as leverage, in order to help the GM guide players into a choice of weapons for a particular job. In my own opinion, the **Legality** codes used for many of the firearms in canon are not as well thought-out as they should be. Also, legality will differ from country to country (even region to region), so having one table to handle it all isn't necessarily the right thing to do. So I've opted to exclude those variables on this site and leave them to the GM. May s/he be wise and fair to you.

However, all of that is just my opinion about the matter. Ultimately, by leaving those factors out, players and GMs are free to choose any method or statistic they find reasonable in their own games.

The Firearms Creation Guide

The FCG is the system I used to create a lot of the guns when I originally wrote this site around five years ago, long before the release of Cannon Companion. The FCG was designed by Peter Millholland, and it works kind of like the Vehicle Creation Guide from the Rigger 2 sourcebook. I used a slightly modified version of Pete's FCG to create a lot of the guns on this site, so if things don't come out the same for you, that's why.

To check it out, click here: Firearms Creation Guide

Anyway...

Use the frame to your left to navigate through the list of firearms. The weapon you're looking for will be displayed in the frame that this page is in.

If there are any questions, comments, complaints, heads-up's, whatever, you can e-mail me by clicking here.

Enjoy!!

Handgun Applications

"Anything worth shooting once is worth shooting twice."
- Col. Jeff Cooper, USMC (Ret.), regarding combat handgun training.

Handguns are small, compact firearms intended to be used at relatively short range and fired accurately from one hand, though this may not necessarily be the best way to use one. Handguns are usually intended to be carried upon a person, for extended periods of time, if necessary. Their small size relative to other firearms allow handguns to be concealed easily. Some are designed with this in mind.

Combat Handguns

As Clint Smith (president and director of Thunder Ranch) puts it, "A pistol is something you use to fight your way back to your gun."

That simple proverb should give you a pretty good idea of how handguns are regarded as fighting tools. They are strictly defensive weapons, being limited in the amount of firepower that they can store and the range at which targets can be engaged effectively. Other types of firearms, such submachine guns, rifles, or carbines are much more effective in an attacking role. They have much greater range, usually carry much more ammunition, are relatively easier to be accurate with, and are generally much more effective in terms of terminal ballistic performance over a wider range of distances.

Still, combat handguns, sometimes known as defensive or tactical handguns, would probably be the most useful type of firearm to a shadowrunner. They are relatively easy to conceal: covert rather than overt. They are also very potent at close range, where engagements are most likely to occur. Most combat handguns are also designed to store a relatively large number of rounds compared to other types of handguns, allowing for several targets to be engaged, or one target to be engaged several times, whichever is necessary. This last factor is probably the major reason why semi-automatic pistols are much more common than revolvers as combat handguns. Another reason is that semi-autos are usually much quicker to reload, assuming that more than one loaded magazine is available to the shooter.

In order to be effective in the combat role, a handgun should be A) as powerful as possible, B) as controllable as possible, and C) carry a reasonable amount of ammunition, reflective of the potential situations the person carrying the handgun thinks that he might find himself in. As you may have guessed, these factors can vary greatly depending on the size and the ability of the person carrying the handgun and the size of potential targets.

The Model 1911	**Examples of Combat Handguns**
The Beretta 92FS	
The Glock 22	

In Shadowrun, beings the size of Orks and Trolls may present a bit of a problem for the effectiveness of a defensive weapon such as a handgun. Generally speaking, the bigger the creature, the more bullet is needed to stop it. I can't imagine being assaulted by an angry Troll. A being that large and tough-skinned could likely shrug off many rounds of just about any defensive handgun cartridge available today and not think twice. Fortunately, there is a trade off available for the smaller sentients.

Hunting Handguns

Some handguns are designed for hunting, which usually means that they fire a much more powerful cartridge than would normally be necessary for defensive use. These types of handguns are usually much heavier and produce much more recoil, which is generally considered an acceptable trade off as the first shot is usually the only one that will be necessary in a hunting situation. Even if it's not, a rapid second shot is usually not going to be very useful as recoil will offset the user's ability to fire follow-up shots quickly and accurately.

Hunting handguns are usually either revolvers, breech loaders, or even bolt-action designs.

Single-shot handguns, like the Thompson/Center Contender and Encore, are breech-loaded handguns. As such, they may be the slowest to reload, but they can also be some of the most powerful, as they are capable of firing full power rifle cartridges.

Bolt Action handguns, such as Savage's Striker, also fire intermediate to full power rifle cartridges. They can also contain a limited number of rounds in an internal magazine, usually two to four rounds, depending on the cartridge.

Breech-loading and bolt-action handguns could be used to great effect in an urban sniping role, where engagements are unlikely to occur at ranges beyond 100 meters. These handguns are relatively powerful and are very accurate, even at ranges far in excess of what the more conventional handguns are capable of. They are also much more compact than rifles, and are much quicker in use. One popular conspiracy theory of the JFK assassination involves a confession by the supposed Grassy Knoll gunman, Jim Files, who stated that he used a Remington XP-100 bolt action handgun, chambered for the .222 Remington cartridge. That would certainly get the job done.

Hunting revolvers include those chambered for particularly powerful cartridges such as the .44 Magnum, .445 SuperMag .454 Casull, .475 Linebaugh, .480 Ruger, and .500 Magnum. Dan Wesson, Magnum Research, Smith & Wesson, Taurus, and Ruger all make revolvers chambered for these particularly powerful cartridges. Magnum Research also chambers some of their revolvers in cartridges designed for lever-action rifles such as the .444 Marlin, .45-70 Government and .450 Marlin cartridges.

The ubiquitous Desert Eagle is one semi-automatic pistol that has been used to good effect as a hunting handgun, even though it was originally developed for silhouette competition. Of the more powerful pistols available, the Desert Eagle would probably make the easiest transition to a combat handgun, as it incorporates features of combat handguns into its design and can be fired and reloaded quite rapidly, if necessary. Other powerful pistols include the Wildey Magnum, the LAR Grizzly and the AMT AutoMag, though these designs are either out of production or are far more limited in numbers compared to the popular Desert Eagle.

"Hold-Out" Handguns

Some handguns are specifically designed to be carried on a regular basis, out of sight. For this reason, these handguns are usually very small and very lightweight. This can put limits on the types of cartridges they can fire as recoil and muzzle flash, among other things, can present big problems in a small handgun.

Considering that it is very unlikely that any person would like to risk being shot by anything, many of the "hold-out" class of handguns are chambered for cartridges that can't be expected to stop an attacker unless the shot is very precisely placed. As Jeff Cooper contends, "A .22 in the tear duct will stop a fight as efficiently as a 44 Magnum." However, it is unlikely that most people carrying a small .22 handgun will be able to pull off such precision under the stress of the circumstances involved. As such, these handguns usually work by the threat of their use rather than the actual application of force.

Concealed Carry Handguns

An example of how legislation can affect a market is evident in the class of handguns commonly referred to as Concealed Carry handguns. Handguns that could be considered part of this class have been around for quite a while, but never in such proliferation as after 1994, when several of the United States introduced "Shall Issue" Concealed Carry handgun legislation. These laws allow any civilian without a criminal record to carry a handgun in public in the interest of self defense, as long as it is concealed from plain view. Most states require the applicant to take training courses which prepare them for the responsibility and proper use of carrying a concealed handgun.

Unlike most "hold-outs," Concealed Carry handguns usually include a set of sights and a double action or double action only (DAO) trigger mechanism that doesn't require a manual safety. This means that the gun can be carried safely with a round in the chamber, then drawn from concealment and fired without the need to disengage a safety first. They also tend to be chambered for the kind of potent cartridges that are commonly found in combat handguns.

Many handguns can be considered part of this class. The Walther PPK was the first successful semi-auto to include a double action trigger mechanism. As such, it could be considered one of the first true Concealed Carry pistols devised. Introduced in 1931, the PPK holds six rounds of .380 ACP or seven rounds of .32 ACP in a detachable box magazine. Still in production today, the PPK has been copied several times and its mechanisms have been incorporated into other popular pistol designs such as Walther's P-38, the Russian Makarov and PSM pistols, and several of Beretta's pistols.

One of the more popular Concealed Carry handguns available today is the Kahr pistol, available in several formats to suit the user's preference. These recoil-operated pistols are unusually small for the type of cartridge that they fire, chambered in either 9mm Parabellum or .40 S&W. Depending on the model, they carry five to seven rounds of ammunition in a detachable box magazine.

Yet another notable design in the growing class of Concealed Carry handguns would be Smith & Wesson's Model 340. It is a small-framed, double action only (DAO) revolver carrying five rounds of the proven .357 Magnum. Constructed of lightweight metals such as titanium and scandium, the Model 340 weighs only twelve ounces (340 g). Needless to say, it exhibits some rather punishing recoil with full-house .357 Magnum loads. But it's a joy to carry regularly. Considering that the average person is likely to carry the gun much more than they will shoot it, this makes plenty of sense.

In conclusion, handguns can be very effective weapons, though their uses are more often than not limited in practicality to that of defense. Handguns can be and have been used in offensive roles, but are done so only out of utility of their small size and under very specific circumstances. If it is known that a fight is going to occur, it would be wise to take some type of rifle as a primary weapon. But take a hundgun, too. Just in case.

Submachine Gun History, Applications and Performance

"There are three requisites for a good movie: ninjas, explosions and MP5s."
- Ben Broughton, circa 1998


Bergmann MP18/I, the first true submachine gun

What was eventually to become known as the "submachine gun" had its genesis during the Great War, developed around the concepts of infiltration, fire and movement, specifically for the desire to clear trenches of enemy soldiers. Because engagements were unlikely to occur beyond a range of a few feet within this environment, the long range potential of a rifle was unnecessary, not to mention its size and slow, bolt-action loading method. The American solution to this problem came in the form of "trenchbrooms", otherwise known as pump-action shotguns. But Hugo Schmeisser, at the request of the German government, chose a different, much more radical route.

Following the recommendations of the German Rifle Testing Commission (Spandau) for an individual, light weight weapon capable of fully automatic fire, Schmeisser was tasked to develop a weapon for the close quarters combat of trench warfare. The weapon was designed around the German military pistol cartridge, the 9mm Parabellum. This, along with the use of a shoulder stock, allowed the weapon to be controllable in fully automatic fire, giving the user the ability to engage multiple targets in cramped quarters in a very short amount of time. Yet the weapon was still effective to ranges exceeding 100 meters. Thus, the Maschinenpistole, Model 1918 (MP18/I) was born.

The Prussian War Ministry ordered 50,000 of the MP18/I and by November 1918, some 30,000 examples had been manufactured by Theodor Bergmann Waffenfabrik and C.G. Haenel. Less than 10,000 made it to the Western Front. Nevertheless, the new weapon made such an impact that its manufacture was banned under the Versailles Treaty.

Interim Developments

During WWI, a charismatic American General went about developing his own concept for a compact automatic firearm, built around the US military pistol cartridge (.45 ACP) and designed for exactly the same purpose as the MP18/I. Development continued postwar and by 1921, John T. Thompson had perfected his design, though he preferred to call it a "submachine gun" rather than a "machine pistol".

While several other submachine gun designs had been developed postwar, most were based on the MP18/I, or its improved version, the MP28/II. The Thompson was a bit different. Both the Thompson and the MP28/II operated from an open bolt and included fire selector mechanisms. But they differed in that the MP28/II used a straight blowback mechanism, whereas the Thompson relied upon a delayed blowback form of operation patented by John Blish.


M1921 Thompson Submachine Gun

Colt's Patent Firearms Manufacturing Company manufactured Thompson's submachine gun for his company, Auto Ordnance. Unfortunately, Thompson's intended customer, the US military, was slow to accept the idea. Sales were low and mainly made by large police departments, though there were some government and commercial sales. The commercial market was abandoned when the National Firearms Act of 1934 became law. Spurred on by the Great Depression, mafia violence rooted in Prohibition, not to mention Hollywood glamorization, this federal law put a stop to the sale of automatic weapons to anyone but individuals or departments licensed by the government. By 1939, Auto Ordnance still warehoused a stock of around 4,000 submachine guns from Colt's initial production run of 15,000 units.

Fortunately for Auto Ordnance, they were the only Allied producer of a submachine gun when World War II broke out. It happened just in time to at least pad the company's fall, staying in business initially through British and French military contracts, followed by US military contracts.

The "Great Patriotic War"


PPS-42

The development of the submachine gun went into World War II without much change, though the environment in which fighting began to take place did change. Warfare over vast tracts of open farmland migrated into urban areas. The submachine gun was found to be very useful in this environment as well, where engagements still occured at relatively close range, usually less than 300 meters and often closer than 100 meters.

Many armies learned valuable lessons about the importance of the submachine gun during this time. In particular the Russians, whose invasion of Finland was repelled not only by a number of exceptionally well-trained and prepared snipers, but also through the use of the Suomi M31 submachine gun. This lesson was only magnified when German forces began invading the USSR with their MP38 and MP40 submachine guns. However, the Germans were to be taught a few lessons themselves by the quick-to-pick-up Russians, mainly during the seige of Leningrad. During the seige, Russians within the city developed and manufactured the PPS-42 submachine gun and used it quite effectively to defend their city and eventually repel the invading forces.


M3 "Grease Gun"

The submachine gun came into its own during WWII. Almost every nation fighting produced one during this time and used it to great effect, though some needed work. The US military found that the Thompson was unnecessarily complicated and difficult to manufacture. Thus, it was redesigned to use a straight blowback mechanism. Also, the compensator and barrel fins were removed while the sights were simplified and the stock permanently attached in order to speed up production. The result was the M1. Further simplifications involving the firing mechanism produced the M1A1.

The M3 "Grease Gun" was another common American SMG, designed and manufactured quickly and cheaply out of stamped sheet steel. It was also followed by a simplified model, the M3A1.

By the time Britain declared war on Germany in 1940, they had no stock of submachineguns to speak of and were buying what they could, including the aformentioned Thompson from the US. Production began on the Lanchester, a copy of the Bergmann MP28/II. But shortly after production of the Lanchester began, the design for the Sten appeared, and production was moved to the new, cheaper and easier to manufacture design. By the end of the war, nearly four million Sten submachine guns had been manufactured.

Many other submachine guns were developed by other countries during the war, notably the Austen Mk1 and Owen SMGs of Australia, the Danish Madsen, and the Italian Beretta 38A. The only exception would be the Japanese, who did not produce or use a submachine gun in any significant numbers, though they did purchase a small number of Swiss-made MP28/II SMGs before WWII began.

The Cold War

The Cold War brought on yet more submachine gun designs, spurred on by the threat of more urban combat. Several of the most infamous submachine gun designs in history were developed during this time. One even sports a name that is nearly synonymous with the word "gun".


Uzi

Upon the founding of Israel in 1948, fighting seemed to have started almost immediately. Because of trade restrictions, the Israeli Defense Force found need for a locally produced submachine gun. The harsh environment of the desert required a particularly robust design. Many minds were put to the task, but the vision of Uzi Gal was the one that was finally accepted. The Uzi began production in 1954 and has since become one of the most widely recognizable firearms ever developed. It was put into service by many countries and produced under license in Europe by Fabrique Nationale. It is still manufactured today.

Another extremely popular design surfaced in West Germany ten years later. As part of Project 54, a development for the West German Border Guard, Heckler & Koch scaled down their G3 automatic rifle to accept the military 9mm pistol cartridge. The result was accepted by the Bundeswehr in 1964 as the Maschinenpistole 5, or MP5. Probably one of the more significant differences between the MP5 and the vast majority of previous submachine gun designs is that it fires from a closed bolt. This tends to make single shots or the first round of a burst much more accurate because the bolt's mass does not shift and thus throw off aim fractions of a second prior to firing a shot. The MP5 is also modular in design so that it can be made to suit particular mission requirements easily.

Yet another submachine gun, apparently more popular with terrorists than anyone else, is the Czech vz61, popularly known as the "Skorpion". The Skorpion is not much larger than a pistol, though what it lacks in power (.32 ACP) it makes up for in its small size. The Skorpion has been used extensively by terrorists during a number of well-publicized acts from the late 1960s to the early 1980s.

Terrorism


Heckler & Koch MP5A3

Countless acts of terrorism occurred during the 1970s, reaching global scale when members of a militant Palestinian group called Black September took a number of Israeli athletes hostage during the Munich Olympics in 1972. Up to that time, no task force had been created to deal specifically with terrorist threats. Police forces were unequipped and unprepared for the eventuality. The rescue operation ended in disaster, with all hostages killed, five of eight terrorist dead and one policeman killed.

Immediately after the Munich incident, the West German federal police force created Grenzshutzgruppe-9 (GSG-9), a section of the Border Guard, that would be trained to deal specifically with terrorist threats. The British government delegated anti-terrorist activities to the Special Air Service (SAS), who had developed some experience dealing with hostage situations and terrorist actions in Northern Ireland. The two agencies cross-trained with each other, building a knowledge base unequaled anywhere else in the world.

One of the pieces of equipment to find commonality between these agencies was the MP5 submachine gun. It served both agencies extremely well through missions including the Lufthansa hijacking at Mogadishu, Somalia on 11 October 1977 and the Iranian Embassy at Prince's Gate, London on 5 May 1980. The SAS has been involved in training many of the world's anti-terrorist organizations, including the US Army 1st Special Forces Operational Detachment - Delta (Combat Applications Group) and US Navy SEAL Team Six (Development Group), all of which use the MP5 as their standard submachine gun. It would seem that wherever the SAS goes, the MP5 is not far behind.

If there is any fault with the MP5, it may be that manufacturing technology has outpaced its design and there are now less expensive ways to produce a very good submachine gun. For that reason, Heckler & Koch introduced the straight-blowback, polymer-framed UMP in the late 1990s. Designed expressly for the North American market, the UMP was initially chambered for the .45 ACP cartridge.

The Next Step

The proliferation of body armor around the world appears to be spelling an end for the conventional submachine gun. The pistol cartridges normally used in submachine guns generally lack the ability to penetrate most forms of body armor. To address this threat, major firearm manufacturers have begun producing a class of firearm, used in the submachine gun role, designed around a low-recoiling load that has the ability to penetrate body armor at ranges out to 200 meters.


Heckler & Koch MP7 PDW

These weapons, commonly referred to as *Personal Defense Weapons*, accomplish this by using what is essentially a scaled-down rifle cartridge with a bullet made at least partially out of a hardened material, such as steel. The bullet is very small and thus very light, requiring less energy to push it from the muzzle at a relatively high velocity (2300-2400 fps). A substantial increase in velocity generates a lot of kinetic energy for the small projectile, and the small size of the bullet focuses that energy onto a very small area. The steel construction of the bullet resists deformation as it contacts body armor. In this way the body armor is defeated.

However, there are no free lunches. While these ballistic properties tend to help penetrate body armor, reducing the mass of the bullet tends to reduce the potential size of a wound cavity as well, meaning that a single shot to center mass is generally less likely to damage enough tissue to stop an attacker quickly. However, delivering *some* injury through body armor is better than delivering none at all. Also, the very low recoil generated allows more efficient use of full automatic fire, so the concept is a viable solution from that point of view.

Many organizations that remain unimpressed by the performance of Personal Defense Weapons have opted instead to accept more conventional carbines, such as the Colt Commando, M4, HK G36C or similar abbreviated rifles in the submachine gun role. The 5.56x45mm NATO cartridge retains the ability to defeat most body armor while delivering a more destructive terminal effect than would otherwise be available. This comes at the cost of a weapon that is slightly larger and louder than a conventional submachine gun.

Submachine Gun Performance ^

Description (Ballistics)	Weight (lbs)	Barrel (in)	Cartridge	Capacity	ROF
Bergmann MP18/I	9.25	7.75	9mm Para	32	400
Thompson M1	10.62	10.5	.45 ACP	30	700
Erma MP40	8.75	9.75	9mm Para	32	500
USSR PPS-42	6.5	10.75	7.62x25mm	35	700
Sten Mk2	6.5	7.75	9mm Para	32	550
Uzi	8.15	10.23	9mm Para	32	600
Heckler & Koch MP5A2	5.62	8.86	9mm Para	30	800
Ceska Zbrojovka vz61 "Skorpion"	2.9	4.52	.32 ACP	15	600
Fabrique Nationale P90	5.9	10.35	5.7x28mm	50	900
Heckler & Koch MP7 PDW	3.3	7.09	4.6x30mm	20/40	950

Shotguns

AET
- Neostead

Benelli
- M1 Tactical/Entry
- M3 Convertible
- M4 Super 90 (M1014)
- Nova Slug Gun

FABARM
- FP6/Entry
- Tactical

Franchi
- SPAS-15

Izhmash
- Saiga 12K

IGA
- Coach Gun

Mark Three
- Jackhammer

Mossberg
- Model 590
- Model 9200A1

Assault Rifle History, Applications and Performance

"It is well that war is so terrible, lest we should grow too fond of it."
- Robert E. Lee, Battle of Fredricksburg, 13 December 1862


MP43/StG44 *Sturmgewehr*, the first assault rifle (1943).

It can be argued that Vladimir Fedrov invented the assault rifle in 1916 after the Russo-Japanese War, using commandeered 6.5x50SRmm Arisaka rifle ammunition. However, very few examples of his design were manufactured. The resulting attempt at putting this type of rifle in service at that time can also be considered abortive, not only because of a lack of interest in the design, but also because of the October Revolution of 1917. At any rate, Federov's "avtomat" was well ahead of its time.

What is known as the "assault rifle" has only come into regular military use over the last sixty years, a very short span of time considering the history of warfare. The *sturmgewehr* (the German word for *assault rifle*), as it is rumored Hitler personally christened it, was developed during World War Two, in recognition of battlefield facts.

Prior to WWII, rifles for the infantryman had been designed for use on the open battlefield and were capable of good accuracy out to a range of 800-1,000 meters. However, by WWII, modern battlefield and military tactics had evolved away from engagements over open tracts of land and had migrated to combat within urban environments. As such, it was discovered that the average rifle infantryman during WWII rarely if ever engaged targets beyond a distance of 300 meters. Thus, the heavy-recoiling cartridges and slow-loading bolt-action rifles of the time weren't particularly suited for the majority of modern infantry combat.


Bergmann MP18/I, the first true submachine gun (1916).

While the Germans were very aware of the submachine gun prior to WWII (Hugo Schmeisser practically invented the concept with the MP18/I), they learned an expensive lesson on the eastern front from the Russians, who in turn learned it from the Finns. Small, fully-automatic, shoulder-fired firearms were very effective combat tools in urban environments where engagements occur most often at very close range. However, submachine guns were limited by the pistol ammunition that they fired and were rarely effective beyond about 100 meters.

Thus, the development of the *sturmgewehr* began, with the intention of melding two concepts into one weapon. The first thing to change was the ammunition. What was created is now known as an "intermediate-power" rifle cartridge. In terms of ballistic performance, this cartridge fits between the 9mm Parabellum pistol cartridge used in submachine guns and the "full-power" 7.92x57mm rifle cartridge used in infantry rifles. The standard 7.92x57mm rifle cartridge was cut back to 33mm and bullet weight was reduced from 154 to 125 grains, creating the 7.92x33mm *Kurz* or *short* cartridge. This cartridge was still effective to 300-400 meters, but generated much less recoil. Using this ammunition in combination with a selector mechanism, the sturmgewehr could be used in either the traditional rifle role or the submachine gun role. In the rifle role, targets could be engaged at long range with single shots. Should the infantryman find himself in close contact with the opposition, he could then select automatic fire and use the weapon as he would a submachine gun.

The Russians were the first to come into contact with the *sturmgewehr* and its ruthless efficiency. They immediately made plans to capitalize on the concept (as far as communists can be considered to do such a thing) after capturing examples in several places along the front. The concept of the assault rifle eventually made its way to a young Russian tank commander on convalescent leave in Kazakhstan. His name was Mikhail Kalashnikov.

Battle Rifles

The term *battle rifle* is often used to cover a variety of rifle types, all of which are simply rifles that were designed to be taken into battle. The first to encounter the term were bolt-action rifles designed around the turn of the twentieth century that were slightly shorter than the then-accepted norm. They fired what are now termed "full-power" rifle cartridges and were effective out to a range of 800-1,000 meters. The Mauser 98, Lee-Enfield SMLE, and Springfield M1903, among others, fit into this group.


M1 Garand, US battle rifle (1936-1957).

In the mid-to-late 1930s, semi-automatic rifles were developed to fire these full-power rifle cartridges. The M1 Garand became standard issue in the US Army, and the Tokarev SVT found use in smaller numbers in the Russian military. These are also often referred to as battle rifles.

After WWII, the North Atlantic Treaty Organization (NATO) was formed. Member countries focused some attention upon standardization of many things for logistical purposes. One of the standards to be drafted was that of a rifle cartridge and possibly a rifle to fire it. Several member nations tried their hand at it and some of the designs, particularly Great Britain's EM2 rifle, were far in advance of the times. However, the US, using its political clout, managed to persuade NATO to accept a slightly shortened but no less powerful version of their .30-06 rifle cartridge, which was given the designation 7.62x51mm NATO.


The Springfield M-14 (1957-1964), now a sniper support weapon.

Many of the rifle designs in progress at the time were were developed using the lessons learned from the *sturmgewehr*, incorporating a selector mechanism for semi- and full-automatic fire. However, the ammunition that was standardized did not fall into the assault rifle concept. The 7.62x51mm was still a full-power rifle cartridge, designed to be effective at relatively long range. Some rifles were re-worked to accept the 7.62x51mm cartridge while others, including the EM2, could not be redesigned without incurring major costs. Users of Fabrique Nationale's FAL, the US M-14 (pictured at right), and upstart company Heckler & Koch's G3 found in short order that full-automatic fire with such a powerful cartridge was very difficult to master and inaccurate even at close range due to the high level of recoil generated by the cartridge. Because of this, the more modern, fully-automatic incarnation of the battle rifle has largely been phased out of the military service of first-world nations in favor of true assault rifles.

Carbines

The common definition of the word *carbine* is simply, "a lightweight rifle with a short barrel." With that in mind, the term has been in use for quite a while, in regard to rifle designs that have been abbreviated in any manner of ways. The term has been used to describe a version of the Springfield "Trapdoor" single-shot rifle, which was developed to suit the use of horse-mounted cavalry. The Mauser G98 became the Karabiner 98K while the US developed the M1 Carbine during WWII. The list goes on.


M16A2 (1982) and M4 Carbine (1994).

Today, the term "carbine" is more commonly used to describe a compact assault rifle. A good example of this is the carbine version of the M16A2 assault rifle, designated by the US military as the M4 carbine. It differs from the M16A2 by including a 14.5-inch barrel (shortened from 20 inches) and a retractable shoulder stock, in order to make the weapon more compact. The same can be said for the AKS-74U, which is a compact version of the Russian AK-74 assault rifle that includes a 8.26-inch barrel (shortened from 15.75 inches) and a folding shoulder stock.

The carbine is usually reserved for close range work (MOUT and CQB environments). In recent years, many police SWAT, hostage rescue, and counter-terrorism teams have begun to transition away from the use of the submachine gun to the carbine, mostly because of the proliferation of body armor and the higher penetration potential that rifle cartridges offer over pistol cartridges.

For lack of a better term, marketeers over the years have hastened to attach the word "carbine" to long-barreled, semi-automatic firearms that fire pistol cartridges. Depending on who you talk to, this may or may not be a proper use of the term.

Battle/Assault Rifle Performance ^

Description (Ballistics)	Weight (lbs)	Cartridge	Capacity	ROF
Mauser StG44 "Sturmgewehr"	11.25	7.92x33mm	30	500
Soviet AK-47	9.5	7.62x39mm	30	600
Fabrique Nationale FAL	9.8	7.62x51mm	20	600
US Springfield M-14	8.55	7.62x51mm	20	750
Heckler & Koch G3	9.7	7.62x51mm	20	600
Colt M16A1	6.3	5.56x45mm	30	800
Soviet AK-74	8.5	5.45x39mm	30	600
Fabrique Nationale M16A2	8.0	5.56x45mm	30	750
Colt M4 Carbine	5.6	5.56x45mm	30	850
Heckler & Koch G11K2	8.4	4.73x33mm	50	400/2200

Sport Rifles

back

Browning

- A-Bolt Eclipse M1000
- A-Bolt Hunter Series
- A-Bolt Stalker Series

Kel-Tec

- SUB-2000

Marlin

- Model 1894
- Model 1895

Remington

- Model 700
- Model 700 Sendero
- Model 710

Ruger

- Mini-14/Mini Thirty

Steyr

- Scout

Winchester

- Model 70 Classic
- Model 70 Stealth
- Model 94

Sniper Rifles

◀ back

AMP Technical Services

- DSR-1

Armalite

- AR-10(T)

Barrett

- Model 98

Fabrique Nationale (DS Arms)

- FAL Bull

Heckler & Koch

- G3 SG/1
- HK94 SG/1
- MSG-90
- PSG/1 Marksman's Rifle

Izhmash

- SVD

Knight's Armament Corporation

- SR-25 Series

Springfield Armory

- M21 Tactical Rifle

Steyr

- Steyr Mannlicher SSG

UCAS

- M54 S/SWS

Anti-Matériel Rifles

Machine Guns

back

Ares Defense Systems

- Shrike

Fabrique Nationale

- MAG (M240)
- Minimi (M249)

Israeli Military Industries

- Negev

Heckler & Koch

- HK21
- HK23
- MG43

Saco Defense/PCC Ordnance

- M60 Series

Grenade Launchers

Colt

- M79
- M203

Heckler & Koch

- HK69A1

Sandoval Military Systems

- M443 20mm

Weapon Class Ranges

◀ back

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Hold-out	0-3	4-8	9-15	16-25
Light Pistol	0-5	6-15	16-30	31-50
Medium Pistol	0-5	6-20	21-40	41-60
Heavy Pistol	0-10	11-20	21-50	51-100
Shotgun	0-10	11-20	21-50	51-100
Submachine Gun	0-10	11-40	41-80	81-150
Light Carbine	0-20	21-50	51-100	101-200
Carbine	0-40	41-150	151-250	251-350
Grenade Launcher	5-50	51-150	151-250	251-400
Assault Rifle	0-50	51-150	151-350	351-550
Sport Rifle	0-100	101-250	251-500	501-750
Sniper Rifle	0-150	151-300	301-700	701-1000
Heavy Sniper Rifle	0-150	151-350	351-900	901-1800
LMG	0-75	76-200	201-400	401-800
MMG	0-80	81-250	251-750	751-1200
HMG	0-80	81-250	251-800	801-1500
Anti-Materiel Rifle	0-100	101-300	301-900	901-2400

Ranges for Velocity-Controlled Suppressed Firearms

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Light Pistol	0-5	6-15	16-25	25-40
Medium Pistol	0-5	6-20	21-35	36-50
Heavy Pistol	0-5	11-20	21-35	36-70
Submachine Gun	0-10	11-40	41-60	61-100
Light Carbine	0-20	21-50	51-80	81-150
Carbine	0-40	41-70	71-100	101-200
Shotgun	0-5	6-15	16-25	26-65
Assault Rifle	0-50	51-75	76-150	151-300
Sport Rifle	0-65	66-100	101-250	251-400
Sniper Rifle	0-75	76-150	151-350	351-500

Bigger. Better. Faster.

Let's face it. A gun right out of the box will usually get the job done. But maybe it could do that job a lot better. If only someone made...

Odds are, someone does make it. And this is where you'll find it.

Le menú to your left.

Bipods and Tripods

Bipods

Bipods are two-legged braces that extend downward from a firearm, supporting the barrel of the weapon and allowing the user to fire from a more stable sitting or prone position without having to support the firearm with their free hand.

There are generally two lengths of bipod legs, the short type (9-13") designed for prone or benchrest shooting, and the long type (13-27") designed for sitting or kneeling. Obviously, the short bipod is the more compact of the two, and more useful for tactical applications. Long bipods are commonly used for hunting applications.

There are several makes of bipods, but the two most popular come from Harris Engineering (pictured) and Versa-Pod.

The Harris bipod attaches to a sling swivel on the under side of the rifle's forearm. Adapters for M1913 Picatinny Rail mounts are available. The legs are spring-loaded, thus only a quick touch is needed to deploy each leg. Legs are stowed forward of the mount. (One Simple Action is required to stow or deploy both legs.)

The Versa-Pod uses a proprietary mounting adapter with a post parallel to the bore axis onto which the bipod legs can be attached or detached as a unit. Different adapters are available for many different mounting platforms such as sling swivels, M1913 rails, Anschutz rails, etc. Using the Versa-Pod, the rifle can be panned, tilted or canted without any special adapters. (One Complex Action is required to attach or remove the bipod from its mounting adapter.)

Bipods do not provide any form of recoil compensation unless they are braced by heavy objects such as sandbags or rocks or the like. If a bipod is braced, recoil compensation may be applied at GM discretion.

Description	Mount	Conceal	Wt	Avail	Cost
Harris Bipod (Short)	Under	-1	0.75	2/24 hrs	65 ¥
Harris Bipod (Long)	Under	-2	1	2/24 hrs	80 ¥
VersaPod Bipod (Short)	Under	-1/-2	0.5	2/24 hrs	65 ¥
VersaPod Bipod (Long)	Under	-1/-3	0.75	2/24 hrs	70 ¥

Tripods

Tripods are part of a crew-served weapon, designed to physically support said weapon in a static emplacement. They are designed to provide a stable base of fire, which usually means that they have to be somewhat heavy pieces of equipment. That prevents the crew from moving quickly or easily. Thus, when a tripod is involved, it usually means that the people behind the weapon attached to it aren't planning on going anywhere soon. This makes the weapon a defensive emplacement. The crew consists of a gunner and a loader/spotter, who assists the gunner.

Tripods are usually designed to mount a specific weapon by means of a pintle, which physically connects the weapon to the tripod legs. Tripods allow a mounted weapon to traverse and elevate over a wide field of fire with the intent of area suppression. Fine control of the weapon is not necessary for this type of application.

However, some tripods include a two-point mount; the pintle mount, forward around the point of balance, and a traversing and elevating mechanism, mounted around the rear of the weapon. The T&E mechanism provides stability and fine control over a restricted field of fire. With the T&E mechanism in place, the field of fire is limited to about 6 degrees of traverse and 25 degrees of elevation. The T&E mechanism can be removed from the tripod in order to allow the gunner to traverse and elevate over a much wider field of fire, traversing over perhaps 120 degrees and elevating or depressing over 60 degrees.

There are two types of tripods.

Light tripods are designed for lighter weapons, such as light machine guns and medium machine guns and some automatic grenade launchers. They are not concealable, but they are lighter and easier to move than heavy tripods. Apply the equivalent of **4 points of recoil compensation** to LMGs, MMGs, or AGLs attached to light tripods.

Heavy tripods are designed for heavy weapons like automatic grenade launchers and heavy machine guns. Heavy tripods are not concealable, but they do provide the equivalent of **6 points of recoil compensation** for AGLs or HMGs attachged to them.

If a **T&E mechanism** is used, apply the equivalent of **8 points of recoil compensation** to either type of tripod.

Tripods require **two Complex Actions** to set up and must be used from a sitting or prone position. If a traversing and elevating mechanism is used, the weapon may take a very long time to set up and zero to a pre-determined beaten zone. The time needed to set the T&E mechanism depends upon the situation. GM discretion is recommended. One Complex Action is required to remove it.

Description	Mount	Conceal	Wt	Avail	Cost
Light Tripod (AGL, LMG, MMG)	Under	NA	4	10/12 hrs	450 ¥
Heavy Tripod (AGL, HMG)	Under	NA	8	10/12 hrs	600 ¥
Traversing and Elevating Mechanism	NA	NA	2	As Tripod	+150 ¥

Accessories

Bigger. Better. Faster.

- Bipods/Tripods
- Compensators
- Holsters
- Magazines
- Mounting Devices
- Sighting Devices
- Silencers and Suppressors
- Stocks and Recoil Pads
- Targeting Devices

For Specific Firearms

- Colt M-23 Components
- Desert Eagle Components
- Glock Components
- Heckler & Koch MP5
- Heckler & Koch P7
- Heckler & Koch USP
- Heckler & Koch Trigger Groups

Suppressors

Overview

While easy to use, the canon rules for silencers and sound suppressors may leave something to be desired. For example, there are several different types of suppressors out there, some may be very inexpensive to make yet don't perform all that well, while others are very expensive and produce state-of-the-art performance. Some may be very small, providing just enough of a reduction in sound pressure to keep the operator from incurring any hearing damage, while others may be designed to sustain the abuse of fully automatic fire.

Suppressors are sorted here by weapon class. Several different types may be available per weapon class. While the names belong to real suppressors, they are used here in an incidental fashion and are only meant to reflect a class standard and to give players a name to refer to them by.

For more detailed information on how firearm sound suppression works, please refer to the Suppression file located in the Basics section of this site.

The following stats may need some explanation.

Recoil Booster (RB): Some suppressors are too heavy to allow some recoil-operated pistols (particularly those using the extremely popular Browning tipping barrel form of short recoil operation) to cycle reliably without what is known as a "Recoil Booster", aka "Recoil Regulator", "Nielsen Device" or "Linear Inertial Decoupler". Suppressors listed with an (RB) include this device. When engaged, the Recoil Booster counteracts the weight of the suppressor during recoil, temporarily relieving the barrel of the extra mass attached to it. This allows the pistol to cycle reliably. However, if the recoil booster is used on a pistol that does not need it (read: any fixed-barrel form of operation), damage to the firearm and/or suppressor could result. Recoil Boosters can be turned on or off through the use of a Simple Action.

Caliber: This value represents the caliber of bullet the suppressor is designed to work with. More specifically, it represents the cartridge with which a given suppressor is designed to be used and consequently, the volume of propellant gas the suppressor is designed to neutralize.

> Less powerful cartridges of the same or smaller caliber may be used with these suppressors without penalty as long as the base Power Rating. For example, any "9mm P" suppressor can be used with any 9mm pistol cartridge (9mm Para, .380 Auto, 9mm Makarov, 9x21mm, 9x23mm, .357 SIG, etc...). Suppressors marked ".40 S&W" can be used with .357 SIG, 10mm Auto ammunition and so on.
>
> For pistol suppressors, if the cartridge used exceeds the base caliber's Power Rating by more than +1, apply a -1 penalty to the suppressor's effect. For example, using a "9mm P" suppressor (base Power Rating is 7) with a pistol chambered in .357 SIG or 9x23mm Winchester (base Power Rating is 9) results in a maximum effectiveness of +2/+3. This rule does not apply to increased Power Ratings derived from specialized bullet types such as Hollowpoint.
>
> For all other suppressors, if the cartridge used exceeds the base caliber's Power Rating by more than +3, apply a -1 penalty to the suppressor's effect.
>
> In either case, the suppressor's service life will be reduced if continually used in this manner.

Method: There are four basic suppressor design methods.

> A **Dry** suppressor uses a series of expansion chambers and permanent metal baffles that reduce gas volume, expansion and forward motion. Simply attach the can to the weapon's muzzle and you're good to go.
>
> The Wipe and Mesh (**WM**) system is an inexpensive design. It uses a series of expansion chambers filled with a wire mesh, designed to disrupt the motion of gases. Wipes work like baffles and are made of a flexible material such as polyurethane or neoprene through which the bullet passes. These elements degrade as the suppressor is used (-1 every 20 shots) and need to be replaced after about 50 rounds. Because the bullet comes in physical contact with the wipes, this type of suppressor cannot be used in conjunction with expanding ammunition. Reduce range 35% (x0.65).
>
> A Wet Technology (**Wet**) suppressor is mechanically similar to a dry suppressor, the difference being that it is also designed to house a few CCs of water. Water helps absorb heat energy from the propellant gases, making the suppressor quieter. However, a wet suppressor will cause a visual signature when water is vaporized and pushed through the muzzle. Performance degrades as water is forced from the suppressor (-1 every 30 shots, max -1). Gas-operated firearms do not work well with wet suppressors as the water tends to mix with powder residue and clog the weapon's gas system (GM discretion). Water may be added on the fly (even saliva may be used), through the suppressor's muzzle.
>
> An Artificial Environment (**AE**) suppressor includes a chamber near the barrel's muzzle filled with a light lubricating grease. The grease functions in a manner similar to the water in a wet suppressor, absorbing the heat of propellant gases. No visual signature occurs. Performance degrades slightly as the grease evaporates (-1 every 50 shots, max -2). The suppressor must be detached before grease can be added.

Mount: There are two basic ways to mount a suppressor to a weapon. Most require an extended barrel that has mounting surfaces machined directly into it. However, some weapons include a barrel shroud onto which the suppressor is designed to mount (the MP9 for example). Most pistols will require a new barrel that includes a mount.

> A **Thread** mount is the most common type of suppressor mount. It is used to screw the suppressor onto the weapon's barrel. If the threads twist in the same direction as the barrel's rifling, the suppressor will eventually come loose as the mount absorbs heat and expands while the barrel torques as a bullet moves through its rifling. Counter-threading cures this problem. Most pistols will use this type of mount because it does not interfere with their disassembly procedures. **MAC** and **UZI** mounts are particular types of thread mounts that are only found on those weapons (MAC mount will work on the Ingram Smartgun and Warrior 10). A thread mount requires one Complex Action to attach or detach the suppressor from the weapon.
>
> The **Quick Detach** or **Fast Attach** mount is a mount that is designed to allow very fast attachment or detachment from the host weapon. All QD mounts require one Simple Action to attach or detach the suppressor from the weapon. The following are examples of Quick Detach mounts.
>
> > A **Snap** mount is a type of quick detach mount consisting of two vertical divets cut into the weapon's extended barrel, onto which the suppressor locks. The suppressor simply slides over the barrel and is locked on by a lever. This type of mount is one of the sturdiest, but is almost exclusive to pistols because it does not interefere with their disassembly procedures.
> >
> > The **3-Lug** mount was developed by SCRC for the Heckler & Koch MP5 submachine gun. The suppressor is pushed over three sequential lugs and rotated 60 degrees. A spring inside the suppressor then pushes the suppressor forward, locking it onto the lugs.
> >
> > Other types of Quick Detach (**QD**) mounts exist, mostly for use on assault rifles. These mounts are usually designed to interface with a specially designed flash suppressor or other mounting interface attached to a barrel's muzzle.

Effect: Displays the value of the modifier that should be applied to Perception Tests when the suppressor is attached to a weapon of the class it is designed for. The effectiveness of some suppressors degrades as elements within the suppressor decompose. (See Method.) An entry with two values (+3/+4) indicates that the suppressor is a "wet technology" design. The first value represents its effectiveness while dry, the second represents its effectiveness when water is added.

See the Rules for Suppression for more information.

Pistol	Caliber	DC	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
WM-22	.22 LR	5L	WM	Thread	-2	+2	0.4	2/24 hrs	50
SOTA-22	.22 LR	5L	Dry	Thread	-2	+4	0.18	6/72 hrs	325
WM-38	.380 Auto	6L	WM	Thread	-2	+2	0.4	2/24 hrs	50
SOTA-38	.380 Auto	6L	Wet	Thread	-2	+4/+5	0.06	6/72 hrs	550
SOTA-38S	.380 Auto	6L	Wet	Snap	-2	+4/+5	0.2	6/72 hrs	700
WM-945	9P/40/45	8M	Wet	Thread	-2	+3/+4	0.28	6/72 hrs	695
SOTA-9S	9mm P		Wet	Snap	-2	+3/+4	0.2	6/72 hrs	695
Entry	.40 S&W		Wet	Thread	-2	+3/+4	0.2	6/72 hrs	595
Eclipse	.45 ACP		Wet	Thread	-2	+3/+4	0.3	6/72 hrs	595
SOTA-45	.45 ACP		Wet	Thread	-2	+3/+4	0.3	6/72 hrs	1,470

SMG	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Avenger	9mm P	Wet	Uzi	-2	+2/+3	0.39	6/36 hrs	595
CAC9	9mm P	Wet	MAC	-2	+2/+3	0.56	6/36 hrs	300
Defender (UMP)	9P/40/45	Wet	QD	-1	+2/+4	0.34	6/36 hrs	695
Navy	9mm P	Wet	Thread	-1	+2/+4	0.21	6/36 hrs	595
Raptor	40/10mm	Wet	3-Lug	-1	+2/+4	0.34	6/36 hrs	495
Striker 2	9mm P	Wet	3-Lug	-1	+2/+4	0.23	6/36 hrs	650

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Cyclone	7.62x51mm	Wet	Thread	-1	+3/+4	0.89	6/36 hrs	650
G36-SD	5.56mm	Dry	Thread	-1	+3	0.54	6/36 hrs	700
M4-2000	5.56mm	Dry	QD	-1	+3	0.66	6/36 hrs	650
M47-2000	7.62x39mm	Dry	QD	-1	+3	0.66	6/36 hrs	650
Ranger	5.56mm	Dry	Thread	-1	+3	0.52	6/36 hrs	550

Manufacturers

There are several firearm suppressor manufacturers to be found around the world. The following is a somewhat abbreviated list of those manufacturers. This information may prove useful for availability purposes depending on where your team is running.

Company	Location
Advanced Armament Corporation (AAC)	Lilburn, Georgia CAS
Arms Tech	Phoenix, PCC
AWC Systems Technology (Special Technologies Group, Inc)	New River, PCC
Brügger & Thomet AG	Thun, Switzerland
BR-Toute (Reflex Suppressors)	Joensuu, Finland
Capital City Firearms (CCF)	Richmond, Virginia CAS
DVC Armaments (GG&G, Inc)	Tucson, PCC
Gemtech (Gemini Technologies, Inc)	Boise, Sioux Nation
Knight's Armament Company (KAC)	Vero Beach, Florida CAS
LaFrance Specialties	San Diego, Aztlan
OPS Inc.	Shingletown, CFS
Percy Engineering Services Ltd. (PES)	Auckland, New Zealand
Sound Technology (Soundtech)	Pelham, Alabama CAS
SRT Arms	Tempe, PCC
Surefire Suppressors	Fountain Valley, CFS
Southeastern Weaponry Research (SWR)	Evans, Georgia CAS

Targeting Devices

Bigger. Better. Faster.

Smartlink Systems
Reflex Sights

Colt M23 Components

M22 Armorer's Kit

The M23 can be upgraded to an M22A2 rifle in a matter of minutes with the M22 Armorer's Kit. The kit includes an M22 cowling assembly, 20" (508mm) barrel with flash suppressor/muzzle brake (Gas Vent 2), the M203A4 grenade launcher, and the Trjicon ACOG VI 4x scope (Level 2 magnification), which attaches to the rifle's carrying handle wihout obscuring the weapon's flip-up iron sights.

Gunsmithing Test is required, Target Number 4. Base time is 30 minutes.

Description	Wt	Conceal	Cost
M22 Armorer's Kit	+1.25 kg	Conceal Rating is NA with kit.	+980 ¥

Retractable Stock Assembly

A four-position retractable stock system is available for the M23.

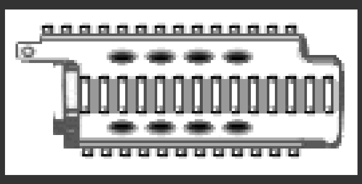
With this system, the M23's two-piece reinforced polymer upper receiver/stock is replaced by a one-piece flat top upper with M1913 Picatinny Rail and a removable 4-position retractable stock. With this system in place, the M23 conforms closer to the older M16 receiver type, allowing M16 stocks to be mounted to the rifle.

Parts included: Steel-reinforced polymer upper receiver with M1913 Picatinny rail, four-position retractable stock, removable carrying handle with adjustable rear sight, mounting plate, buffer tube, carbine-length buffer, buffer spring.

This system is part of the M23C Carbine.

Description	Wt	Conceal	Cost
Retractable Stock Assembly	+0.2 kg	+1 Conceal when retracted	+250 ¥
Retractable Stock only	0.5 kg	+1 Conceal when retracted	+55 ¥

Rail Adapter System



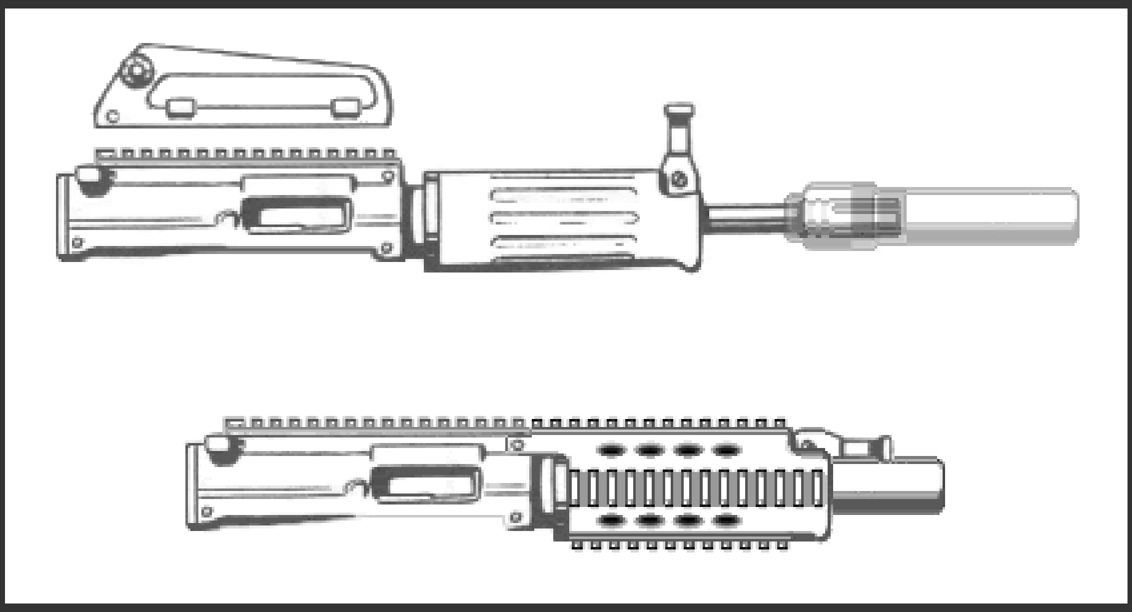
The Rail Adapter System (RAS) from Knight's Manufacturing Company has been a mainstay accessory for many special forces teams since it was originally developed for the M4 carbine many years ago. The RAS is also available for the mid-length M23 handguard or the full-length M22 handguard.

The M23 RAS replaces the standard handguard with a two-piece free-floating unit that includes four "Picatinny" rails, one on each side of the heatshield; top, bottom, left and right sides. This can be used to mount a plethora of devices such as laser designators, forward handgrips, whitelights, reflex sight in a forward position, etc...

The RAS is part of the M7 Modular Carbine Weapon System (MCWS).

Description	Wt	Conceal	Cost
Rail Adapter System (M22)	+0.3 kg	-	350 ¥
Rail Adapter System (M23)	+0.2 kg	-	300 ¥
Rail Adapter System (M23A2)	Negligible	-	250 ¥

.300 Whisper Upper Receivers



The standard M23 assault rifle is chambered for the venerable 5.56x45mm NATO cartridge. Upper receivers are available chambered for the multi-purpose .300 Whisper cartridge. The .300 Whisper is capable of impressive subsonic preformance, while retaining characteristics of the 5.56mm cartridge when using saboted loads.

Two upper receivers are available.

The first consists a complete flat-top upper receiver with M1913 Picatinny Rail and a removable carrying handle, a 12.6" chrome-lined 4140 barrel with 1/8" right hand twist, and a flash suppressor designed to quickly mount a sound suppressor for use with subsonic loads. If armor piercing loads are necessary, the suppressor can simply be removed and supersonic loads may be utilized.

The second upper is also a complete flat-top. It includes a 7.5" chrome-lined 4140 barrel with 1/8" right hand twist, a highly effective integral supressor and the Rail Adapter System. Ideal for entry teams, the .300 Whisper suppressed upper is designed to fire subsonic loads only.

A retractable stock can be included with each upper at a nominal fee.

Description	Wt	Conceal	Cost
.300 Whisper Upper Receiver w/suppressor mount	Negligible	-	550 ¥
.300 Whisper Upper Receiver w/integral suppressor	+0.4kg	-	1,250 ¥
either above upper with Retractable Stock	-	-	+40 ¥

Desert Eagle Components

Extended Barrels

A great addition for long-range silhouette shooting or hunting, each caliber of the Desert Eagle pistol has a replaceable 10" barrel available.

Swap the standard 6" barrel in a matter of seconds, and you have a very accurate long range pistol at your disposal.

Description	Wt	Con	Cost
10" Extended Barrel, .357 Magnum	+0.2kg	-1	400 ¥
Range: Short- 0-10; Medium- 11-40; Long- 41-100; Extreme- 101-200			

Description	Wt	Con	Cost
10" Extended Barrel, .44 Magnum	+0.2kg	-1	400 ¥
Range: Short- 0-15; Medium- 16-50; Long- 51-120; Extreme- 121-250			

Description	Wt	Con	Cost
10" Extended Barrel, .50 Action Express	+0.2kg	-1	400 ¥
Range: Short- 0-10; Medium- 11-40; Long- 41-100; Extreme- 101-200			

Description	Wt	Con	Cost
10" Extended Barrel, .440 CorBon Magnum	+0.2kg	-1	400 ¥
Range: Short- 0-15; Medium- 16-60; Long- 61-150; Extreme- 151-300			

Scope Rings

Specially designed see-through scope rings let you continue to use your fixed sights, too. Rear ring is angled back to prevent scope from being affected by muzzle blast. Choose from a plethora of custom finishes to complement the finish of your scope and your pistol. No other scope mounts are required.

Description	Wt	Con	Cost
Ring mounts, 1", black	+0.1kg	-	30 ¥
Ring mounts, 1", gold	+0.1kg	-	190 ¥
Ring mounts, 1", polished chrome	+0.1kg	-	80 ¥
Ring mounts, 1", polished & blued	+0.1kg	-	80 ¥
Ring mounts, 1", satin nickel	+0.1kg	-	80 ¥
Ring mounts, 1", matte chrome	+0.1kg	-	80 ¥
Ring mounts, 1", bright nickel	+0.1kg	-	80 ¥
Ring mounts, 1", brushed chrome	+0.1kg	-	80 ¥
Ring mounts, 30mm, black	+0.1kg	-	35 ¥

Hogue Grips

Expertly crafted hardwood grips from Hogue are field-installable; no drilling or tapping required. Pau ferro (pronounced PAW FAIR-RO), which resembles fancy dark walnut, and goncalo alves (pronounced GON-KA-LO AL-VES) are available. Hand-polished with natural Carnauba wax. For Desert Eagles of any vintage or caliber.

Soft synthetic rubber grips have cobblestoned texture for secure hold. Both styles field-installable. Made exclusively for the Desert Eagle by Hogue Grips.

Description	Wt	Con	Cost
Pau ferro 1-piece Grip	-	-	80 ¥
Goncalo alves 1-piece Grip	-	-	80 ¥
Hogue rubber grips, 2-piece	+0.35kg	-1	50 ¥
Hogue rubber grips, 1-piece	+0.35kg	-1	50 ¥

Leupold Scopes and Sights

2x Extended Eye Relief Scopes

Improve your accuracy by adding a Leupold scope in one of three finishes to your Desert Eagle of any caliber and vintage. Optimum eye relief of 12-24 inches. Mounts with 1-inch see-through scope rings.

Description	Wt	Con	Cost
Leupold 2x EER, glossy black finish	+0.3kg	-1	200 ¥
Leupold 2x EER, silver finish	+0.3kg	-1	200 ¥
Level 1 magnification, optical.			

2.5 x 8 Extended Eye Relief Scopes

Create the ultimate handgun for hunting by adding one of these top-of-the-line Leupold scopes to your 10-inch-barreled Desert Eagle of any caliber and vintage. Optimum eye relief of 12-24 inches. (Do not use with 6" barrel.) Mounts with 1-inch see-through scope rings.

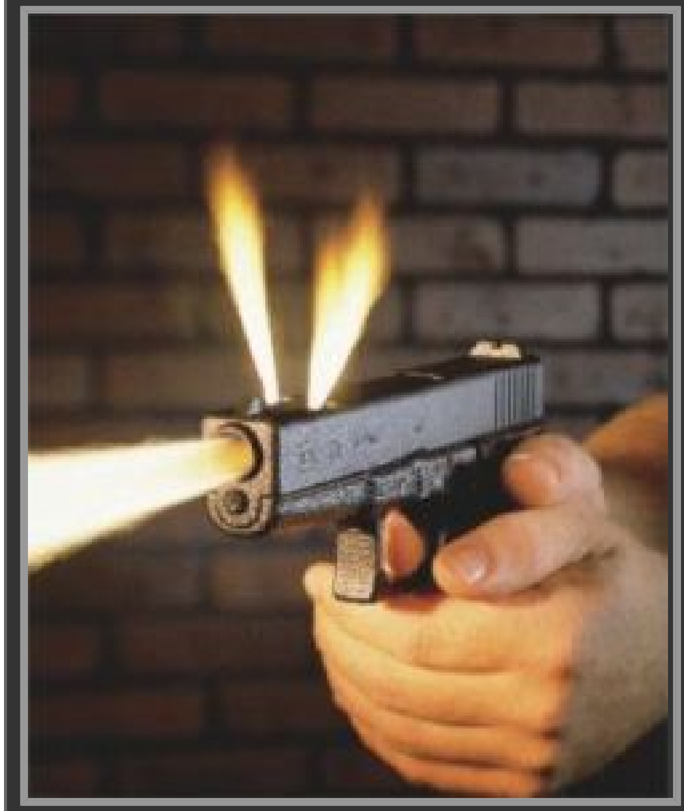
Description	Wt	Con	Cost
Leupold 2.5 x 8 EER, glossy black finish	+0.35kg	-1	450 ¥
Leupold 2.5 x 8 EER, silver finish	+0.35kg	-1	470 ¥
Level 1 magnification, optical.			

Electronic Dot Reflex Sight

Leupold Electronic Dot Reflex Sight, 4 MOA, with matte black finish, allows you to shoot with incredible accuracy. Suited for hunting and target shooting, this advanced electronic sight lets you keep both eyes open. Battery included. Comes with scope rings shown to fit all 6-inch or 10-inch barrels.

Description	Wt	Con	Cost
Leupold Electronic Dot Reflex Sight	+0.3kg	-1	400 ¥
-1 TN for firearms tests.			

"C" Compensated Variant



Although they are available in different frame sizes and calibers, these GLOCK pistols are similar in one respect: they all have ported barrels. Known collectively as the "C" models, these include the 17C, 19C, 20C, 21C, 22C, 23C, 24C, 31C, and 32C.

All these compensated models, except the GLOCK 24C, have the same features as their counterpart non-compensated service pistols except for the addition of the barrel ports that face out and exhaust through two vents cut into the top of each slide. The GLOCK 24C is the longslide competition pistol in .40 and here the four ports are placed on top of the barrel to vent through the open area at the top of the slide.

Shooters who are recoil sensitive will especially appreciate the GLOCK "C" models. They are also useful for young and beginning shooters.

Description	Wt	Conceal	Cost	Comments
"C" Variant	-	-	+150 ¥	Treat as Gas Vent 1

Extended Magazines and Floorplates

An extended 31-round magazine is available for use with all Glock models chambered for the 9mm Parabellum cartridge.

Floorplates designed to increase magazine capacity are available for all Glock magazines. +Floorplate offers +3 rounds for 9mm Para magazines, +2 rounds for .357 SIG, .40 S&W, and .10mm Auto magazines, and +1 round for .45 ACP magazines.

Description	Wt	Conceal	Cost	Comments
31-round High-Capacity Magazine (9mm Only)	+0.3kg loaded	-2	20 ¥	Street Index: 4
+Floorplate	Negligible	-	5 ¥	Street Index: 2

Fire Selector System, Glock (FSSG)

The Fire Selector System for Glock pistols is a specially constructed device that simply and quickly converts any Glock pistol into a fully controllable full auto weapon, yet still maintains semi-auto action by just a click of the FSSG.

Requiring minimal gunsmithing skills, the FSSG can be attached to ANY model Glock pistol, converting it for use in full automatic mode. Click here to see the FSSG in action.

Description	Wt	Conceal	Cost	Comments
Fire Selector System for Glock pistols	0.005 kg	-	350 ¥	Converts SA mode Glock pistols to SA/FA mode. Requires Firearms B/R test with TN of 4 to install. Base time is 10 minutes. Street Index: 4

Pistol Grip Cleaning Kits

Standard with all MP5 weapon systems, additional cleaning kits can be purchased. These kits house all the necessary tools and supplies to field strip and clean a single MP5 weapon multiple times. Each kit fits snugly into the pistol grip of the weapon.

Description	Wt	Conceal	Cost	Comments
MP5 Cleaning Kit	0.2	9	15 ¥	Not available with Navy trigger group.

Forearms / Foregrips

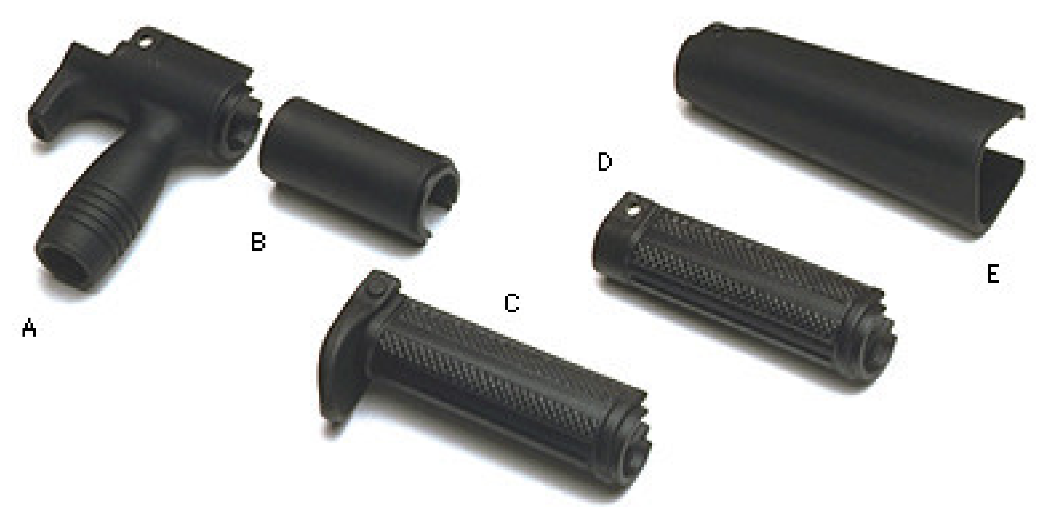
Many forearm options are available for the MP5 series weapon system.

All furniture is made from a high-temeperature impact-resistant polymer. Forearms can be replaced in less than 5 minutes with the use of one tool, which is provided.

The MP5K foregrip can be attached to any standard-length MP5 series weapon with the addition of a foregrip adapter.

Knight's Armament Company manufactures a Rail Adapter System for the MP5 submachine gun. Like all KAC RAS systems, it does not require the weapon to be permanently modified.

Three Picatinny rails are provided in the standard pack-out. Once installed, the rails are positioned along the sides and below the barrel. There is not a rail above the barrel due to the weapon's cocking piece location and operation. An optional modular top mount for scopes or other targeting devices can be attached to mounts in the two side rails. These RAS components will also fit the HK53.



A MP5K foregrip, **B** Foregrip adapter
C Slimline forearm with Tac-Gaurd
D Slimline forearm, **E** Standard wide forearm

Description	Wt	Conceal	Cost	Comments
MP5K Foregrip	NA	as weapon	30 ¥	Standard on MP5K series.
Foregrip Adaptor	NA	"	10 ¥	Allows MP5K foregrip to be attached to standard length MP5s.
Slimline Forearm w/Tac-Gaurd	NA	"	35 ¥	-
Slimline Forearm	NA	"	30 ¥	-
Standard Wide Forearm	NA	"	35 ¥	Standard on MP5 series.
KAC RAS for MP5	NA	"	300 ¥	One under barrel and two side rails.
KAC RAS Top Extension for MP5	NA	"	210 ¥	Modular top rail mount.
Surefire 628 Forearm with Light	+0.3	"	255 ¥	Momentary on switch only. (img)
Surefire 628F Forearm with Light	+0.3	"	385 ¥	Momentary/constant on switches.

Harnesses / Slings

For concealed carry of the MP5K, a leather harness is available. This harness holds the weapon close to the wearer's side, and can snapped up and fired in less than a second.

The multipurpose carring sling comes standard with all MP5 weapons.

The nylon shoulder rig holds the weapon to the side of the wearer until it is needed. Two magazines can be carried in pockets opposite the weapon.

A MP5K leather harness, **B** MP5 multipurpose carry sling
C Nylon shoulder rig, lanyard

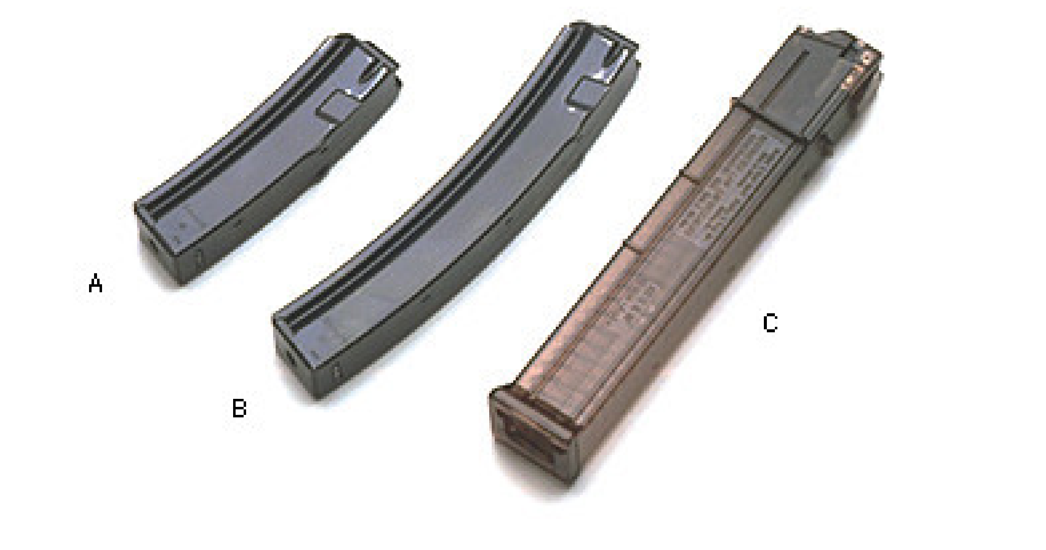
Description	Wt	Conceal	Cost	Comments
MP5K Leather Harness	NA	as weapon	45 ¥	See Quick Draw, p.107, SR3.
Sling	NA	"	10 ¥	-
Nylon Shoulder Rig	NA	"	45 ¥	Holds weapon and two magazines.

Magazines

15 and 30-round stamped metal detachable box magazines are available for the 9mm MP5 series submachine guns.

Transparent polymer magazines have a set of tabs and slots on their sides, allowing multiple magazines to be locked together for quick changing. These are available for .40 and 10mm MP5 submachine guns.

Clamps to attach metal magazines in the same fashion are available.



A 15-round metal, **B** 30-round metal, **C** 30-round polymer.

Description	Wt	Conceal	Cost	Comments
15-round Magazine (9mm, metal)	0.4kg loaded	8	25 ¥	Standard for MP5K series.
30-round Magazine (9mm, metal)	0.6kg loaded	6	35 ¥	-1 Conceal if used with MP5K series.
Metal Magazine Clamp	-	9	10 ¥	-
30-round Magazine (.40, polymer)	0.6kg loaded	6	35 ¥	-
30-round Magazine (10mm, polymer)	0.6kg loaded	6	35 ¥	-

Smartlink Systems

All MP5 models are available with HK's *SL Series* ADVAT.328-compliant smartlink systems. The bulk of the electronic hardware is placed in the hollow pistol grip, taking up space for any other accessories that could otherwise be stored there.

Navy versions of the MP5 come standard with *Navy Series* smartlink hardware. *Navy Series* smartlinks are compatible with ADVAT.328-compliant smartlink 2 cyberware. However, these special, high I/O smartlinks include no software. After manufacture in Virginia, all *Navy Series* trigger groups are shipped to the Naval Surface Warfare Center (Crane Division) in Indiana where software systems and specialized accessories are added to the Navy trigger groups.

Description	Wt	Cost	Comments
SL Series Smartlink 1	+0.15	+500 ¥	Aftermarket Cost: 750 ¥
SL Series Smartlink 2	+0.15	+1200 ¥	Aftermarket Cost: 1,600 ¥
Navy Series Smartlink (Special)	+0.20	NA	Available on Navy trigger groups only.

Suppressors

Quick-mount suppressors for MP5 weapon systems are manufactured by Knight's Armament Company, Vero Beach, FL.

Two models of replacement suppressors for MP5SD weapons are available. The standard HK/Wolf aluminum suppressor, and a stainless steel version developed by KAC which allows water to be introduced to the system for greater suppression.

See rules for suppression.

A KAC MP5-N 9mm/10mm **B** KAC MP5SD-N stainless steel
C HK/Wolf MP5SD aluminum

Description	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
KAC MP5-N [1.5"x7.25"]	9mm	Wet	Thread	-2	+3/+4	0.7	6/36 hrs	1,200
KAC MP5-N [1.5"x7.25"]	10mm/.40	Dry	Thread	-2	+3	0.7	6/36 hrs	1,200
KAC MP5SD-N [NA]	9mm	Wet	Int	NA	+3/+4	NA	6/48 hrs	750
HK/Wolf MP5SD [NA]	9mm	Dry	Int	NA	+3	NA	6/48 hrs	1,200

Stocks

Several stocks are available for the MP5 series weapon system. Each can be exchanged for another in less than 5 minutes with the use of one tool.

The MP5 Receiver Cap is common to MP5A1, A4, SD1 and SD4 weapons.

The MP5K Folding Buttstock is part of the MP5K PDW, but can be attached to any MP5 weapon.

The MP5 Retractable Buttstock is common to MP5A3, A6, SD3 and SD6 weapons.

The MP5 Fixed Buttstock is common to MP5A2, A5, SD2 and SD5 weapons.

A MP5 receiver cap, **B** MP5 butt cap, **C** Nylon cheekpiece, **D** MP5K folding buttstock, **E** MP5 retractable buttstock, **F** MP5 fixed buttstock

Description	Wt	Conceal	Cost	Comments
MP5 receiver cap	-0.3	8	50 ¥	-
MP5 butt cap	-0.3	8	40 ¥	Once installed, cannot be removed.
MP5K folding buttstock	0.6	9	110 ¥	-
MP5 retractable buttstock	0.4	8	110 ¥	-
MP5 fixed buttstock	0.8	6	70 ¥	-
Nylon cheekpiece	0.1	9	20 ¥	-

Trigger Groups

A number of select-fire trigger groups are available for the MP5 series weapon system. All Trigger groups except the SEF group have ambidextrous switches. Trigger groups can be replaced by trained armorers in a matter of minutes. Designations physically stamped on each trigger group are as follows:

Description	Mode	Conceal	Cost	Comments
SEF Trigger Group (Sicher/ Einzelfeuer/Feuerstoß)	SA/FA	as weapon	350 ¥	Standard on MP5 A1-A3, SD1-SD3.
Numerical Trigger Group	SA/FA	"	350 ¥	-
SF (Single Fire) Trigger Group	SA	"	200 ¥	-
0-1-2 Trigger Group	SA/BF*	"	300 ¥	Use Short Burst rules, p.115, SR3.
0-1-3 Trigger Group	SA/BF	"	300 ¥	-
Navy Trigger Group	SA/FA	"	NA	Navy Smartlink hardware included.
2-Round Burst Trigger Group	SA/BF*/FA	"	350 ¥	Use Short Burst rules, p.115, SR3.
3-Round Burst Trigger Group	SA/BF/FA	"	350 ¥	Standard on MP5 A4-A6, SD4-SD6.

Heckler & Koch P7 Components

P7K3 Caliber Conversion Kits

These kits convert the original .380 Auto P7K3 pistol to either .32 Auto (7.65mm Browning) or .22 Long Rifle caliber.

The .32 Auto conversion kit includes the .32-caliber barrel, an 8-round magazine, and a lighter replacement recoil spring.

The .22 Long Rifle conversion kit includes the .22-caliber barrel, an 8-round magazine, a lighter recoil spring, and a new slide to accomodate the .22 rimfire cartridge.

Description	Damage	Wt	Conceal	Cost	Comments
.32 ACP Conversion Kit	4L	0.3	-1	200 ¥	Includes .32 Barrel, 8-round Magazine, and Recoil Spring.
.22 Long Rifle Conversion Kit	5L	0.3	-1	260 ¥	Includes .22 Barrel, 8-round Magazine, Recoil Spring and Slide.

Magazines

Replacement magazines are available for each model of the P7 pistol.

Description	Wt	Conceal	Cost
8-round Magazine for P7M8 (9mm)	0.3kg loaded	8	40 ¥
13-round Magazine for P7M13 (9mm)	0.3kg loaded	8	45 ¥
10-round Magazine for P7M10 (.40 S&W)	0.3kg loaded	8	40 ¥
7-round Magazine for P7M7 (.45 ACP)	0.3kg loaded	8	40 ¥
8-round Magazine for P7K3 (.380 Auto)	0.3kg loaded	8	30 ¥
8-round Magazine P7K3 (.32 Auto)	0.3kg loaded	8	30 ¥
8-round Magazine P7K3 (.22 Long Rifle)	0.3kg loaded	8	30 ¥

Heckler & Koch USP Components

UTL Light

The Universal Tactical Light attachment for Heckler & Koch USP pistols can be mounted to the universal mounting grooves on any USP pistol, including compact variants.

Designed by the Insight Corporation, the UTL light provides direct and ambient lighting. The light can be operated by a finger-controlled switch that provides constant on/off and pressure-controlled functions. A remote pressure switch can be added to the unit to provide finger-free operation.

The UTL/SL variant is designed for use with ADVAT.328-compliant smartlink systems, and can be controlled cybernetically through use of a datajack our routing through the smartlink system itself.

Description	Wt	Conceal	Cost	Comments
UTL Light	0.3	-1	250 ¥	Takes underbarrel space.
UTL/SL Light (smartlink ready)	0.3	-1	300 ¥	Can be activated cybernetically through Smartlink II hardware.
Pressure Switch	NA	-	45 ¥	

Magazines

15 and 31-round detachable box magazines are available for the 9mm USP series pistols.

13-round detachable box magazines are available for the .40 S&W USP series pistols.

12-round detachable box magazines are available for the .45 ACP USP series pistols.

10-round detachable box magazines are available for the 9mm, .40 S&W, .45 ACP and .357 SIG USP Compact series pistols.

Description	Wt	Conceal	Cost	Comments
15-round Magazine (9mm)	0.3kg loaded	8	40 ¥	
13-round Magazine (.40 S&W)	0.3kg loaded	8	40 ¥	
12-round Magazine (.45 ACP)	0.3kg loaded	8	40 ¥	
13-round Magazine (9mm, Compact)	0.3kg loaded	8	30 ¥	With finger rest, 35 ¥
12-round Magazine (.40 S&W, Compact)	0.3kg loaded	8	30 ¥	"
8-round Magazine (.45 ACP, Compact)	0.3kg loaded	8	30 ¥	"
12-round Magazine (.357 SIG, Compact)	0.3kg loaded	8	30 ¥	"
31-round Extended (9mm)	0.5kg loaded	6	55 ¥	-1 Conceal

Smartlink Systems

All USP models are available with HK's *SL Series* ADVAT.328-compliant Smartlink systems. The bulk of the electronic hardware is placed inside the polymer pistol grip.

Description	Wt	Cost
SL Series Smartlink 1	+0.25	+320 ¥
SL Series Smartlink 2	+0.25	+480 ¥

Sound Suppressors

HK-authorized muzzle suppressors for USP weapon systems are manufactured by Brügger & Thomet AG of Switzerland and Knight's Armament Company of Vero Beach, Florida CAS.

Neither company manufactures suppressors designed for use with the .357 SIG USP Compact pistol, though the B&T IMPLUS-IV suppressor will accomodate certain loadings of the .357 SIG cartridge.

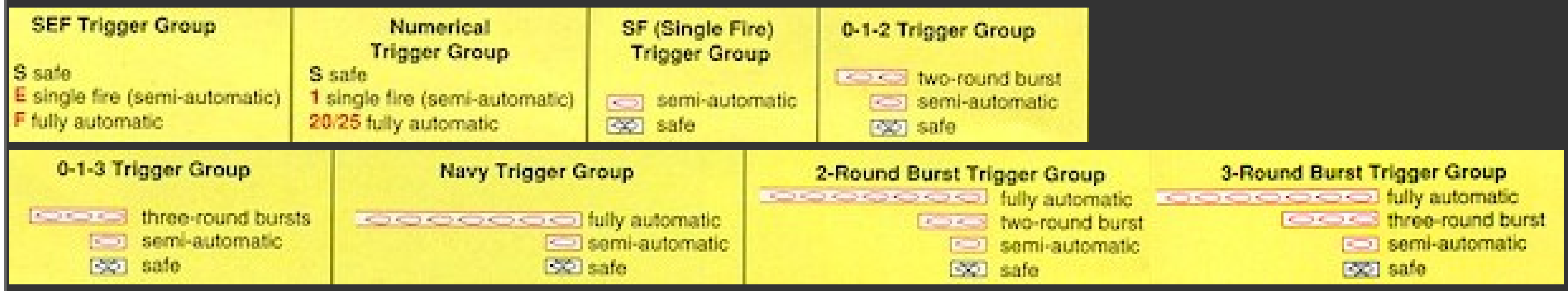
More suppressors can be found in the Silencers/Suppressors section. See rules for suppression.

Description	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
B&T IMPULS IV [1.37x7.83"] **RB**	9mm	Wet	Thread	-2	+3/+4	0.3	6/36 hrs	550
B&T IMPULS IV-A [1.37x7.83"] **RB**	10mm/.40	Wet	Thread	-2	+3/+4	0.3	6/36 hrs	550
B&T IMPULS V [1.37x7.83"] **RB**	.45	Wet	Thread	-2	+3/+4	0.3	6/36 hrs	550
KAC OHG [1.37x7.5"] **RB**	.45	Wet	Thread	-2	+3/+4	0.45	6/72 hrs	1,500

Heckler & Koch Trigger Groups

Trigger Groups

A number of select-fire trigger groups are available for HK roller-locked modular weapon systems, including the G3, G41, HK33, HK53, HK21, HK23 and MP5 platforms. All Trigger groups except the SEF group have ambidextrous switches. Trigger groups can be replaced by trained armorers in a matter of minutes. Designations physically stamped on each trigger group are as follows:



Description	Mode	Conceal	Cost	Comments
SEF Trigger Group (Sicher/ Einzelfeuer/Feuerstoß)	SA/FA	as weapon	350 ¥	Standard on most weapons.
Numerical Trigger Group	SA/FA	"	350 ¥	Standard on most weapons.
SF (Single Fire) Trigger Group	SA	"	200 ¥	Semi-auto only.
0-1-2 Trigger Group	SA/BF*	"	300 ¥	Use Short Burst rules, p.115, SR3.
0-1-3 Trigger Group	SA/BF	"	300 ¥	-
Navy Trigger Group	SA/FA	"	NA	Navy Smartlink hardware included.
2-Round Burst Trigger Group	SA/BF*/FA	"	350 ¥	Use Short Burst rules, p.115, SR3.
3-Round Burst Trigger Group	SA/BF/FA	"	350 ¥	-

Introduction to Body Armor

The National Institute of Justice document titled the *Selection and Application Guide to Police Body Armor* is an extremely good resource for anyone who would like in-depth information on body armor technologies, including history, construction, threat assessment... It's all in this file. Here's a link to the full file, with an exerpt below.

Ballistic Resistance of Personal Body Armor updates information regarding the NIJ 0101.04 standard, effective as of June 2001.

- Selection and Application Guide to Police Body Armor (PDF, 378k)
- Ballistic Resistance of Personal Body Armor, NIJ Standard 0101.04 (PDF, 933k)

And here are a few more interesting links for your edification.

- How Body Armor Works (howstuffworks.com)
- Body Armor 101 (pointblankarmor.com)
- Surviving a Shooting: Your Guide to Personal Body Armor (RAM, streaming)
- The NIJ Armor Rating System and Shadowrun

Selection and Application Guide to Police Body Armor

A History of Body Armor

Humans throughout recorded history have used various types of materials to protect themselves from injury in combat and other dangerous situations. At first, protective clothing and shields were made from animal skins. As civilizations became more advanced, wooden shields and then metal shields came into use. Eventually, metal was also used as "clothing," what we now refer to as the suit of armor associated with the knights of the Middle Ages. However, with the advent of firearms (c.1500), most of the traditional protective devices were no longer effective. In fact, the only real protection available against firearms were man-made barriers, such as stone or masonry walls, or natural barriers, such as rocks, trees, and ditches.

One of the first recorded instances of the use of soft armor was by the medieval Japanese, who used armor manufactured from silk. Although the first U.S. law enforcement officer to lose his life in the line of duty, U.S. Marshall Robert Forsyth, was shot and killed in 1794, it was not until the late 19th century that the first use of soft armor in the United States was recorded. At that time, the military explored the possibility of using soft armor manufactured from silk. The project even attracted congressional attention after the assassination of President William McKinley in 1901. But while the garments were shown to be effective against low-velocity bullets (traveling at 400 feet per second (ft/s) or less), they did not offer protection against the new generation of handgun ammunition being introduced at that time that traveled at velocities of more than 600 feet per second. This, along with the prohibitive cost of manufacturing the garment ($80 each, which amounts to approximately $1,400 in 1998 dollars) made the concept unacceptable. Armor of this type was said to have been worn by Archduke Francis Ferdinand of Austria when he was killed by a shot to the head, thereby precipitating World War I.

The U.S. Patent and Trademark Office lists records dating back to 1919 for various designs of bullet-resistant garments. One of the first documented instances where such a vest was demonstrated for use by law enforcement officers is detailed in the April 2, 1931 edition of the Washington, D.C., Evening Star, where a vest was demonstrated to members of the Metropolitan Police Department. However, none of these designs proved entirely effective or feasible for law enforcement or corrections use.

The next generation of ballistic vests was introduced during World War II. The "flak jacket," constructed of ballistic nylon, provided protection primarily from munitions fragments and was ineffective against most pistol and rifle threats. These vests were also very cumbersome and bulky, and were restricted primarily to military use. It would not be until the late 1960s that new fibers were discovered that made today's modern generation of concealable body armor possible.

How Does Body Armor Work?

When a handgun bullet strikes body armor, it is caught in a "web" of very strong fibers. These fibers absorb and disperse the impact energy that is transmitted to the vest from the bullet, causing the bullet to deform or "mushroom." Additional energy is absorbed by each successive layer of material in the vest, until such time as the bullet has been stopped.

Because the fibers work together both in the individual layer and with other layers of material in the vest, a large area of the garment becomes involved in preventing the bullet from penetrating. This also helps in dissipating the forces which can cause nonpenetrating injuries (what is commonly referred to as "blunt trauma") to internal organs. Unfortunately, at this time no material exists that would allow a vest to be constructed from a single ply of material.

Currently, today's modern generation of concealable body armor can provide protection in a variety of levels designed to defeat most common low- and medium-energy handgun rounds. Body armor designed to defeat rifle fire is of either semirigid or rigid construction, typically incorporating hard materials such as ceramics and metals. Because of its weight and bulkiness, it is impractical for routine use by uniformed patrol officers and is reserved for use in tactical situations where it is worn externally for short periods of time when confronted with higher level threats.

Materials Used

Note: The following information has been prepared from product literature supplied by the manufacturer. All product descriptions and performance claims are the manufacturer's and do not represent findings or endorsement of these claims by the National Institute of Justice, U.S. Department of Justice; Office of Law Enforcement Standards, U.S. Department of Commerce; or Aspen Systems Corporation.

Several manufacturers have been involved in developing and refining materials used in body armor. **DuPont** has developed law enforcement protection products for more than 25 years. Its **Kevlar ®** brand fiber, first developed in 1965, was the first material identified for use in the modern generation of concealable body armor. Kevlar ® is a manmade organic fiber, with a combination of properties allowing for high strength with low weight, high chemical resistance, and high cut resistance. Kevlar ® is also flame resistant; does not melt, soften, or flow; and the fiber is unaffected by immersion in water (see the wet testing discussion in chapter 5).

Kevlar ® 29, introduced in the early 1970s, was the first generation of bullet-resistant fibers developed by DuPont and helped to make the production of flexible, concealable body armor practical for the first time. In 1988, DuPont introduced the second generation of Kevlar ® fiber, known as **Kevlar ® 129**. According to DuPont, this fabric offered increased ballistic protection capabilities against high-energy rounds such as the 9mm FMJ. In 1995, **Kevlar ® Correctional™** was introduced, which provides puncture-resistant technology to both law enforcement and cor-rectional officers against puncture-type threats.

The newest addition to the Kevlar ® line is **Kevlar ® Protera**, which DuPont made available in 1996. DuPont contends that the Kevlar ® Protera is a high-performance fabric that allows lighter weight, more flexibility, and greater ballistic protection in a vest design due to the molecular structure of the fiber. Its tensile strength and energy-absorbing capabilities have been increased by the development of a new spinning process.

Spectra ® fiber, manufactured by **AlliedSignal**, is an ultra-high-strength polyethylene fiber. Ultra high molecular weight polyethylene is dissolved in a solvent and spun through a series of small orifices, called spinnerets. This solution is solidified by cooling, and the cooled fiber has a gel-like appearance. The Spectra ® fiber is then used to make **Spectra Shield ®** composite. A layer of Spectra Shield ® composite consists of two unidirectional layers of Spectra ® fiber, arranged to cross each other at 0- and 90-degree angles and held in place by a flexible resin. Both the fiber and resin layers are sealed between two thin sheets of polyethylene film, which is similar in appearance to plastic food wrap. According to AlliedSignal, the resulting nonwoven fabric is incredibly strong, lightweight, and has excellent ballistic protection capabilities. Spectra Shield ® is made in a variety of styles for use in both concealable and hard armor applications.

AlliedSignal also uses the Shield Technology process to manufacture another type of shield composite called **Gold Shield ®** . Gold Shield ® is manufactured using aramid fibers in place of the Spectra fiber. Gold Shield ® is currently made in three types: Gold Shield ® LCR and Gold-Flex ® , which are used in concealable body armor; and Gold Shield ® PCR, which is used in the manufacture of hard armor, such as plates and helmets.

Another manufacturer, **Akzo Nobel**, has developed various forms of its aramid fiber **TWARON ®** for body armor. According to Akzo Nobel, this fiber uses 1,000 or more finely spun single fila-ments that act as an energy sponge, absorbing a bullet's impact and quickly dissipating its ener-gy through engaged and adjacent fibers. Because more filaments are used, the impact is dis-persed more quickly. Akzo claims their patented Microfilament technology allows maximum energy absorption at minimum weights while enhancing comfort and flexibility.

Akzo Nobel maintains that the use of TWARON ® in body armor significantly reduces the over-all weight of the finished product, thus making vests more comfortable. Akzo also contends that stitching panels made from layers of TWARON ® is largely unnecessary, and that the lack of stitching contributes to a lighter weight and softer feel while affording the same protection.

Another fiber used to manufacture body armor is **Dyneema ®** . Originated in the Netherlands, Dyneema ® has an extremely high strength-to-weight ratio (a 1-mm-diameter rope of Dyneema can bear up to a 240-kg load), is light enough that it can float on water, and has high energy absorption characteristics.

All fibers and materials noted in this chapter have a wide variety of uses in addition to ballistic garments. They are used for other types of protective clothing and equipment (e.g., bicycle and skateboarding helmets), marine and aircraft components, industrial cables, and recreational equipment such as fishing rods and tennis rackets. The materials described are some of the most commonly used; other materials (e.g., ballistic nylon) can also be used.

The introduction of newer, high-performance fibers has dramatically decreased the weight and bulk of today's body armor and increased its comfort and wearability. It can be anticipated that newer materials will be developed and in conjunction with further advances in ballistic vest design, technology will continue to enhance the performance and comfort of tomorrow's body armor.

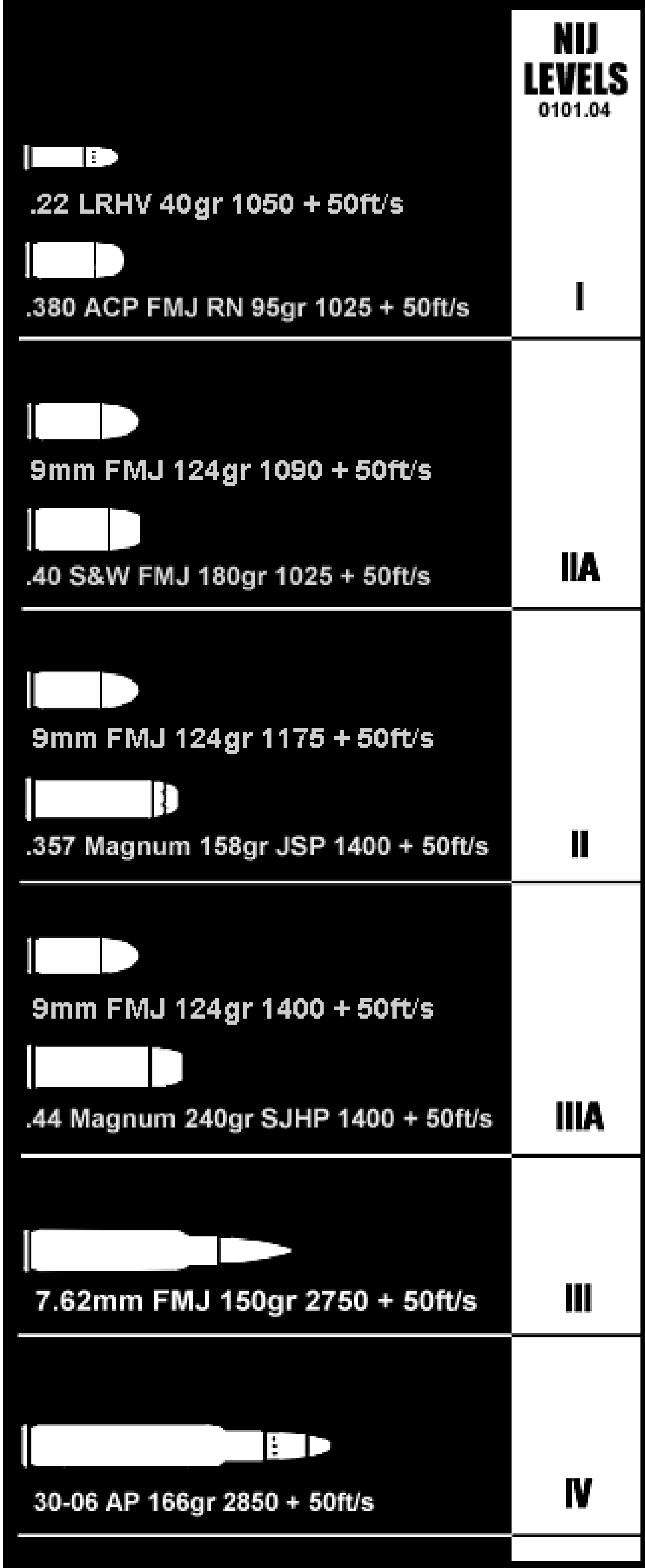
Wanna see more? Download the PDF.

The NIJ Armor Rating System and Shadowrun

There's no such thing as a 'bullet-proof' vest. Any vest hit enough times, or by a high-velocity penetrating round, can fail. To help you determine how much stopping power you need against various weapons and bullets, the National Institute of Justice (NIJ) developed its Threat Level Matrix (see chart below). NIJ Certification tests are performed at approved independent labs like H.P.White Laboratories, Inc. in Maryland.

NIJ Certification

A NIJ Certified model has successfully stopped 48 rounds in laboratory conditions. These conditions, considered "worst case," are usually beyond what you'll ever encounter on the street. During certification, vests are shot both dry and wet and at various angles. Each vest is placed against a soft clay surface and shot in a predetermined pattern to test for backface deformation that can cause blunt trauma. (Since a bullet hits with a sledgehammer impact, blunt trauma can debilitate your ability to respond to an attack.)



NIJ LEVEL I

This armor protects against .22 caliber Long Rifle Lead Round Nose (LR LRN) bullets, with nominal masses of 2.6 g (40 gr) impacting at a minimum velocity of 320 m/s (1050 ft/s) or less, and 380 ACP Full Metal Jacketed Round Nose (FMJ RN) bullets, with nominal masses of 6.2 g (95 gr) impacting at a minimum velocity of 312 m/s (1025 ft/s) or less.

Shadowrun Ballistic / Impact Rating: 4 / 2

NIJ LEVEL IIA

(Lower Velocity 9mm, .40 S&W). This armor protects against 9mm Full Metal Jacketed Round Nose (FMJ RN) bullets, with nominal masses of 8.0 g (124 gr) impacting at a minimum velocity of 332 m/s (1090 ft/s) or less, and .40 S&W caliber Full Metal Jacketed (FMJ) bullets, with nominal masses of 11.7 g (180 gr) impacting at a minimum velocity of 312 m/s (1025 ft/s) or less. It also provides protection against Level I threats. Level IIA body armor is well suited for full-time use by police departments, particularly those seeking protection for their officers from lower velocity .40 S&W and 9mm ammunition.

Shadowrun Ballistic / Impact Rating: 5 / 3

NIJ LEVEL II

(Higher Velocity 9mm, .357 Magnum). This armor protects against .357 Magnum jacketed soft-point bullets, with nominal masses of 10.2 g (158 gr.), impacting at a velocity of 425 m/s (1,395 ft/s) or less, and against 9mm full-jacketed bullets, with nominal velocities of 358 m/s (1,175 ft/s). It also protects against most other factory loads in caliber .357 Magnum and 9mm, as well as the Level I and IIA threats. Level II body armor is heavier and more bulky than either Levels I or IIA. It is worn full time by officers seeking protection against higher velocity .357 Magnum and 9mm ammunition.

Shadowrun Ballistic / Impact Rating: 6 / 4

NIJ LEVEL IIIA

(.44 Magnum; Submachine Gun 9mm). This armor protects against .44 Magnum, Semi Jacketed Hollow Point (SJHP) bullets, nominal masses of 15.55 g (240 gr.), impacting at a velocity of 426 m/s (1,400 ft/s) or less, and against 9mm full-metal jacketed bullets, with nominal masses of 8.0 g (124 gr.), impacting at a velocity of 426 m/s (1,400 ft/s) or less. It also provides protection against most handgun threats, as well as the Level I, IIA, and II threats. Level IIIA body armor provides the highest level of protection currently available from concealable body armor and is generally suitable for routine wear in many situations. However, departments located in hot, humid climates may need to evaluate the use of Level III–A armor carefully.

Shadowrun Ballistic / Impact Rating: 7 / 5

NIJ LEVEL III

(High-powered rifle). This armor, normally of hard or semirigid construction, protects against 7.62mm full-metal jacketed bullets (US military designation M80), with nominal masses of 9.7 g (150 gr.), impacting at a velocity of 838 m/s (2,750 ft/s) or less. It also provides protection against threats such as 223 Remington (5.56mm FMJ), 30 Carbine FMJ, and 12-gauge rifled slug, as well as the level I through III–A threats. Level III body armor is clearly intended only for tactical situations when the threat warrants such protection, such as barricade confrontations involving sporting rifles.

Shadowrun Ballistic / Impact Rating: 8 / 6, nullifies rifle cartridge x0.75 Armor Rating modifier.

NIJ LEVEL IV

(Armor-piercing rifle). This armor protects against .30–06 caliber armor-piercing bullets (US military designation APM2), with nominal masses of 10.8 g (166 gr.) impacting at a velocity of 868 m/s (2,850 ft/s) or less. It also provides at least single-hit protection against the Level I through III threats.

Level IV body armor provides the highest level of protection currently available. Because this armor is intended to resist “armor piercing” bullets, it often uses ceramic materials. Such materials are brittle in nature and may provide only single-shot protection, since the ceramic tends to break up when struck. As with Level III armor, Level IV armor is clearly intended only for tactical situations when the threat warrants such protection.

Shadowrun Ballistic / Impact Rating: 9 / 7, nullifies AP ammunition effects and reduces APDS to x0.75 modifier on rifle cartridges to .323" (8mm), degrades rapidly (FOF.75). Against cartridges greater than .323" (8mm), Half Armor Rating value (4 / 3). Treat AP / APDS normally.

Special Type

A purchaser who has a special requirement for a level of protection other than one of the above standard threat levels should specify the exact test rounds and minimum impact velocities to be used and indicate that this standard shall govern in all other respects.

HIT LOCATIONS FOR SHADOWRUN 3 (V2.0)

Adding a fully functional Hit Location System to Shadowrun is more extensive than it may seem.
First you need to know what location has been hit. That means you have to make an additional roll after each successful strike or shot.
Then you need to know what armor is present at that particular location. That requires including a new Stat to your armor called “Loc”, which means location. It simply states the zones it protects.

THE HIT LOCATION TABLE

Roll 3D6 and **add** up the results.

Roll	Location	Damage	T#
3-5	Head	+1 level	+4
6	Hand	-1 level	+4
7-8	Arm	-1 level	+3
9	Shoulder	+0	+3
10-11	Chest	+0	+2
12	Stomach	+0	+3
13	Vitals	+1 level	+4
14	Hip	+0	+3
15-16	Leg	-1 level	+3
17-18	Foot	-1 level	+4

Damage = Damage level increase (or decrease) if that specific location is hit.
T# = Target number increase for called shots on that specific location. This extends the rules given on page 114 of SR3.

In situations where it is important which side was hit (and only then), determine this with a quick D6 roll: odd = left, even = right.

Called Shots to body areas

A shot may also be called for a general area of the body instead of a specific location. For these called shots you subsitute your 3D6 die roll with other dice rolls and you use the Target Number modifications shown in the table below:
(Treat a result higher than 18 as 18.)

Location	T#	Roll with
Head Shot	+2	1D6+3
High Shot	+1	2D6+1
Body Shot	+1	2D6+4
Low Shot	+1	2D6+7
Leg Shot	+2	1D6+12

For some types of melee attacks (for example using the Cyber-Implant Combat skill with spurs), some GMs may want to assume a regular attack to be a called shot against the High Area, without applying the called shot modifier.
In special situations the GM might even want to use other rolls as standard. A good example would be a Dwarf fighting a Troll unarmed, where the Dwarf would use a Low Shot as his normal roll. In any case, common sense should be used.

You are on page 1.

next page | back

Please don't send me any e-mail about these rules. I know everyone has their own house rules for Shadowrun, and that's exactly what these are. These are the rules that work best for me and my gaming group. Maybe you'll like them too.

Edge: Burst Fire Control

Cost: 5
Requisite: Skill Rating 4

This Edge allows a character the physical control to fire a 2 or 3-round burst from any weapon while in fully-automatic (FA) mode by expending one Simple Action. Use normal burst fire rules, p.113, SR3.

Edge: Manual Firearm Control

Cost: 5 per Skill
Requisite: Skill Specialization, Rating 4

This Edge allows a character with a skill specialization in any manually operated repeating firearm type (single-action revolver, lever action, bolt action, pump action, etc...) to bypass Target Number modifiers that would normally be encountered when operating a manual firearm.

Edge: Rapid Fire

Cost: 5 per Level
Max Rating: 8
Requisite: Skill Rating 3

This Edge allows a character with a firearm skill rating of 3 or better to fire more than two rounds per Combat Phase with an **SA mode** weapon. For example, at Pistols 3, the player may spend 10 Good Karma points in order to allow a character to fire three rounds per **Complex Action** from a pistol in SA mode. All normal Recoil Modifiers apply. Characters may "walk" fire normally (SR3.116). Costs are accumulative.

Skill Rating	Cost	Shots/Complex Action
3	10	3
4	10	4
5	10	5
6	10	6
7	10	7
8	10	8

Edge: Combat Experience

Value: +1, +2, +3, +4
Cost: 5 per level at character creation, or 10 Good Karma points per level.

Characters with this edge are granted a dice pool equal to their Combat Experience Rating which can be added to the Willpower Test when rolling against Shock. This edge could also be used to augment other tests that would involve combat experience, per GM discretion.

Players should have to purchase this edge with Good Karma earned during game play. Exceptions would include a character with a military background or other circumstances involving a generally violent life or a really bad childhood.

Simple Rules, Explanations and Extensions

In Shadowrun (SR3.281), there are two types of suppressors for firearms. **Silencers** are barrel-mounted accessories designed for single-shot (SS) or semi-automatic (SA) firearms. They provide a **+4 Perception Test modifier** to those who might notice the sound of the gunshot. They provide no bonus when used on a firearm in BF or FA modes. One Complex Action is required to install or remove a silencer. -2 Conceal.

Sound Suppressors can be used with burst-fire (BF) and fully-automatic (FA) firearms, and provide a **+2 Perception Test modifier**. They can be used in SA mode as well, but only provide a **+2 Perception Test modifier**. Sound suppressors must be replaced after every 300 rounds of burst or full-auto fire. Two Complex Actions are required to install or remove a sound suppressor. -2 Conceal.

What are called "silencers" in Shadowrun can be considered low-volume (area, not sound level) suppressors. Low-volume suppressors are designed to suppress relatively infrequent shots from relatively low-powered pistol ammunition, such as the 9mm Para, .45 ACP, and other common defensive handgun cartridges. The majority of pistols used in Shadowrun fire these, which would otherwise be the "tipping barrel" type of short recoil operation, in which the barrel itself performs part of the locking operation. For this reason, pistol suppressors are designed to be relatively short (7.5"/190mm or less) and lightweight (0.44lbs/200g or less). If too much length and/or weight is added to the muzzle end of the barrel, the locking lugs, which are located at the other end of the barrel, will not unlock from the slide as a shot is fired. Thus, the pistol will not function in semi-automatic mode and must be cycled manually. In order to be lightweight (and affordable), these suppressors are made mostly from high-grade aluminum, which resists heat well enough for relatively infrequent shots.

Who cares, right? Well, firing shots in rapid bursts or full-automatic mode generates a lot of gas that needs to be contained by the suppressor. More volume is needed to contain those gases and suppress the weapon efficiently. Also, a lot of heat is generated, which tends to soften and sometimes even melt lightweight, low-density metal alloys like common grades of aluminum or titanium. High-volume suppressors are large and tend to be heavy. Heavier alloys such as stainless steel or inconel are required to ensure durability. What Shadowrun calls "sound suppressors" are high-volume suppressors. As mentioned above, more mass will adversely affect the functionality of most pistols.

For those reasons, you can see why a "silencer" won't work on a BF/FA weapon, and why a "sound suppressor" won't work with most semi-automatic pistols. Of course, this leaves a few areas open for discussion. Firing in semi-automatic mode through a high-volume "sound suppressor" should provide at least as much of a reduction in noise as an "ordinary" pistol silencer. **Firing in SS or SA mode on a firearm equipped with a "sound suppressor" should provide a +4 Perception Test modifier.** Some might argue in favor of an even greater Perception Test modifier in this case, say, +5 or +6, but as far as I'm concerned, I can see how some gamemasters would be bothered by that.

Regarding a couple of arguable peripheral rules for "sound suppressors": Many high-volume suppressors are capable of dealing with 2000-3000 rounds between cleanings without a loss of efficacy, let alone partial or complete replacement. **The 300-round replacement rule is unfounded in regard to modern technology.** Another arguable rule would be the insinuation that it somehow takes longer to put a "sound suppressor" on a given firearm than it would a "silencer". This is generally the opposite of how things work in reality. **Quick mounts are the usual method of attaching suppressors to automatic weapons like submachine guns or assault rifles. One Complex Action to attach or remove should suffice.**

Advanced Rules: Types of Suppression

There are two basic types of firearm sound suppression. These are **partial suppression** and **full suppression**.

Partial suppression occurs when the weapon's muzzle blast is fully contained (eliminating the loud BANG of discharge), but the bullet travels from the muzzle at supersonic velocity. A bullet travelling faster than the speed of sound creates a sonic boom as it travels. At close range, the crack of the bullet is likely to be heard and may be mistaken for a gunshot. Since the sound of the bullet's flight originates along the bullet's path, it can give a rough idea of direction. At longer ranges, the sound will be heard only by those along the bullet's flight path, and it is difficult to determine the point of origin of the shot.

Partial suppression does not affect weapon range. Velocity controls do **not** apply.

Check out the **Partial Suppression Perception Test Modifiers** table. These rules apply to weapons firing supersonic ammunition only.

Full suppression occurs when the weapon's muzzle blast is fully contained by the suppressor and the bullet travels from the weapon's muzzle at subsonic velocity. A bullet travelling slower than the speed of sound creates very little noise in flight. Therefore, the sound of discharge is greatly dampened so much that the sound of the weapon's action cycling can be as loud or a little louder than the sound of the bullet leaving the muzzle.

Full suppression can adversely affect weapon range and power.

Check out the **Ranges for Velocity-Controlled Suppressed Firearms** and **Damage Codes for Velocity-Controlled Suppressed Firearms**.

The **Accessories** section of this website lists several **suppressors** available for purchase. Each has its own performance rating, based on a modifier to Perception Tests.

Muzzle Suppressors and Integral Suppressors

There are two basic types of suppressors. These are **muzzle suppressors** and **integral suppressors**.

Muzzle suppressors are detachable and passive, meaning that they do nothing to control the velocity of a bullet passing through them; they simply contain the muzzle blast. In order to achieve full suppression with a muzzle suppressor, subsonic ammunition **must** be used.

Integral suppressors are part of the weapon and cannot be removed except for cleaning purposes. Integral suppressors are usually active, meaning that they bleed propellant gases from behind the bullet before it can reach supersonic velocity. This is achieved by small holes or slots drilled around a section of the barrel, somewhat close to the chamber. An integral suppressor can be passive if the ammunition designed for the weapon is subsonic.

As an option, integral suppressors can include a user-selectable switch that blocks the barrel vents, effectively keeping gas from being bled from behind the bullet. With this feature, the user can select whether to apply full suppression or partial suppression. This feature is not available on muzzle suppressors.

Either of the above suppressor types can be used in conjunction with any type of firearm, though integral suppressors are most common on pistols and submachine guns using marginally supersonic ammunition.

Artificial Environment, Wet Technology, and Wipe and Mesh Suppressors

As discussed above, what Shadowrun refers to as "silencers" can be considered low-volume suppressors designed for use with common defensive pistol cartridges. Because these suppressors are designed to be somewhat compact, many need technology other than the standard "tube and baffle" arrangement commonly found in larger dry suppressors in order to maximize performance.

With **Wet Technology** suppressors, only 5cc of water is needed to keep the silencer working at optimal performance (+4 to Perception Test modifiers) for about 30 rounds of use. After that, water needs to be replenished or performance degrades (+3). Water can be added on the fly through the muzzle of the suppressor.

With grease pack **Artificial Environment** suppressors, the suppressor must be removed from the weapon and disassembled in order to add grease. About one tablespoon (15cc) of grease must be added to the expansion chamber of the suppressor every 50 rounds for maximum performance (+4 to Perception Test modifiers) or performance degrades (+3). Because of the possibility of a pressure effect, it is not recommended to use expanding, frangible or explosive ammunition with grease pack suppressors.

Wipe and Mesh suppressors include replaceable components called wipes, which work as baffles, and wire mesh, which is used to disrupt the flow of propellant gases within the suppressor. Since the bullet actually comes into physical contact with each wipe in the stack (usualy 4-8 wipes) and the mesh is eventually clogged with powder residue, the performance of the suppressor degrades after 30-50 rounds of use (+3 to Perception Test modifiers). Because the bullet contacts the wipes, it is not recommended to use expanding, frangible or explosive ammunition with Wipe and Mesh suppressors.

While considered outdated technology by many authorities, the advantage of Wipe and Mesh suppressors is that they are relatively easy to improvise. They can be made out of commonly available materials with very few tools.

Weapon Classes and Suppressor Mounting

Most off-the-shelf firearms, especially those that are generally legal, are not equipped to mount a suppressor. This includes handguns, carbines, sport rifles and shotguns. Most of the time it requires an entirely new barrel with the mounting device (usually threads or lugs) machined directly into it. This isn't a big deal for most pistols; the barrel is usually a modular part, anyway. But it is another story entirely for rifles. General prices for the procedure should be about **200 ¥** for pistols (end-user replaceable in most cases) and **500 ¥** for rifles, with at least a couple of days of down time at the gunsmith's shop.

Suppressing a revolver is a flat-out waste of time and effort. While it has been done before to cover very specific circumstances, it would cost around three or four times that of suppressing a similarly powered pistol with twice the ammunition capacity and would involve rebuilding the revolver from the ground up. So, in short, don't bother.

Hold-out pistols are generally not capable of mounting a suppressor. They are designed to be concealed.

Light / Medium / Heavy Pistols usually require only a barrel replacement to mount a suppressor. Some may include a mount.

Machine Pistols are usually equipped to mount a suppressor.

Submachine Guns are usually equipped to mount a suppressor.

Shotguns require modification to mount a suppressor. Shotgun suppressors are much more efficient when used with slug loads, and are usually design specifically for use with slugs. Suppression is extremely limited with shot loads.

Light Carbines, for the purposes of this site, are small rifles that fire pistol ammunition. These weapons aren't normally designed to mount a suppressor, but could easily benefit from one. Modification is required.

Carbines are small rifles that fire rifle ammunition. Depending on what the weapon was designed for, it may or may not include a suppressor mount. For instance, something like a Colt Commando would include a mount (a Quick Mount can replace a flash suppressor), whereas a Ruger Mini-14 would need to be modified.

Assault Rifles are usually equipped to mount a suppressor, though it may require removing or replacing the standard flash suppressor with a Quick Mount first.

Sport Rifles require modification to mount a suppressor. Many countries have laws that prohibit the addition of a suppressor mount to a sporting rifle, so they aren't designed to mount one.

Sniper Rifles are usually available from the factory with the option of a suppressor mount. **+150 ¥.**

Heavy Sniper Rifles come with muzzle brakes that can be removed and replaced by a suppressor. Rifles of this type fire ammunition that is impractical to fully suppress. Partial suppression does not fully contain muzzle blast, but it does lower report to around that of a sport rifle. A suppressor also keeps the muzzle blast from kicking up dust and debris around the shooter, which would otherwise tend to give his position away. All of that considered, we're still talking about at a very large appliance, around half as large as the weapon itself, which is already quite large.

Machine Guns are used primarily when a large volume of fire is required for wide area suppression and mass destruction. There aren't many situations in which suppression of a machine gun would be helpful. It's a bit of a trade-off. While you may be reducing noise and muzzle flash, attaching a suppressor to a machine gun will also help it to overheat faster. Modification is usually required.

Assault Cannons / Anti-Matériel Rifles come with muzzle brakes that can be removed and replaced by a suppressor. Rifles of this type fire ammunition that is impractical to fully suppress. Partial suppression does not fully contain muzzle blast, but it does lower report to around that of a sport rifle. A suppressor also keeps the muzzle blast from kicking up dust and debris around the shooter, which would otherwise tend to give his position away. All of that considered, we're still talking about at a very large appliance, around half as large as the weapon itself, which is already quite large.

Grenade Launchers: What are you thinking? I guess you could, but why would you bother?

Suppressing Automatic Firearms

Firearm noise is attributable to two main sources: muzzle blast and bullet flight noise. Automatic firearms create a third source of noise: the sound of their actions reciprocating automatically.

A Bolt Lock (usually called a Slide Lock on a pistol) is a relatively simple modification that locks the action of an automatic firearm closed, keeping it from cycling ammunition and making the noise that goes along with that action. Gas-operated firearms may be modified to include an "off" position on the system's regulator if it does not already have one, or a regulator with an "off" position can be added to gas systems that don't normally include regulators.

Use of these systems provides an additional **+1 Perception Test modifier at Short Range only.** The downside is that the lock has to be disengaged before automatic cycling can resume. This means that **SA, BF or FA mode weapons effectively become SS mode weapons while the lock is engaged.**

Description	Avail	Cost
Bolt Lock or Slide Lock	3/36 hours	50 ¥
Gas Regulator with "Off" position	4/48 hours	200 ¥

Suppressors and Recoil Compensation

Because all silencers and sound suppressors contain propellant gases and add mass to the muzzle of a firearm, they provide a degree of recoil compensation, based on how much of the recoil-producing muzzle blast they can neutralize.

Pistol suppressors (called "silencers" in Shadowrun) provide **1 point of recoil compensation**. "Sound suppressers" designed for SMGs and Assault Rifles provide the equivalent of **3 points of recoil compensation**. Suppressors designed for Heavy Sniper Rifles, Anti-Materiel Rifles and Assault Cannons provide the equivalent of **4 points of recoil compensation** for the purposes of negating the heavy recoil of single shots only; they will not contain any degree of autofire, period.

Silencers and sound suppressors **cannot at *any time* be used in conjunction with gas-venting systems**. A suppressor works by containing and then slowly releasing propellant gases, whereas a gas-vent, or *compensator*, uses said gases to oppose the lift of the muzzle by directing the gases upward through vents near the muzzle.

Suppressors also increase the chances of malfunctioning as fouling is blown back into the weapon's action. Increase maintenance frequency by 50%. If players don't keep up with this routine, give them frequent jams until the do.

Other Things You Should Know

All suppressors are caliber-specific. In other words, a 9mm suppressor can be used on any weapon that fires a 9mm bullet, but it cannot be used on a .45-caliber weapon or vice-versa. If bullet diameter is significantly less than bore diameter, suppressor performance will be poor and accuracy will suffer. If the bullet is of greater caliber than the suppressor's bore, the bullet will likely contact a baffle and may cause the suppressor to blow up in your face.

Very powerful firearms such as heavy sniper rifles and anti-matériel rifles use suppression in a slightly different manner than other, lower-powered firearms. Because these weapons use such a large amount of propellant to move the heavy projectiles they fire up to such high velocities, a full suppression of such a weapon would require a prohibitively large and heavy suppressor. Instead, suppressors are used to subjugate the powerful muzzle blast and recoil that these weapons generate by *partially* containing muzzle blast. Along with lowering the amount of sound pressure that escapes the system, a suppressor on these types of weapons greatly reduces the visual signature that can be created by the muzzle blast kicking up dust, leaves, or other debris around the shooter's location.

If the ammunition is **velocity-controlled**, meaning that the bullet does not exceed the speed of sound, the weapon's effective range should be reduced using the **Ranges for Velocity-Controlled Suppressed Firearms** table below. Damage Codes should also be reduced using the **Damage Codes for Velocity-Controlled Suppressed Firearms**, also found below.

More advanced rules for suppression can be found under seperate cartridge entries in the **Ammunition By Caliber** section. If you do not know what cartridge the weapon in question fires, you may be able to find it in the **Shadowrun Firearms Cartridge Table**.

Suppression and Velocity Control Tables

Weapon class range is taken into account. Situational modifiers (SR3.232) can and should also be added to enhance the suppression effects at long range.

Delay occurs when a bullet is moving faster than the speed of sound; about 1120 feet/second or 341 meters/second. It takes one second for the sound of a gunshot to travel 341 meters. Gamemasters should keep that in mind. If the shooter is far enough away from the target, he can be long gone before anyone figures out what happened. The modifier is there to show the difficulty in determining a direction from the sound of the bullet alone.

Again, **situational modifiers (SR3.232) should be added to enhance suppression effects.** Remember that using burst fire includes a -4 Perception Test modifier and full autofire includes a -6 Perception Test modifier. The effects of your suppressor are then added to that value.

Partial Suppression Perception Test Modifiers

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Light Pistol	-	-	+1	+2
Medium Pistol	-	-	+1	+2
Heavy Pistol	-	-	+1	+2
Submachine Gun	-	+1	+2	+3
Light Carbine	-	+1	+2	+3
Carbine	-	+2	+3	+4 (delayed)
Shotgun*	-	-	-	+1
Assault Rifle	-	+2	+3 (delayed)	+5 (delayed)
Sport Rifle	-	+2	+4 (delayed)	+6 (delayed)
Sniper Rifle	-	+2	+4 (delayed)	+6 (delayed)
Heavy Sniper Rifle*	-	+1 (delayed)	+2 (delayed)	+4 (delayed)
LMG	-	+2	+4 (delayed)	+6 (delayed)
MMG	-	+2	+4 (delayed)	+6 (delayed)
HMG*	-	-	+2 (delayed)	+4 (delayed)
AMR / Assault Cannon*	-	+1 (delayed)	+2 (delayed)	+4 (delayed)

*Suppressors for these weapon types do not fully contain muzzle blast. Therefore, they are still quite loud even with a suppressor attached. Muzzle blast will be readily audible at close range, but sound energy will dissipate over distance. In some cases, the bullet will reach the target long before the sound will, thus the mention of time delay.

Full Suppression Perception Test Modifiers

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Light Pistol	+4	+4	+5	+5
Medium Pistol	+4	+4	+4	+5
Heavy Pistol	+4	+4	+4	+5
Submachine Gun	+4	+4	+4	+5
Light Carbine	+4	+4	+4	+5
Carbine	+4	+4	+4	+5
Shotgun	-	-	-	+2
Assault Rifle	+4	+4	+5	+6
Sport Rifle	+4	+4	+5	+6
Sniper Rifle	+4	+4	+6	+6

Ranges for Velocity-Controlled Suppressed Firearms

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Light Pistol	0-5	6-15	16-25	25-40
Medium Pistol	0-5	6-20	21-35	36-50
Heavy Pistol	0-5	11-20	21-35	36-70
Submachine Gun	0-10	11-40	41-60	61-100
Light Carbine	0-20	21-50	51-80	81-150
Carbine	0-40	41-70	71-100	101-200
Shotgun	0-5	6-15	16-25	26-65
Assault Rifle	0-50	51-75	76-150	151-300
Sport Rifle	0-65	66-100	101-250	251-400
Sniper Rifle	0-75	76-150	151-350	351-500

Damage Codes for Velocity-Controlled Suppressed Firearms

Type	Standard Damage Code	Velocity-Controlled Damage Code
Light Pistol	6L	No Change
Medium Pistol	7M / 8M	No Change
Heavy Pistol	9M / 10M / 8S / 9S	8M / 9M / 9M / 9M
Submachine Gun	6M / 7M	5M / 6M
Light Carbine	6M / 7M / 8M / 9M	5M / 6M / 7M / 8M
Carbine	8M	8L
Shotgun	10S	9S
Assault Rifle	9M	8L
Sport Rifle	7S / 8S / 9S / 10S	8M / 8M / 8M / 9M
Sniper Rifle	14S	9M

Guns. Lots of Guns.

"You're acting like a first year f*ing thief! I'm acting like a professional!"**
-Mr. Pink, Reservoir Dogs

Throughout the years I've spent playing Shadowrun, I've come to realize something. The bulk of Shadowrun players know next to nothing about how a firearm functions. That's understandable. Not everyone wants or needs to take the time to learn about them just to play a game. That's why I've created this site. To educate and inform those interested in firearms, and to create rules that come closer to reflecting the reality of firearms.

Though Shadowrun takes place in a futuristic, Gibson-meets-Tolkien kind of world that resides in the imaginations of its players, its story line is set in a near-future Earth. That means the laws of physics as we know them still apply. While "realism" may be a word that inspires conniption fits from the occasional gamer, the word "practicality" should not. Even in a fairly abstract role playing game system, anyone should be able to understand that some things tend to be far more abstract than others, which makes them impractical in terms of playability. With that in mind, statistics and ratings for firearms should be consistent within the system.

I know that some people are bound to have a problem with some of these weapons. That basically comes down to a difference in how we perceive the world of Shadowrun and how we like to have fun playing within it. Different groups play the game differently. If your game is geared more toward a Hong-Kong-Blood-Opera-Flying-Lead-And-Kung-Fu type thing, these rules probably aren't going to make you very happy if your character ends up looking down the bore. Lethality is definitely enhanced.

I'll try to explain my view a little more thoroughly. Guns kill, soldiers die, and good shadowrunners don't do much shooting. It's not good for business. Loud noises and dead bodies tend to cause investigation. Investigation draws attention to people who must live with a high degree of anonymity in order to keep their clients happy so that they can get paid. Believe it or not, shadowrunning is a service industry. It exists to circumvent the rules that a society has chosen to impose upon itself through a little thing called government. If you get caught, you'll get punished. One of the better ways to keep from getting caught is to keep your face out of the spotlight and stay safely in the shadows. Tact. If you're dumb enough to leave a trail of bodies and evidence in your wake, you're gonna find yourself in a little box, sitting on top of a seventeen-inch cybercock in no time. And it will be about as straight and narrow as the choices you made before you got yourself into that little predicament. It's just a matter of time. But if you can manage to pull off jobs without drawing attention to yourself, that risk turns into reward.

Obviously, these ideas can conflict with the way that some people like to play the game. There's nothing wrong with playing the game the way it is presented in published Shadowrun material. And there's nothing wrong with playing it using your own rules, either. As long as you're having fun, you're doing it right.

Issues

"Why do they cost so much?" Because firearms are expensive. Not normally because they're that difficult to make, but because the corp making them wants their cut, and the politicians want to be well paid for the crap they have to take from the people and committees fueled by the media that don't seem to really know what they're talking about. The firearms presented in the plethora of official Shadowrun materials are excessively cheap, assuming one Nuyen is equivalent to one US Dollar.

(Since I wrote the above many years ago, I've had to correct myself...) According to Wordman's excellent Sixth World site, one Nuyen is equivalent to five UCAS dollars. This is apparently stated on page 84 of the **Neo Anarchist's Guide to North America** and I missed it back when I had access to a copy. If you'd like, you can assume that the prices I have listed are in UCAS dollars rather than Nuyen and divide by five to get the actual cost in Nuyen. If that has changed with the release of **Shadows of North America**, please let me know, or if you're in the position to, send me a copy!

"Why do they generally weigh less than other Shadowrun firearms?" Because the weights listed in Shadowrun are notoriously screwy. What is listed under weight ratings is called a "kilogram". It should actually be called a pound. Things are excessively heavy in Shadowrun because of this. If you'd like to be a little more precise, one pound (lbs) equals 453 grams (g). You do the math (kg/0.4536=lbs). There's a measurement converter here.

Another thing I've already heard is that the guns "aren't different enough." The firearms presented here have been designed more for player preference and an attempt at displaying a bit more practicality than any big changes in game effect. For instance, many of the pistols available here are very similar to each other as far as the game is concerned because the things that make them unique in reality (i.e. double action or single action trigger mechanisms, etc...) do not make any difference in Shadowrun's system of rules. However, if you're a gamemaster, once you've learned the details of how certain firearms function, you can use certain limitations that every firearm possesses in a realistic manner to control situations that might otherwise be argued against during game play. A deeper level of detail can also help players emerse themselves into character.

The firearms listed here will also show you what the FCG can do for you. More information on the FCG can be found below.

Firearm Ratings

On each firearm page, you will find a table of statistics that looks like this:

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P3 ERASe	10x24mm	Heavy Pistol	5	15 clip	SA/BF	9M	1.9	12/18 days	3,000 ¥

Model: Designates the model name, number, or abbreviated name of the firearm.

Caliber: Adds a dimension to the Shadowrun system by designating the difference in calibers and cartridges between firearms. Unless otherwise noted, the firearm may only use the cartridge stated in this field. For example, a firearm using 9mm Parabellum ammunition may not use 9mm Kurz, 9mm Makarov, 9x23mm, or any other cartridge but 9mm Parabellum.

Sometimes these cartridges are known by several different names, but are actually the same cartridge (for example, 9mm Parabellum = 9x19mm Luger; 9mm Kurz = .380 Auto). More detailed information about cartridges can be found in the Ammunition By Caliber section of this website.

Range: By canon Shadowrun rules, each firearm belongs to a larger class of firearms. Each class has its own range table (SR3.111; i.e., Light Pistol, Heavy Pistol, Submachine Gun, etc...). In most cases, that class also has a standard Damage Code (i.e., Light Pistol usually have a damage code of 6L). In rare cases, the range tables and damage codes do not match. In the case of the Hammerli 610S (being a target pistol), this has been done to simulate a weapon of class that has better range than other weapons of its class (Heavy pistol range, Light Pistol damage).

Firearms on this website occasionally use the same method for the same purposes. For example, some weapons found in the Assault Rifles section use the Sport Rifle or LMG range tables. This is done to simulate that a given firearm may have better range than most of the others in its class. Also, this website uses additional range tables for new "classes" of firearms (Light Carbine, Carbine, Heavy Sniper Rifle, etc...). The modified range tables can be found in the Rules section of this website. In the future, each firearm may include its own range table.

Conceal: This rating represents a measurement of how difficult it may be to hide a particular firearm. For more information, see SR3.270.

Ammo: This rating reresents the firearm's base ammunition capacity and the type of ammunition storage device that is used. Some firearms may employ different magazines with different capacities. Reduced capacity can result in an increase to the weapon's Conceal Rating. Conversely, increased capacity can result in a decrease of Conceal Rating.

A **(c)** or **clip** is used to represent any type of detachable magazine that can be quickly removed from or inserted into the firearm. In an effort to inform and enlighten, the term "clip" is a misnomer when used in this context. The correct term is "magazine" or more specifically, "detachable box magazine".

Cylinder or **cyl** represents a rotating, multi-chambered magazine from which cartridges are directly fired, commonly found in revolvers. While modern revolvers include a cylinder that can be unlocked from the frame in order to allow all of its chambers to be loaded or unloaded at once, there are a couple of revolvers to be found on this site that only allow one chamber to be loaded/unloaded at a time. Special rules for these revolvers are located in the applicable firearm's notes.

A **(m)**, **mag** or **magazine** represents any type of internal magazine, into which cartridges are loaded or unloaded individually. In reality, this is not necessarily the case.

A **(b)**, **break** or **breech** represents any type of manually-operated firearm in which the action is opened and one cartridge at a time is loaded directly into the chamber. This includes double-barreled shotguns, break-action pistols and the like.

Mode: Designates the available modes that the weapon can fire in. Single Shot (**SS**), Semi-Automatic (**SA**), Burst Fire (**BF**), and Fully Automatic (**FA**). Some weapons are selectable between different modes (**SA / BF / FA**) while others can use only one mode (**SS**).

While the term behind the acronym does not technically fit, **SA** mode is used in conjunction with double-action revolvers on this website. This is done in order to simulate that double-action revolvers can be fired very quickly indeed, at the same speed or faster than many semi-automatic pistols, and as such should not require a Complex Action to fire, as with **SS** mode.

Rules regarding modes can be found in SR3.114.

Damage: Represents basically how much damage the weapon is capable of dealing out proir to staging and resistance. The number is the **Power Rating** (the higher it is, the more powerful the weapon), and the letter reprents the **Damage Level** (Light, Moderate, Serious, or Deadly). Rules regarding damage can be found in SR3.114.

Weight: Weight of the weapon, unloaded, in kilograms. Canon rules are notoriously faulty here, with the number better representing pounds rather that kilograms. That issue is corrected on this site. Weights actually are in kilograms.

Availability: This stat represents how difficult it is to aquire the weapon. Personally, I apply this rating only to the North American continent. Other areas may have different availability ratings. Rules for availability ratings can be found in SR3.114.

Cost: This is a rating of how cute the firearm is, in nuyen (¥). Just kidding. This value represents the manufacturer's suggested retail price, in a freely exchangeable currency known as "nuyen". On the streets, the weapon may be marked up or down, at GM discretion.

As you have probably noticed, my site does not include ratings for **Street Index** or **Legality** on this website. That may change in the future, but previously I have felt that GMs should be given discretion in controlling these variables during game play. **Street Indexes** can be used as leverage, in order to help the GM guide players into a choice of weapons for a particular job. In my own opinion, the **Legality** codes used for many of the firearms in canon are not as well thought-out as they should be. Also, legality will differ from country to country (even region to region), so having one table to handle it all isn't necessarily the right thing to do. So I've opted to exclude those variables on this site and leave them to the GM. May s/he be wise and fair to you.

However, all of that is just my opinion about the matter. Ultimately, by leaving those factors out, players and GMs are free to choose any method or statistic they find reasonable in their own games.

The Firearms Creation Guide

The FCG is the system I used to create a lot of the guns when I originally wrote this site around five years ago, long before the release of Cannon Companion. The FCG was designed by Peter Millholland, and it works kind of like the Vehicle Creation Guide from the Rigger 2 sourcebook. I used a slightly modified version of Pete's FCG to create a lot of the guns on this site, so if things don't come out the same for you, that's why.

To check it out, click here: Firearms Creation Guide

Anyway...

Use the frame to your left to navigate through the list of firearms. The weapon you're looking for will be displayed in the frame that this page is in.

If there are any questions, comments, complaints, heads-up's, whatever, you can e-mail me by clicking here.

Enjoy!!

Bolt Action

Breech closure of a small arm by means of a hand-operated bolt moving in prolongation of the weapon's axis. May be 'turnbolt' in which the bolt is pushed forward and then turned down to lock by means of a handle; or a 'straight pull bolt' in which the manual action is a simple and reciprocating movement and the bolt is turned and locked by cam or wedge action.

The turnbolt type of bolt action operation is much more common than straight pull. Examples of **turnbolt** actions include the Mauser action and its derivatives, the Lee action, the Mosin-Nagant action and the Remington 700 action, among others. Examples of **straight pull** actions include two different Mannlicher actions (1886 and 1895), the Ross action and the Schmidt action. The latest straight pull action can be found on the Blaser 93 rifle.

Both action types may be repeating arms, where a magazine is present (usually an internal box type), or single shot, where one cartridge is manually loaded into the rifle at a time. The latter is commonly found in competition or "benchrest" rifles.

Because bolt actions were largely developed as military arms, older rifles (pre-WWII) were usually loaded using "stripper clips" or "chargers," which are sheet metal devices that hold a number of cartridges together, usually five rounds. In this case, the bolt would be locked open by the magazine's follower after the last round was fired and ejected. At that time, the soldier would grab a full "clip" from his battle pack, attach it to a slot above the magazine, then press the cartridges down into the magazine all together. He would then discard the "clip" and get to work.

Break Action

The term "break action" covers action types in which the barrel is "broken" from the breech block by use of a hinge. Quite possibly the simplest type of firearm action, this type is most commonly found on double-barreled shotguns of the "over/under" or "side-by-side" type, though single-barreled weapons may be found, such as the M79 grenade launcher.

In both types of shotguns, the barrels are locked closed by a thumb-operated latch. When the action needs to be opened, the latch is simply pushed to the left, unlocking the barrels from the breech block. An extractor pushes the spent casing from the chamber and fresh cartridges are manually loaded through the breech. Simply pushing the barrels back into alignment with the stock locks the action closed again. Some break actions have external hammers which must be cocked manually, while others use internal hammers that are cocked automatically as the action is opened or closed.

Another type of break action can be found on the HK69 grenade launcher. In this case, the action is hinged at the muzzle rather than the breech end of the barrel. Some types of Beretta automatic pistols use this feature as a redundant loading method.

Lever Action

Method of opening the breech of a rifle by the use of a lever lying below the butt and usually forming an extension of the trigger guard. The most common examples are the various rifles by Winchester, Savage and Marlin. Rarely seen on military weapons due to the difficulty of using a lever action when lying prone.

In this type of operation, a lever is formed as part of the trigger guard, into which the remaining fingers of the firing hand are placed. The bolt is opened as the lever is pushed in a sweeping arc, forward and away from the rifle. As the bolt moves to the rear, it cocks the trigger mechanism. A loading ramp below the bolt swings down and collects a cartridge from a tubular magazine underneath the barrel (though box magazines are sometimes found, as on Browning's Winchester 1895 rifle). As the lever is brought back and up to the rifle, the loading ramp is cammed upward to align the cartridge with the bolt. The bolt then pushes the cartridge into the chamber, and camming action of the lever locks the bolt closed. A shot can then be fired. As the lever is actuated to load a new cartridge, the spent cartridge case is extracted and ejected through the top of the rifle.

Lever action rifles with tubular magazines are usually loaded through a port in the right side of the receiver. This must be done while the bolt is closed because the loading ramp will block the port otherwise. Cartridges are simply pushed bullet-forward through the port and into the magazine, one after another.

This type of action has three major shortcomings. While relatively quick to load (as manual actions go), operating the lever while lying prone is difficult. Most lever action rifles use a tubular magazine which stores cartridges end to end. This configuration is not capable of storing pointed, ballistically efficient bullets because recoil might cause cartridges to ignite within the magazine. As such, flat point bullets are used and are not capable of the level of accuracy that pointed bullets can acheive. Lastly, as cases are ejected from the top of the rifle, scopes are difficult to mount on lever action rifles. However, long eye relief scopes can be mounted to the barrel well forward of the ejection port, in what has come to be called the "scout" configuration.

Pump Action

A type of operation in which a handle (primarily horizontal although often vertical) is manually cycled or pumped in order to extract a spent cartridge and load a fresh one. Most often used with tubular-magazine weapons.

This type of action is nearly synonymous with the word "shotgun," though rifles that use this type of operation do exist, such as Remington's 7600. Internal operation is essentially the same as a lever action, though externally, the shooter interfaces with a slide mechanism mounted parallel to and underneath the barrel, which usually surrounds a tubular magazine.

Cartridges are loaded through a port underneath the action, into the tubular magazine below the barrel, one after another. The bolt must be closed in order to load the magazine. As the shooter pulls the slide to the rear, an arm (or arms) attached to the bolt pushes the bolt to the rear. As the bolt moves to the rear, it cocks the trigger mechanism. A loading ramp below the bolt collects a cartridge from a tubular magazine underneath the barrel (though box magazines are sometimes found, as on Remington's 7400 rifle). As the slide is pushed forward to its original position, the loading ramp is cammed upward to align the cartridge with the bolt. The bolt then pushes the cartridge into the chamber, and camming action locks the bolt closed. A shot can then be fired. As the slide is actuated to load a new cartridge, the spent cartridge case is extracted and ejected, usually through a port in the side of the receiver, though certain brands (Ithaca) eject the case through the loading port in bottom of the action.

Locking Block Action

The term "locking block action" covers a pretty wide variety of different types of actions, all of which are breech loaded, single-shot firearms. These were probably the first type of rifles used for competition purposes, as the barrel can be attached very rigidly to the receiver, making the rifle very strong and accurate.

Dropping Block actions cover the famous Sharps single shot rifle (as seen in the movie *Quigley Down Under*) and the Ruger No. 1 rifle, among others. Both of the aformentioned rifles incorporate a lever around the trigger guard which actuates a dropping breech block located behind the barrel. As the lever is swung forward, the breech block drops straight down into the receiver, clearing a path to the chamber. A single round can then be loaded manually. The lever is then moved back to its original position, locking the block upward by camming action. From here, each rifle differs. The Sharps rifle used an external hammer which was cocked manually after loading. The Ruger No. 1 has an internal hammer, which is cocked as the action is opened.

Another type of locking block action is Remington's **Rolling Block** action. This rifle incorporates what appears to be two external hammers. In actuality, the first "hammer" is a locking block that can be "rolled" to the rear only after the actual hammer, located behind the block, is cocked. With the block rotated open, a path to the chamber is clear. A cartridge can the be manually loaded into the chamber. The block can then be rotated forward. The rifle is now ready to fire. Obviously, this is a very simple action, and one that was popular in its day for that reason.

Italicized text exerpted from the *Greenhill Military Small Arms Data Book* by Ian V. Hogg, unless otherwise noted.

Colt 1873 Single Action Army

Colt Manufacturing Corp.
Hartford, CT UCAS

Various Chamberings

Operation: Revolver

Action: Single Action

Safety:
None

Sights:
Notch rear, post front

Barrel: Various

Weight: 2.59 lbs. (1.1 kg)

Magazine Capacity:
6 rounds, cylinder

Modes of fire:
Single Action

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
45	**.45 Colt**	**Med. Pistol**	**5**	**6 cyl**	**SS**	**8M**	**1.1**	**4/48 hrs**	**450 ¥**
4440	**.44-40 WCF**	**Heavy Pistol**	**5**	**6 cyl**	**SS**	**9M**	**1.1**	**4/48 hrs**	**750 ¥**
3220	**.32-20 WCF**	**Med. Pistol**	**5**	**6 cyl**	**SS**	**6M**	**1.1**	**4/48 hrs**	**750 ¥**
44SPL	**.44 Special**	**Med. Pistol**	**5**	**6 cyl**	**SS**	**8M**	**1.1**	**4/48 hrs**	**750 ¥**
38357	**.357 Mag**	**Heavy Pistol**	**5**	**6 cyl**	**SS**	**9M**	**1.1**	**4/48 hrs**	**750 ¥**

- 7.5" barrel reduces Conceal to 4 and increases weight to 1.3 kg. Increase range by one class.
- All models are available with bright nickel finish for an additional 100¥.
- Requires a Complex Action to empty a number of chambers equal to the character's Quickness attribute, and another Complex Action to load chambers at the same rate.
- Models chambered in .357 Magnum may also fire the .38 Special cartridge. When using .38 Special ammunition, drop Damage Code to 5M and range to Light Pistol.

Signifying one of the guns that tamed the American West, the Model 1873 Single Action Army "Peacemaker" revolver as well as close copies of it are still manufactured today by several companies including American Western Arms, Cimarron Firearms, EMF, Freedom Arms, Heritage Manufacturing, Magnum Research, Navy Arms, Ruger and Uberti, among others.

Available in .32-20, .38/.357 Mag., .44/40, .44 Special and .45 Colt calibers. Barrel lengths offered are 3.5", 4", 4.75", 5.5" and 7.5".

Model 1911A1

Springfield Armory
Geneseo, IL UCAS

.45 ACP

Operation: Short Recoil

Action: Single Action

Safety:
Frame-mounted, left side

Sights:
Fixed 3-Dot

Barrel: 5" (127mm)

Weight: 2.34 lbs. (1.06 kg)

Magazine Capacity:
7 rounds, single stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
1911A1	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**1.05**	**2/24 hrs**	**640 ¥**

The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

It could be argued that all self-defense pistols have their genesis in the M1911 design in one way or another. One thing is certain. The M1911 and .45 ACP cartridge changed the world. Both just happened to be products of the genius of one man.

The M1911 was designed by John Browning and adopted by the United States Army in 1911. Slight non-mechanical revisions were made to the design, most noticably an arched mainspring housing along the butt of the grip, a shortened trigger and a recess cut into the frame behind the trigger well. The revised weapon was called the M1911A1 and was adopted by the US Army in 1924.

The M1911 and variants were the standard sidearm of the United States military forces through four wars and 74 years. In 1985, the trusty M1911A1 was replaced by a more modern design which fired an equally venerable cartridge, the 9mm Beretta 92FS (M9 Pistol). Needless to say, 74 years of use developed a very die-hard following for the M1911 and the .45 ACP. So much so that the parts of the US Marine Corps decided to keep (and modify) their M1911A1's.

Today, many companies offer their own revised and updated versions of the M1911 design, including Armscor/Charles Daly, Auto-Ordnance/Kahr Arms, Colt, CZ/Dan Wesson, Imbel/Springfield Armory, Kimber, Norinco, Para-Ordnance, SIG Arms, Smith & Wesson, Taurus, and countless custom companies throughout North America. A few of them even offer a copy of the WWII-vintage Government Issue M1911A1.

The M1911 as well as the .45 ACP cartridge have proven themselves to be two outstanding designs, considered by meany to be near perfect for self-defense and competition use. Both will more than likely be around for many, many years to come.

Name:	Aaron Green "Failure"
Age (2060):	22 years
Sex	Male
Race:	Human
Description:	5'8", medium build. (pic)
Money:	

Character Creation Table Priorities
A. Skills (50)
B. Aspected Magician (Sorcerer)
C. 90,000 ¥
D. Attributes (21)
E. Human

Attributes	(21)
Body	3
Quickness	3
Strength	3
Charisma	3
Intelligence	5
Willpower	5
Essence	6
Reaction	4

Spells (35)	Force	Type	Target	Duration	Drain
Push	4	P	4	Instant	DL
Confusion	3	M	W	Sustained	S
Improved Invisibility	5	P	4	Sustained	+1(M)
Stealth	4	P	4	Sustained	+1(M)
Lightning Bolt	4	P	4	Instant	+1(DL+2)
Armor	5	P	6	Sustained	+2(M)
Physical Barrier	6	P	6	Sustained	+2(S)
Increase Reflexes +2	4	M	R	Sustained	+1(D)

Pools	
Combat	6
Magic	
Spell	
Karma	1

Initiative	4 + 1D6

Active Skills (34)

Combat Skills	G	S
Pistols	5	
Shotguns	4	

Physical Skills	G	S
Stealth (Sneaking)	3	5

Technical Skills	G	S
Biotech (First Aid)	1	3
Electronics (Matrix Diagnostics)	3	5
Computers (Matrix Programming)	5	7

Magical Skills	G	S
Psychometry	4	
Sorcery	6	

Knowledge Skills (25)

Academic	G	S
Computer Sciences	4	
Engineering (Matrix Networking)	2	4
Thaumaturgy	5	

Background	G	S
Chicago-area Deckers	3	

Interests	G	S
Matrix Business	2	

Sixth World	G	S
Magical Theory (Hermetic)	3	5
Matrix Theory	5	

Language Skills (7)

Academic	Sp	R/W
English	6	3
Spanish	1	1

Gear

Knives	Conceal	Damage	Weight	Cost
Victorinox Explorer Swiss Army Knife	9	STR(L)	0.2	50
Total Cost				50

Carry Firearms	Conceal	Ammo	Mode	Damage	Weight	Cost
Heckler & Koch P7M8 (9mm Para)	6	8	SA	6M	0.78	750
SIG Sauer P226 (.357 SIG)	5	12	SA	9M	0.87	700
Remington 870 Home Defense (12ga. 3")	3	6	SS	10S/10D(f)	2	300
Total Cost						1750

Concealable Body Armor	Rating	Weight	Cost
Long Coat	4/2	-	-
Vest	2/1	-	-
Total Cost			1,025

Miscellaneous	Rating	Weight	Cost
Personal Digital Assistant	-	-	500
Latex Gloves (Box)	50	-	5
P7M8 magzines (5), hollowpoint ammunition	-	0.5	-
P226 magazines (5), hollowpoint ammunition	-	1	-
20 rounds (1 box) 12 gauge 00 Buckshot			
20 rounds (1 box) 12 gauge Sabot Slug (Win SPG)			
Lifestyle (3 months paid)	Middle	-	-
Total Cost			4,185

Vehicles

Honda Acccord DX	Rating
Handling	4/8
Speed	105
Acceleration	8
Body	3
Armor	0
Signature	2
Autonav	2
Sensor	1
Cargo	10
Load	110
Total Cost	20,000

Accessories	Type	Rating	Cost
Tinted Windows	-	-	-
Chip/CD Player	-	-	-

Stats	
Seating	2 bucket, 1 bench
Entry Points	4 + 1 trunk
Fuel	Gasoline, 60 liters
Ecomomy	12.4 km/liter

SIN Number 4721-503-62519.

Aaron grew up in Marietta, Illinois, working on his father's farm. His hermetic magical talents surfaced at puberty, and soon after, he was accepted into the very small Fulton County School for the Magically Gifted. At Age 16, he was accepted into the Peoria Hights Academy, outside of Peoria, Illinois. He was given exemplary reviews from his teachers even after being implicated in several Police cases involving arson, vandalism, and robbery, none of which were solved. Upon graduation, Aaron was given a Thaumaturgy scholarship to the University of Chicago.

He is now a senior at UC, and has expressed more interest in computers and the Matrix than in his magical ability, much to the dismay of his professors. He has dropped 3 of his 5 classes involving the magical arts, and has replaced them with classes including Computer Sciences, Matrix Programming, and Matrix Networking. He now has several Matrixware certifications, (including the Matrixware Certified Systems Engineer) and could be well employed by many of the large computer-based corporations in the UCAS. Unfortunately, this has put him in danger of losing the Thamaturgy scholarship given him.

As of last January, Ares Macrotechnology of Detroit has offered him a position at their Chicago offices in their Magical Support division. However, Aaron has declined the offer and requested a Matrix Engineering position instead. Ares Macrotechnology is reviewing his request at the present time. Mitsuhama Computer Technologies, Fuchi Industrial Electronics, and Cross Applied Technologies soon followed suit with Ares' offer, but have all declined Aaron's request for a Matrix Engineer position.

Aaron's choice of friends has also been a subject not well received by his parents and professors. His parents have also expressed a sharp disagreement with his disinterest in persuing a possibly high-paying career as a company mage. Though, he seems not to be interested in his rare talents, Aaron is a very smart person, and is sure to make good of any career he applies himself to.

Name	Jeremy Kostas, aka "Jeffrey Krige", aka "Jim Byrd"
Street Names	Amirani, Khamûl, Eidolon
Age (2060)	35 years
Sex	Male
Race	Human
Description	5'11", Medium build, Brown hair, Brown eyes.
Liquid Assets	50,110¥

Character Creation
A. 1,000,000 ¥
B. Active Skills (90)
C. Attributes (24)
E. Human
F: Knowledge Skills (42)

Background Story
Dossier
Amirani

Vitals

Attributes	(24+26)
Body	5
Quickness	5 (8)
Strength	3 (6)
Charisma	3
Intelligence	5
Willpower	6
Essence	1.14
Reaction	6 (12)

Initiative

Physical
12 + 3D6

Pools

Combat	Karma
9	11

Good Karma
4

Total Karma
236

Money Earned DGP
780,430 ¥

Quick Links

- Cyberware/Bioware
- Active Skills
- Knowledge Skills
- Language Skills
- Gear
- Other
- Vehicles

- View the Arsenal
- Contacts

Cyberware/Bioware

Cyberware	Rating	Essence	Cost
Wired Reflexes (+4 Reaction, +2D6 Initiative)	2	3	165,000
Reaction Enhancers (+2 Reaction)	2	0.60	120,000
Reflex Trigger		0.20	13,000
Router (4 Ports)	4	0.14	1,600
Datajack (Alpha)		0.16	2,000
Orientation System (Alpha)		0.20	30,000
Cybereyes (Alpha) (Image Link, Clock, VisMag 3E, Flare Comp)		0.16	40,100
Smartlink (Alpha) (Pad, Rig, SL2 Processor, Rangefinder)	2	0.4	10,400
Total Cost		**4.86**	**382,100**

Bioware	Rating	Body Index	Cost
Muscle Augmentation	3	2.4	135,000
Sleep Regulator		0.3	20,000
Total Cost		**2.7**	**155,000**

Active Skills (90+178)

Combat Skills (42)	G	S
Judo (Ground Fighting, Sweep, Throw)	6	
Aikido (Close Combat, Evasion Herding)	6	
Pistols	8	
Assault Rifles	6	
Rifles	5	
Shotguns	4	
Submachine Guns	6	
Gunnery	3	
Launch Weapons	4	
Throwing Weapons (Grenades)	2	6

Physical Skills (27)	G	S
Stealth (Sneaking)	4	8
Athletics	5	
Diving	3	
Parachuting (HALO)	4	5
Disguise	5	

Social Skills (35)	G	S
Etiquette (Corporate)	3	
Etiquette (Diplomacy)	3	
Etiquette (Military)	4	
Leadership (Tactics)	5	6
Instruction (Tactics)	3	5
Interrogation	3	
Negotiation	3	
Visual Signals	4	

Technical Skills (39)	G	S
Biotech (First Aid)	3	5
Computer (Decking)	3	4
Cryptography	3	
Demolitions (Plastic)	3	5
Electronics (Wire Tapping)	3	5
Lock Picking	3	
Machining	4	
Intelligence Processing	5	

B/R Skills (29)	G	S
Ammunition (Reloading)	3	5
Assault Rifle B/R	4	
Car B/R	5	
Edged Weapons B/R	2	
Pistol B/R	5	

Vehicle Skills (22)	G	S
Bike (Motorcycles)	3	
Car (Remote Operations)	3	5

Knowledge Skills (42+45)

Street (6)	G	S
Criminal Organizations	3	
Intelligence Networks	3	
Military Procedures	5	
Police Procedures	3	
Security Procedures	6	

Academic (29)	G	S
Engineering (Mechanical)	4	6
Physics (Ballistics)	3	5
Politics (Intl. Relations)	5	
Etymology	2	
Psychology	3	

Sixth World (5)	G	S
Magical Theory (Hermetic)	3	5

Background (21)	G	S
Computers	2	
Cattle Ranching	3	

Interests	G
Classic Sci-Fi Movies	3

Language Skills (25+28)

Language	Speak	R/W
English	6	5
Arabic	5	2
Greek	3	3
Turkish	3	3
Russian	2	1
Sign Language	5	-

Gear

Knives	Conceal	Damage	Weight	Cost
Ranger Tomahawk	4	STR+1(M)	0.75	100
KBAR	4	STR(M)	0.35	90
Kukri	4	STR(M)	0.5	200
Total Cost				**390**

Non-Lethal	Conceal	Ammo	Mode	Damage	Weight	Cost
Oleoresin Capsicum Spray (Pepper Punch)	9	10	SA	12L Stun	0.5	50
Ares SuperSquirt II	7	20/20	SA	per compound	0.1	800
Total Cost						**850**

Carry Firearms	Conceal	Ammo	Mode	Damage	Weight	Cost
Glock 19, modified	6	15	SA/FA	6M	0.6	2,210
Sprindfield Armory Mil-Spec Operator, modified	4	8	SA	8M	1.6	1,560
Mossberg 590 Pump Shotgun	2	9	SS	10S/10D(f)	3.1	1,100
More weapons and gear can be found in the Arsenal.						**4,870**

Concealable Body Armor	Rating	Weight	Cost
Vest (Undershirt)	2/1	0.75	175
Jacket	5/3	3	850
Total Cost			**1,025**

Miscellaneous	Rating	Weight	Cost
Leatherman Tool (PST)	-	0.2	35
10-40x Optical Binoculars	2	0.5	100
Low Light Goggles	2	0.5	1500
Micro Tranceiver w/Subvocal mic and Earpiece	6	1	3000
Latex Gloves (Box)	50	-	5
Lockpick Kit	-	0.5	500
Electronics Kit	-	1	500
Nav-DAT GPS	-	0.5	700
Total Cost			**6,340**

Other

Expenses	Rating	Weight	Cost
Lifestyle (Middle, 12 months paid, Brockway, MT, Sioux)	-	-	60,000
Lifestyle (Middle, 12 months paid, Trabzon, Turkey)	-	-	60,000
Lifestyle (High, 6 months paid, Morin Heights, Quebec)	-	-	60,000
Vehicle Facility	-	-	200,000
Gunsmithing Shop	-	-	10,000
Electronics Shop	-	-	15,000
Pocket Secretary	-	0.5	2,000
Credstick Silver (Jim Byrd, UCAS, 20,000¥ balance)	8	-	22,000
Credstick Silver (Jeffrey Krige, CAS, $5,000 balance)	8	-	5,500
Certified Credstick (spending cash, 6,200¥ balance)	-	-	-
House Credit (Bellagio, LV; 10,395¥ balance)	-	-	-
Total Cost			**374,500**

Vehicles

Gaz-Willys Nomad	Rating
Handling	**3/3**
Speed	**100**
Acceleration	**9**
Body	**4**
Armor	**0**
Signature	**2**
Autonav	**2**
Sensor	**0**
Cargo	**18**
Load	**750**
Total Cost	**42,000**

Accessories	Type	Rating	Cost
Tinted Windows	-	-	-
CD Player	-	-	-
Bed Topper	-	-	500
Large Tool Box	-	-	500

Stats	
Seating	2 bucket, 2 folding bench
Entry Points	2 + open back
Fuel	Diesel, 90 liters
Ecomomy	7.8km/liter

Name:	Cameron Cullen Watts
Age (2060):	31 years
Sex	Male
Race:	Human
Description:	6'1", Medium build, Blond hair, Brown eyes.
Money:	Bank of NPC

Vitals

Attributes	(24)
Body	**5**
Quickness	**4 (6)**
Strength	**3 (5)**
Charisma	**3**
Intelligence	**5 (7)**
Willpower	**5**
Essence	**1.08**
Reaction	**5 (6)**
Initiative	**+3D6**
Rigged	**10+3D6**

Cyberware	Rating	Essence	Cost
SMS Vehicle Control Rig (Delta)	2		
Datajack (Delta)	4		
Display Link			
Smartlink (Delta)	2		
Orientation System w/Datasoft Jack (Delta)			
Tactical Computer (Delta)	4		
Encephalon (Delta)	4		
Electronic Vision Magnification	3		
Total Cost		5	327,700

Bioware	Rating	Body Index	Cost
Muscle Augmentation	2	1.6	
Enhanced Articulation		0.5	
Synaptic Accelerator	2	1.6	
Damage Compensator	6		
Total Cost		2.7	155,000

Active Skills (90)

Combat Skills	G	S
Unarmed Combat	6	
Pistols	6	
Assault Rifles	6	
Gunnery	3	
Throwing Weapons (Grenades)	2	4
Rifles	6	
Launch Weapons	3	
Shotguns	3	
Submachine Guns	6	

Physical Skills	G	S
Stealth (Sneaking)	4	6
Athletics	5	
Diving	3	

Social Skills	G	S
Leadership (Tactics)	3	5
Instruction (Tactics)	3	5
Etiquette (Corporate)	1	3

Technical Skills	G	S
Biotech (First Aid)	3	5
Electronics	3	
Demolitions	3	
Lock Picking	3	

B/R Skills	G	S
Ammunition (Reloading)	3	5
Pistol B/R	4	
Rifle B/R	2	
Car B/R	2	

Knowledge Skills (42)

Street	G	S
Security Procedures	5	

Academic	G	S
Engineering (Mechanical)	4	6
Physics	3	
American History	3	

Sixth World	G	S
Magical Theory (Hermetic)	1	3

Background	G	S
Computers	2	
Sign Language	4	

Interests	G
Boating	3
Classic Sci-fi Movies	3

Language	Sp	R/W
English	6	3
Greek	3	1
Spanish	2	
Italian	1	

Gear

Weapons	Conceal	Ammo	Mode	Damage	Weight	Cost
K-Bar Survival Knife	6	-	-	8L	0.75	100
Cougar Fine Blade (Short)	8	-	-	6M	0.5	800
Heckler & Koch P7M13 (w/ silencer)	6	13	SA	6L	1	650
Ares Predator II (Smart I, silencer)	4	15	SA	9M	2.75	1,100
Heckler & Koch MP-5/10N (w/Light forearm)	4	30	SA/BF/FA	7M	3.4	1,440
Heckler & Koch MP-5TX	5	15	SA/BF/FA	6M	3.4	3,300
Colt M-23A2 (Smart II, Underbarrel Grenade Launcher)	NA	30	SA/BF/FA	8M	6	1,550
M203 40mm Grenade Launcher (M-23A2)	-	1	SS	Grenade	-	-
Steyr Scout (w/Mag-2 Low-light Scope)	NA		SS	9S		
Aardvark OC Spray	9	10	SA	TBD	0.5	50
Total Cost						8,990

Ammuniton	Count	Effect	Weight	Cost
9mm Para, Glaser Safety Slug	50	Flechette	2.5	175
9mm Para, JHP	300	-		
10mm Auto, Reverse Ogive	200	+1 PR	10	500
10mm Auto, AP	50	x0.75 Armor	2.5	350
10mm Auto, Reverse Ogive	100	+1 PR	5	250
.10mm Auto, JHP	300	-	15	600
5.56mm NATO, Duplex	100	+2 PR	7.5	500
5.56mm NATO, FMJ	300		15	600
7.62mm NATO, EX Explosive	50	+2 PR	3.75	500
7.62mm NATO, FMJ-BT Match	200	-	10	400
40mm Grenade, Defensive HE	5	10S (-0.5/meter)	5	600
40mm Grenade, Offensive IPE AP	5	15S (-1/meter)	5	600
Total Cost				8,325

Armor	Rating	Weight	Cost
Vest (Undershirt)	2/1	0.75	175
Jacket	5/3	3	850
Full Suit (Black)	4/1	1.5	1,200
Full Suit (Grey)	4/1	1.5	1,200
Full Suit (Jungle Camo)	4/1	1.5	1,200
Medium Tactical Vest (Black)	7/5	3	850
Medium Tactical Vest (Green)	7/5	3	850
Nomex/Kevlar Knee Pads (Black)	1/1	0.5	100
Nomex/Kevlar Knee Pads (Green)	1/1	0.5	100
Nomex/Kevlar Elbow Pads (Black)	1/1	0.3	100
Nomex/Kevlar Elbow Pads (Green)	1/1	0.3	100
Total Cost			6,725

Firearm Accessories	Rating	Weight	Cost
3 Extra Magazines (P7M13)	13		15
3 Extra Magazines (Predator II)	15		15
5 Extra Magazines (10mm MP-5/10N)	30		25
5 Extra Magazines (9mm MP-5TX)	15		25
5 Extra Magazines (M-23A2)	30		25
5 Extra Magazines (Scout)	5		25
Firearms Cleaning Kit		0.5	50
Concealable Holster (HK P7M13)	+2	0.1	100
Suppressor (P7M13)	-2	0.2	500
Suppressor (MP-5TX)	-2	0.5	750
3 Extra Bottles OC Spray	-		30
Total Cost			2,110

Miscellaneous	Rating	Weight	Cost
Grease Paint (Black)	-	0.1	5
Grease Paint (Green)	-	0.1	5
Medkit	3	3	200
Survival Kit	-	2	100
Low-Light/Thermo Goggles (x20)	2	0.3	2,700
Leupold 10x Optical Binoculars	1	0.5	100
2 Mini Maglites (for MP-5 light forearm)	-	0.2	40
Tactical Backpack (Black)	-	0.3	150
Tactical Backpack (Green)	-	0.3	150
Balaclava (Black)	-	-	30
Boot Sheath (Cougar Knife)	-	-	-
Thigh Sheath (K-Bar)	-	-	-
Nomex Gloves (Black)			100
Nomex Gloves (Green)			100
Ghillie Suit	-	1.5	100
Radio Tranceiver w/Subvocal mic and Earpiece	6	1	3000
Latex Gloves (Box)	50	-	5
Lockpick Kit	-	0.5	500
Electronics Kit	-	1	500
5 Flash Packs	-	1	1,250
Total Cost			9,015

Other

Expenses	Rating	Weight	Cost
Lifestyle (Middle, 12 months paid)	-	-	60,000
Lifestyle (High, 6 months paid)	-	-	60,000
Pocket Secretary	-	0.5	2,000
Pager	-	-	10
Credstick Silver (Brian Johnson, 20,000¥ balance)	8	-	60,000
Credstick Silver (Brent Platt, 5,000¥ balance)	8	-	60,000
Certified Credstick (spending cash, 4, 550¥ balance)	-	-	(50)
Certified Credstick (in Bank lock box, 10, 395¥ balance)	-	-	(105)
Total Cost			242,010

Contacts	Type	Level	Cost
(GM choice)	Fixer	1	-
(GM choice)	Mechanic	1	-
(GM choice)	Dealer	2	10,000
(GM choice)	Armorer	2	10,000
(GM choice)	CAS Ranger	2	10,000
(GM choice)	Mafia Soldier	2	10,000
(GM choice)	Yakuza Soldier	2	10,000
(GM choice)	Ares Secretary		10,000
(GM choice)	Decker	2	10,000
(GM choice)	DocWagon HTR Pilot	2	10,000
Total Cost			80,000

Vehicles

Gaz-Willys Nomad	Rating
Handling	3/3
Speed	100
Acceleration	9
Body	4
Armor	0
Signature	2
Autonav	2
Sensor	0
Cargo	18
Load	750
Total Cost	42,000

Stats	
Seating	2 bucket, 2 folding bench
Entry Points	2 + open back
Fuel	Diesel, 90 liters
Ecomomy	7.8km/liter

Accessories	Type	Rating	Cost
Tinted Windows	-	-	-
CD Player	-	-	-
Bed Topper	-	-	500
Large Tool Box	-	-	500

Background

Cameron Cullen Watts was born on March 5, 2029 at the Sheppard Air Force base hospital in Wichita Falls, Texas USA to 1st Lt. Louis Jacob Watts and Abigail Watts. Four siblings; Deacon James (born 2027, now deceased), Courtney Ann (twin), Sarah Jessica (born 2033), Johnathan Steven (born 2038). Family relocated to Tacoma, UCAS in the spring of 2047.

Upon graduation from high school, Cameron joined the CAS Army with a group of his friends. Intent on becoming a main battle tank commander, Cameron reached the rank of Gunnery Sergeant, but fell short of his goal, becoming a FO scout group commander instead. Unhappy with his position within the CAS army, he joined the military ranks of Ares Macrotechnology, Inc. on the premise of better pay, a college education and the chance to become a team leader. Commanding officers saw a discipline problem with Lt. Watts, which earned him a first class ticket (with hazzard pay) to Desert Wars 7.

He quit after his contract expired in 2053, and was suspected of llegal off-duty courier activities and stealing military equipment during his tour in DW7. No conclusive evidence was ever found, but through these activities, Watts made some friends in shady places. He shed his identity and moved to Seattle where these friends told of the best business there was.

His whereabout remained unknown, except for semi-frequent visits with his parents, his father owning several less-than-legal automotive repair and modification shops within the Greater Seattle area. Watts seemed to disappear between October of 2056 and July of 2058.

In late 2058, he was given a position as a Systems Analyst with the Tacoma-based corporation Sandoval Military Systems, and has apparently remained with the company since.

Smartlink Cyberware

Practical Benefits

A Smartlink is a type of targeting device that allows a user to cybernetically interface with a firearm equipped with Smartlink hardware. In its most basic form, a Smartlink processes information regarding the gun's physical position in relation to the user's line of sight, theoretically allowing a shooter to react quicker and fire more accurately than another shooter of the same skill level without a Smartlink. When the gun is in Condition 0 (round in the chamber, safety off), a targeting reticle is displayed (usually in the form of a dot or crosshair, though most Smartlink systems include several user-selectable reticles and data display options), relating the firearm's point of aim to the user's eyes. This is an incredibly fast, reflexive method of engaging a target.

A similar concept can be found in previous technologies, specifically weapon-mounted "reflex" sights, which work in a way similar to the Heads Up Display (HUD) commonly found on jet fighters.

Smartlinks and reflex sights (sometimes called "red dot" sights) are similar in that they do not require the user to "aim" as it is understood in the traditional sense, using iron sights. The user simply locates the reticle, places it on the target and fires. His eyes need not be in direct line with the weapon's barrel, as must be done when iron sights or conventional scopes are used. The advantage of the Smartlink is that through the use of cybernetics, the user's eyes can focus on the entire field of vision, with both eyes open, rather than through a small area of glass or transparent plastic attached to the top of the firearm, as with a reflex sight.

The above example can be considered a passive mode of operation for a Smartlink system, and this is typically the way that Smartlink systems operate during close range engagements or if no rangefinding device is present.

History

In first-generation Smartlink systems developed during the mid 2040s, ballistic arc was calculated manually through the use of a database of rangefinding reticles stored in cybernetic memory. Each reticle was set to a specific load of a specific cartridge. Literally thousands of reticles were available in memory, activated by the Smartlink hardware attached to the gun. As the user picked up the weapon and accessed the Smartlink hardware, the hardware broadcast a signal to the cyberware, telling it which cartridge the firearm was chambered for and which set of reticles to access. The hardware also stored a set of appropriate reticles in firmware memory which would be downloaded if no appropriate reticle set could be found in cybernetic memory. The user was then provided with a default reticle (usually in the form of a red dot). This action was designed to occur within twenty milliseconds of cyberware/hardware handshake. If rangefinding was necessary for long range shooting, the user could then access the truncated, cartridge-appropriate database for the correct reticle. There was no true ballistic processing capability in first-gen Smartlink systems.

Unfortunately, first-gen targeting systems were not considered particularly useful to long range shooters, whose scope reticles provided the same ballistic compensation data while other scope systems provided image magnification and lightwave processing functions (i.e. night vision/thermographic). However, secondary functions of the smartlink system, particularly the ability to give a cybernetic "fire" command, was immensely popular with long range shooters.

When the second-generation Smartlink hardware appeared on the market in 2053, targeting data was enhanced dramatically through the addition of true ballistic processing, stored as editable tables in dedicated cybernetic memory. It was now possible to calculate ballistic arc on the fly, making long range shots much faster and easier. This was made possible by implementing rangefinding technologies (usually lidar-based, though any ranging technology could be used) into the Smartlink hardware systems. Alternately, cyberware-based rangefinding systems could be integrated through a cyberware router.

While this represented a definite step forward in firearms technology, it was met with resistance from long range shooters who did not trust the technology because it did not account for environmental variables such as wind, air temperature, humidity and other variables that can dramatically affect long range shooting. Also, because the majority of police and military operations take place at ranges of less than 100 meters, rangefinding was not necessary for the majority of users. For this reason, most second-gen Smartlink systems do not include a rangefinding system. However, most are equipped to integrate data from modular, add-on rangefinding systems.

Within a year, second-gen Smartlink systems were on the market, designed not only to process rangefinding data, but also to integrate weather-related data through the use of wind meters and full weather meters. These external units could be attached to Smartlink hardware with the appropriate datajacks. For this reason, as of 2058, many second-gen Smartlink systems designed for long range use include external datajacks dedicated for the attachment of both rangefinders and weather meters.

Subsystems

Smartlink cyberware consists of four subsystems.

Input/Output Device: The I/O device can consist of either a Palm Induction Pad (PIP), which can transfer information with a firearm equipped with an induction grip, or a Datajack, which is usually retained as a redundant I/O system on most Smartlink hardware systems. Users who have Datajack cyberware prior to installing a Smartlink system may use it as the primary I/O method. Many users, including those with military backgrounds, prefer to be "hardwired" to their weapons, as this method tends to cut signal loss down to a minimum.

Ambidextrous use of the Smartlink system can be acheived by adding a second I/O device.

Eye Display: The eye display device can consist of a simple retinal display system dedicated to the Smartlink's operation. Alternately, the information may be routed to an existing Image Link. Detailed information such as shots fired, rounds remaining, warnings (such as SAFE, NO MAG, NO SIGNAL, POWER LOW, OPEN [action open, indicating a jam or empty magazine], etc...), range to target and other information necessary for operation can be displayed at user preference.

Ballistic Processor: A ballistic processor is a computer that processes ballistic tables and/or a reticle database that is either downloaded from the firearm's firmware or is stored in dedicated cybernetic memory. Most Ballistic processors can easily handle data from two I/O sources, such as a smartlinked gun in each hand.

ADVAT.228 protocol Passive Database Processors (PDP, Level 1) store and process a reticle database only (up to 3,840 separate reticles) and cannot calculate ballistic arc on the fly. They are not true ballistic processors.

ADVAT.328 protocol Active Ballistics Processors (ABP, Level 2) store and process a ballistic table database as well as a reticle database, along with information received from rangefinders and weather meters (if available) in order to accurize long range targeting information. A ballistics processor alone does not have the resources to adjust trajectory information in real time, nor is it needed during close range engagements. A rangefinder and/or a weather meter is required to adjust trajectory information in real time. For these reasons, the ballistics processor stores a backup reticle database (up to 5,120 reticles) so that the user can adjust for elevation and windage manually. In this case, the ABP system functions passively, just like an ADVAT.228 system. Because of this redundancy, ADVAT.328 cyberware is backward-compatible with ADVAT.228 hardware systems.

Ballistic/reticle data stored in cybernetic memory can be adjusted via datajack and is the preferred method of ballistic information storage by military personnel. Ballistic data stored in this manner usually covers a limited number of loads for a wide variety of cartridges.

Because of differences in barrel length, charge weights, muzzle velocities and other variables from firearm to firearm, accurate ballistic data must be collected during range shooting/target practice through the use of chronographs and other ballistic testing devices and methods, though pre-generated ballistic tables are available commercially (though they are usually restricted) and on the matrix.

Ballistic processors compensate for drop only when range-to-target information is provided. They do not adjust trajectory information for wind or other environmental factors unless that data is collected and fed into the processor with a wind or weather meter. (See hardware.)

Limited Simsense Rig: A simsense rig offers more methods of data transfer an interpretation through senses other than vision. For instance, the Smartlink may be programmed to feel more responsive to cybernetic commands when the body is in a correct firing position. Other actions may include making the firing hand feel gradually colder as ammunition is expended, prompting the user for a reload. If the trigger is pulled while the slide is out of battery, a mildly unpleasant shock may be applied to inform the user that a jam has occured or the weapon needs to be reloaded. The possibilities are almost limitless.

When cybereyes are routed to the Smartlink system, a simsense rig is not necessary for Smartlink operation. However, many users find the information that a simrig provides to be essential for optimal performance.

Game Effects

ADVAT.228 or PDP (Level 1) Smartgun links provide a -2 Target Number modifier when used. Being a first-generation passive targeting system, ADVAT.228 Smartlink systems are not designed to accomodate additional data-gathering equipment such as rangefinders or weather-sensing gear.

Level 1 cyberware systems are compatible with Level 2 hardware systems, though only Level 1 bonuses apply. The cyberware system cannot access additional Level 2 targeting data.

ADVAT.328 or ABP (Level 2) Smartgun links provide a -2 Target Number modifier when used. The +2 Called Shot modifier applies *only when a rangefinder and a simsense rig are both present*.

Level 2 cyberware systems are compatible with Level 1 hardware systems, though only Level 1 bonuses apply. The cyberware system has no additional data to access.

Integrated with a Rangefinder (routed cyber or externally mounted, it doesn't matter), ADVAT.328 Smartlink systems provide an additional -1 Target Number modifier at long range and a -2 Modifier at extreme range.

Weather-sensing equipment (see hardware) can be used to lower Target Numbers even further. The **Wind Meter** will provide an additional -1 Target Number modifier at long range and beyond. Effects *are not* cumulative per range level. (At long range, you get a -1. At extreme range, you get a -1. Period.)

The **Weather Meter** provides a -1 Target Number at long range and beyond and a -2 modifier at extreme range.

Up to five wind and/or weather meters may be "daisy-chained" to provide data, though modifiers are not cumulative. While the accuracy of the data collected is essentially left to the discretion of the GM (it may or may not help at any given time and can indeed give false readings), the more meters available that are collecting data, the better the chance that the data will be collated accurately. The functionality of this equipment is at the discretion of your gamemaster! If he/she even allows you to use these rules, you should give him/her a big fat kiss.

Complete Smartlink Systems	Essence	Legal	Avail	Cost
Smartlink ADVAT.228 (Level 1) Complete	0.5	5P-N	3/36 hrs	2,500 ¥
Smartlink ADVAT.328 (Level 2) Complete	0.5	5P-N	6/48 hrs	3,500 ¥

Smartlink Subsystems	Essence	Legal	Avail	Cost
Ballistics Processor ADVAT.228 (Level 1)	0.2	5P-N	4/48 hrs	1,000 ¥
Ballistics Processor ADVAT.328 (Level 2)	0.2	5P-N	4/48 hrs	2,000 ¥
Cybereyes (must be routed)	0.2	Legal	2/24 hrs	5,000 ¥
Datajack	0.2	Legal	Always	1,000 ¥
Eye Display (dedicated, two required)	0.1	Legal	4/48 hrs	300 ¥
Image Link (must be routed)	0.2	Legal	4/48 hrs	1,600 ¥
Limited Simsense Rig	0.1	5P-N	4/48 hrs	1,000 ¥
Palm Induction Pad (PIP)	0.1	5P-N	4/48 hrs	200 ¥
Rangefinder (must be routed)	0.1	5P-N	8/48 hrs	2,000 ¥
Router Router Port (up to 10)	0.1 0.01	Legal	Always	2,000 ¥ 500 ¥

Smartlink Hardware

Smartlink hardware represents the electronic and mechanical devices that are physically attached to the firearm itself, providing man-machine interface. These devices can be integrated into a weapon design, allowing for maximum cybernetic functionality, or the Smartlink can can be retrofitted to a "dumb" firearm, allowing for the use of Smartlink targeting data, but usually without full cybernetic functionality.

Targeting Systems

The targeting system electronics, which measure and relate data concerning the angle of the firearm's bore to the user's eyes, constitute the basic functionality of every Smartlink system. These electronics must be calibrated regularly to assure targeting accuracy. In this way, the Smartlink is no different from any other sighting device. It must be zeroed in order to be effective. A Smartlink can be knocked out of alignment and made essentially useless if knocked hard enough. It's a good idea to keep your iron sights intact. Just in case.

More sophisticated ways of collecting data are available to accurize long range targeting. These devices are usually not included with a basic Smartlink system, but most smartlink systems are designed to accomodate them as modular items by including a set of five datajack ports: one as a dedicated rangefinding port, another as a dedicated weather meter port, another as a dedicated guncam port, and the last two as a backup I/O ports, capable of supporting either a rangefinder, weather meter, guncam, or cyberware/goggle I/O.

Rangefinders for Smartlinks are most commonly lidar-based systems operating in the infrared spectrum that bounce a short burst of light energy off of a target to determine its distance. However, other methods of determining range are available, such as radar or ultrasound (relatively slow, but ultrasound sonar has proven itself to be a very effective target acquisition medium in underwater operations). Cybernetic rangefinders can also be routed for use with Smartlink systems (see above). Hardware systems come in two basic varieties: low power and high power.

Low Power Rangefinders (LPR) have a range of 300-500 meters, depending on the reflectivity of the target. Objects such as clothing will not return light as well as something like a car door. These units are relatively small and will run continuously for several days using regularly available batteries.

High Power Rangefinders (HPR) have a range of 1,500-2,000 meters, depending on the reflectivity of the target. Again, objects such as clothing will not return light as well as something like a car door. These units eat common batteries like they're going out of style. However, high-density batteries are available and will supply enough power for limited sustained use. HPRs can be used as target designators as well, with adjustable beam frequency and amplitude patterns for added designation security.

A **Wind Meter** is a simple electronic device about the size of a small cell phone that includes an impeller and connects to a Smartlink via datajack port. The wind meter measures wind velocity and direction, giving readings for maximum velocity and average velocity over time. This device can be connected to a Smartlink via datajack cable (max distance 328ft/100m) or LOS wireless (Encryption 8, max distance 3280ft/1km).

The more sophisticated **Weather Meter** is only slightly larger. It measures wind velocity, wind direction, temperature, wind chill, relative humidity, heat index, dew point, altitude, density altitude, and barometric pressure. Obviously, very accurate targeting data can be obtained using a Weather Meter. This device can be connected to a Smartlink via datajack cable (max distance 328ft/100m) or LOS wireless (Encryption 8, max distance 3280ft/1km).

Smart Goggles are non-cyber versions of the Smartlink technology. While reticle database and ballistic processing is handled in exactly the same fashion as cybernetic systems, goggle users obviously cannot issue cybernetic commands and cannot take advantage of simsense functions. Unless stated otherwise, treat goggles just like the cybernetic systems. (-2 Target Number modifiers, rangefinder and weather meter modifiers, etc...)

Cybernetic Integration

The level of cybernetic integration can differ greatly from firearm to firearm. The maximum level of cybernetic integration can be found on extremely expensive, custom-built firearms. However, many of the commands that these systems supply are considered superfluous by serious firearm practitioners. Being a tool that people tend to stake their lives on, a firearm is usually designed to be as simple as possible. The less parts and gadgets involved, the less there is to go wrong. However, this ideology has not stopped the technology from being developed beyond the bounds of practicality.

Being that most firearms are mechanical devices, adding cybernetic integration can be an expensive endeavor. It requires that an electro-mechanical device be added to the firearm in order to physically perform the command. However, firearms with electronic firing systems, such as those found on many target and sniper-type rifles, make it much easier to integrate cybernetic interface systems for the obvious reasons.

There are three basic cybernetic commands that are common to all integrated smartlinked firearms. These are the **safety toggle**, the **magazine eject**, and the **cybernetic trigger** commands. The first two are self-explanatory, but the cybernetic trigger may need more explanation. The cybernetic trigger is a very popular modification for military snipers and police shapshooters. It allows for less movement of the weapon as a shot is fired, helping to increase accuracy and shot-to-shot consistency. Cybernetic triggers are usually installed *in addition* to the mechanical trigger, which is retained for redundancy purposes. For safety reasons, a "cybernetic control" position is added to the safety (both mechanical and smart, if available) of the firearm. The cybernetic trigger may only be activated when the safety is in this position.

All Smartlink hardware systems include the **Personalized Safety System (PSS)** as standard equipment. In weapons equipped with a smart safety or a cybernetic trigger, the PSS prevents the weapon from being fired unless it is in contact with a Smartlink system that carries the proper serial number (Encryption 8, multiple users possible). In weapons without a smart safety or cybernetic trigger, the PSS prevents the Smartlink from functioning. It may still be possible to fire the weapon manually, depending on the level of cybernetic integration. The PSS can be disabled per user preference.

Description	Mount	Conceal	Wt	Avail	Cost
External Smartlink ADVAT.228 (Level 1)	U/T	-1	0.20	4/48 hrs	600 ¥
External Smartlink ADVAT.328 (Level 2)	U/T	-1	0.25	6/48 hrs	800 ¥
Integrated Smartlink ADVAT.228 (Level 1)	Internal	NA	0.15	as weapon	x200%
Integrated Smartlink ADVAT.328 (Level 2)	Internal	NA	0.15	as weapon	x250%
Guncam	U/T/S	-1	0.25	4/48 hrs	1,000 ¥
Laser Rangefinder (500m)	U/T/S	-1	0.25	6/36 hrs	500 ¥
Laser Rangefinder/Designator (2km)	U/T/S	-1	0.25	8/48 hrs	1,400 ¥
Smart Goggles (Level 1)	NA	0 (6)	0.1	3/36 hrs	3,000 ¥
Smart Goggles (Level 2)	NA	0 (6)	0.1	4/36 hrs	3,500 ¥
Smart Magazine Eject (modification only)	Internal	NA	0.05	4/2 weeks	200 ¥
Smart Safety (modification only)	Internal	NA	0.05	4/2 weeks	250 ¥
Smart Trigger (modification only)	Internal	NA	0.05	4/2 weeks	750 ¥
Weather Meter	NA	8	0.1	4/48 hrs	150 ¥
Wind Meter	NA	9	0.05	4/48 hrs	30 ¥

Shotguns and Damage Codes

How do you explain the difference in Damage Codes between shotguns that use the same gauge shell, smart guy?

> **Answer:** Barrel length. It has a big factor.

Retaliatory Statement: But some of them have the same Conceal rating!

> **Answer:** Call FASA and ask them where they get whatever drug it is that makes them write 8's and 9's when they should be writing 10's. They finally got it close to right with the Defiance T-250 in **SR3,** except that it has a 4 Conceal rating. Hence, I say the Mossberg CMDT and Enfield AS-7 both do 10S/10D Damage. Anything with a short barrel should do 9M/9S. (Effectively swapping damage for range, which makes sense for shotguns.)
>
> All modern combat shotguns use a 12-gauge shell because it is the most versatile. Not nearly as much recoil as a 10-gauge, and more shot loaded than a 16-gauge shell. So making them different gauges for Shadowrun is not very realistic.

Weapon Classes, Cartridges and Damage Codes

Awright, smartass. How do you explain the difference in Damage Codes between pistols and SMGs that use the same cartridge? And for that matter, LMGs and MMGs, and HMGs and big ass Sniper Rifles that use the same cartridge?

> **Answer:** Barrel length again (for pistols and SMGs). Precision machining and rifling, and the type of ammunition for the difference between HMGs and Sniper Rifles. In reality, the difference between an LMG and an MMG is a matter of role more than the type of round it fires (another FASA flub). However, quite a few HMGs fire a much larger round than other LMGs and MMGs, such as the .50 BMG.
>
> I've come to the conclusion that as far as Sniper Rifles are concerned, they're using a heavier cartridge than the Light and Medium Machine Guns would. We relate most Machine Guns and Sniper Rifles to the 7.62x51mm NATO cartridge today, but slowly, there is a trend developing that sniper rifles should generally fire a heavier, longer range cartridge for anti-personnel use, such as the .338 Lapua Magnum. By the time 2060 rolls around, this very well could be a common practice.

Pistol vs. Submachine Gun Damage Codes

But why is the Power Rating actually LOWER in higher caliber SMGs? For instance, your site says that the Ares Predator uses the 10mm Auto cartridge and it does 9M, and the SCK Model 100 uses the same cartridge, but does 7M? What the hell is that all about?

> **Answer:** First Edition: Heavy Pistols weren't any better than Light Pistols. Street Samurai Catalog: Firepower ammunition. (What a nightmare.) Second Edition: Fixed!! Sorta... We'll call that the "**FASA Factor**". These guys do have a game to put out (a damn fun one at that), and they have to balance things somehow. This is one of the very rare instances where I somewhat agree with them in one respect. Game balance is the only thing that could possibly explain it.
>
> However, this system isn't very realistic, which is why I've made an effort to clear things like this up in the Ammunition by Caliber section.

Cased vs. Caseless Cartridges

The canon rules state that any weapon can use either cased or caseless ammunition. Can any cased cartridges from your Cartridge Table be made into a caseless round?

> **Answer:** Theoretically, yes.

Hey!: Then why is it so stupid for a company to have a two versions of a gun available for use with both kinds of ammunition (cased or caseless)?

> **Answers:** First, read this. Then read this:
>
> 1. Design) Think of it this way: Cased ammunition is self-contained. When the firing pin strikes the primer cap of the cartridge, a small explosion happens *within the case*. The gases expand, pushing the weak link (that would be the bullet, hopefully) out of the weapon the only direction it can go, which is out through the barrel. Then, the weapon must discard the spent case somehow in order to make room for the next cartridge.
>
> With caseless ammunition the cause is the same, the effect just happens in a different place. Since there is no case, the small explosion happens *within the chamber*. The chamber of the weapon must be completely sealed off from outside atmosphere or a loss of pressure will occur, producing one of two or possibly both major effects:
>
> - The bullet will have a less-than-intended effect. Accuracy, not to mention everything else, will suffer.
> - The weapon will explode in the user's hands, damaging the weapon and possibly the user.
>
> However if it all works out as planned, the weapon can skip the entire step of discarding the case, which means going straight to the step of loading another cartridge. Know what this translates to? A much faster rate of fire (ROF). This is the major benefit of the caseless cartridge.
>
> 2. Production) We're talking money here. In order to make the weapon truly take advantage of the caseless design, this means separate R&D for both versions of the weapon and then a production line that has to be split at some point, if not separated completely. That costs a lot.
>
> 3. Ballistics) The desired effect for a firearm is for the bullet to hit its target exactly where the person firing the weapon aimed it, with minimal arc. This means it must have as flat a trajectory as possible. The heavier the bullet, the harder it will be for this effect to be accomplished within the tolerance of recoil. (Every action has an equal and opposite reaction!) More energy is required to push a heavier object the same distance as a lighter one. (Get a big rock and a little rock and see how hard you have to push to throw it 10 feet.) Ah, Physics.
>
> You learned this silly shit in 6th grade, you say? Why the hell is this relevant to the conversation, you say? Because it gives us an idea of what we're stepping into before we make a 5.56mm caseless round with the same ballistics as the 5.56mm NATO round. Why even *make* the round if you can achieve better ballistics with a smaller bullet? (You: Uh, because it's just a game, man. Me: It's never "just a game!" You: "Calm down, man.") The real answer has yet to be discovered.
>
> 4. Social impact) What is one of the best ways to link a gun to a crime scene if the gun is not present? You guessed it. The expended cartridges cases. It is my belief that caseless ammunition will never be available to the public, and this is one of the reasons. (No caseless ammo for the public means less sales off the bat. We're back to money here.) No case, less evidence to convict your perpetratin' ass. Notice I said LESS evidence. There's still a bullet and ballistic forensics looking for you.

Lack of Legality and Street Index on the Site

Why don't any of your weapons have Street Index or Legality Ratings included with their stats?

> **Answer:** Ah. We've found a personal preference sure to cause a stir. IMHO, GM's should charge whatever they damn well please while in game play. The Street Index value is a useless number that has the potential to cause more arguments among players and GM's than it's worth. It also adds to confusion.
>
> As for the Legality Ratings, in each weapon's FCG Design table, there lies a **Grade** Rating. it comes in three values: **Civilian**, **Security**, or **Military**. GM's should be able to cross reference like weapons and come up with a number they like.
>
> A little common sense never hurt anyone.

Pistols Versus Revolvers

This discussion came up in the 6 Shooters????? thread on the Dumpshock Forums. I thought it would be a pretty good idea to post my answer here.

> My take is that the reliability issue with semi-autos vs. revolvers is really a not a big one as long as you have a few functioning brain cells. There are bad semi-autos and there are bad revolvers. Being the one who's life is depending on it, it's your responsibility to figure out what works and what doesn't before you get yourself into serious shit. Otherwise, Natural Selection™ may have you grabbing your ankles. There are advantages and disadvantages to both kinds of handguns.
>
> **Revolvers**
>
> Revolvers are generally more reliable off the shelf with a wider range of loads than semi-autos because, unlike semi-autos, revolvers don't depend on the pressure the fired cartridge generates to rally up the next round; just your brain and your fingers. They can be made comfortable for just about anyone.
>
> Revolvers, especially the double-action type, are almost fool-proof to operate. No manual safeties, just "point-and-click" simplicity.
>
> On the down side, they're relatively slow to reload (clips can alleviate some of that), have a relatively limited ammunition capacity and they can't be suppressed easily because propellant gases tend to leak between the cylinder and the barrel's forcing cone. They also may be a little more difficult to conceal compared to a pistol of the same power and capacity because of the diameter of the cylinder.
>
> **Semi-Automatic Pistols**
>
> Most semi-auto pistols are very reliable with whatever load the are designed for and usually many more. They can be tailored for extreme reliability with a specific load. Semi-autos usually have a greater ammunition capacity than a revolver. They are generally quicker to reload, assuming one has a few loaded magazines. They can be suppressed easily. Some (like the Glock or Beretta 92) can also be modified to fire full-auto very easily (not that that's terribly helpful, but it is an option).
>
> Double-action only (DAO) pistols (like the Glock or Kahr) have the same operational simplicity as double-action revolvers. No manual safeties, just the trigger and the pressure of your finger.
>
> On the down side, pistols can be finicky about the load used. They can become less reliable as they get dirty; some deal with this better than others. Some have manual safeties that can be forgotten about in the heat of the moment. Some, especially those with double-stacked magazines, can be larger around the grip than people with smaller hands are comfortable with.
>
> In the end, it's really just a matter of preference. The mind is the weapon, the tools are largely inconsequential. All of this is irrelevant if you haven't become intimately familiar with whatever weapon it is you plan on keeping with you, safe handling procedures for it and the tactics involved with using it.
>
> That said, I find semi-autos to be the more useful of the two in most situations.

Revolvers and Southpaws

This this is a continuation of my reply, relating specifically to using revolvers left-handed.

> I'm left-handed as well and I have had a more trouble with the fact that a revolver's cylinder release is on the left side and cylinders ALWAYS crane to the left side of the frame. I either have to switch hands or put myself into a rather vulnerable position (muzzle down, cylinder away from me) before I can begin reloading. That is a bigger problem than most I have encountered with semi-automatics. As a result, I've decided to become proficient with revolvers from my right side exclusively.
>
> As for semi-autos, the most lefty-friendly models I've found are Hecker & Koch's USP pistols. The magazine release is ambidextrous, the control lever (safety/decocker) can be ordered on the right side of the frame. Only the slide release lever is on the left side of the pistol, and it's in a very convenient place for left-handers. Your trigger finger can disengage it.

[BACK]

wasted my time to do so, I would inevitably receive regular email from people such as yourself telling me how wrong I am.

I did state somewhere on my site (obviously it's buried and I should make it more available) that if you don't like the cartridge designations, CHANGE THEM. But the new round you create is going to have a very similar tactical function.

The bottom line is this: If you don't like it, YOU change it. I spent far too much time on creating this stuff as it is. If it doesn't fit into your view of the future, CHANGE IT. I'm getting a little tired of people whining about things they don't like and doing nothing about them themselves. You have initiative (hopefully). Take it.

4)Almost all your weapons are _MORE_, not less, effective than existing SR weapons. This is foolish on several points. Firstly, it connects to the flaws I have pointed out above. Even remachined 20th Century weapons would be way behind SOTA in 2060 unless rechambered for 2060s rounds, in which case their mechanisms would likely still be sub-SOTA, and they would hardly be the same gun at all.

Well, I'm glad that you are apparently a time traveller and here to tell me that all firearms 60 years in the future will be completely different from the firearms of today. Do you realize how baseless that statement is? I suggest you learn more about firearms. You would retract that statement very quickly.

Secondly, in destroys game balance.

Yet another baseless opinion.

Sure, most of your guns are fairly pricey,

Most prices are based very closely to their unit replacement cost or retail price for that reason. Firearms are expensive. But then again, I guess you could adjust the cost however you see fit, considering you were competent enough to subtract, or simply make up numbers closer to your vision of reality.

but that makes no odds to the average Street Sam or Merc character who starts with 400000, 650000 or even 1000000 Nuyen. Thus the guns are then simply _better_ than existing ones, and are used in their place. Your "these guns are mil-spec., and won't be seen on the street" statement makes no sense in SRs setting where existing gangs and even low-grade runners pack LMGs, Grenades and assault rifles.

And we all know how realistic that is. I fear that a large part of our disagreements come from how each of us percieves the future, and our individual interactions to the intracacies of the SR universe. They are apparently very different.

Particularly as these weapons must have been remachined or kept in private hands, and thus would be, if anything, commoner on the street. Thirdly you blantantly ignore existing examples when it suits, and yet follow the rules at other times, all the while attempting to use "realism" as your "human shield".

Really. Your idea to remachine them would be a speculation that has no basis in fact. I don't believe that would be the case.

By the way, you're right. Some of these "superior" weapons probably would be more common on the streets. (most of the listed HK weapons, for example) I guess that says something about the state of affairs with current FASA-published weapons.

Well, I'm here to put a "HEAT"-style Beretta AR-fired 5.56mm round between your eyes, and force you to drop the little girl that is "realism" (sorry, got a bit carried away there... ;)

It was a semi-automatic variant of the Fabrique Nationale FNC, actually. ;)

You are being unrealistic and biased towards 20th Cen. weapons and ignoring anything that require imagination or following of precedent.

Hate to disagree with you once again... I'm just going through some weapons that will probably still be in use and manufactured somewhere in the world 60 years. I believe that's stated on the front page of my website.

I occasionally do come up with new weapons, apparently there aren't any that you like. And that, my friend, is YOUR problem. Not mine.

My imagination is just fine, thanks.

Take, for example, your CAR-23A2 Carbine. Good basic principle, a carbine of said weapon should exist, by all rights. Such a carbine would be classified as an SMG under SR rules, as shown by the example of the AK-97 Carbine, and should do less damage (unrealistic, but you should either follow precedent or revise _ALL_ weapons).

Well, to put it bluntly, I believe SR was wrong in that instance. However, you are correct. If I'm going to change one thing, I'd better change them all. And seeing as I have one carbine listed on my site, and cartridge Damage Codes listed for use in carbines, I believe I *did* change them all.

Since FASA has no official say on carbines, I took it upon myself to make rules for them. I will go into further detail once the "Optional Rules" section of my site goes live.

I also noticed that said weapon is behind SOTA... why the hell is this?

I have no idea. That is apparently a misprint. Thank you for pointing it out.

Such a weapon is surely up to date, whereas, say, the USP45 should be behind SOTA, as is it, by then, an old weapon firing a round by then 150 years old! .45 ACP should be totally defeated by virtually ALL SR body armour, and such a weapon should have special rules to account for this. It should certainly not be SOTA.

I've already explained my vision of what SOTA is. Your idea of what SOTA means and mine differ greatly. Yours is no closer to the truth than mine. Both are speculation.

5) I would continue this point, suggesting that if realism was truly your goal you would have re-engineered the SR weapon and armour system to some extent. It's not hard to make it more realistic.

You are correct. It is grossly disproportionate with reality. However, my website is not designed to alienate every SR player that clicks the link, by applying everything to an alternate rules system. If I get around to doing that (which I had planned on doing eventually) it will be in a separate section of OPTIONAL rules. The reason I use the current system is because, as far as SR goes, it's universal.

Assume that 6L is about right for a typical mid-low caliber pistol (anything up to and including 9mm today, for example). Use that as your base. Good solid soft body armour (ala Class 1 body armour today) should usually stop such a round,

Class IIA, actually. A 124 gr. bullet moving at 1050 fps will likely go right through a Class I vest.

and so I would suggest 4 would be a good body armour base (class 2 might be 6 and 3, 8) as reducing the check number to 2 would make it easy to stage down even accurate shots. Against unarmoured targets such a weapon would still be pretty lethal however, which is good. Higher Caliber pistols ala .40 S&W, 10mm, .357 Magnum, .45 ACP and so on should have damages in the 6-9 L-M range, given their usually greater velocity (the power) and wounding potential (the level) (If you knew SR history, you would remember that all SR "heavy" pistols have an artificial boost due the standardization of 1st edition "Max-power" ammo in the 2nd edition). I would suggest that .45 ACP would be a 6M weapon, with a low velocity but good wounding potential, and that, say the top end of the spectrum would be the ever silly .50 Cal Action Express round with good velocity and wounding potential and maybe 9M damage.

I have my own view of this, though it does not conform so closely to FASA-published material. Cased Cartridges and Damage Codes.

"Ever silly", eh? Interesting. Not very practical in a combat situation, yes. But "silly"? You're showing some ignorance here. What would you put the .440 Cor-Bon Magnum or .454 Casull at in your games? Or would those just be discounted as "silly"?

SMGs fire pistol class rounds and thus should have similar damage (1->pt increases to power in a few cases perhaps) Rifle caliber rounds generally have much higher velocities and often good wounding potential, which is sometimes offset by blow-through.

Is that so? I had no idea. Maybe I should pay more attention. There might be more stuff that's FUCKING OBVIOUS in here. ;)

I would suggest that some examples might be 5.56mm x 45mm NATO: 10M 7.62mm x 51mm NATO: 8S (Similar figures for the WP equivalents), .308 Winchester Magnum: 10S, .50 Cal BMG: 14D, .22LR: 8L. Etcetera. I'm sure you get the picture as you clearly know about firearms.

I hope you meant .300 Winchester Magnum. Again, Cased Cartridges and Damage Codes.

Sniper rifles, Assault and Battle rifles and LMG and MMGs all fire the same classes of rounds, and should not do different damages in different weapons except where affected by barrel length. SR accounts for factors like accuracy: this is why all sniper rifles have 14X damage. The shot is hard to stage down as it is accurately placed.

Your opinion, once again. Personally, I believe they thought that all sniper rifles fire more powerful cartridges compared to other weapons. We both know that's incorrect.

As for a reasoning behind the 14x Power Rating, that makes absolutely no sense at all. CALLED SHOTS account for accuracy. If I don't call the shot, the GM can place contact wherever he pleases. If I rolled one success, doing base damage, he might say I hit him in the leg. It takes *skill* to be accurate. There is a huge flaw in this line of thinking, my friend.

Why should the base Damage Code of weapons firing the same cartridge be different in any case?

1) Barrel length.

2) The implied use of only match-grade or hand-loaded ammunition in sniper rifles.

This concept has no place in a realistic system, neither does the "S" damage of MGs.

You're absolutely right about that. So why use it in Shadowrun?

The current SR system is about game balance, realism is not (though game balance could be maintained, but not by your system). Shotgun slug rounds are a tricky issue: low velocity, large and heavy, I would suggest that 8S was right for most 12Ga. rounds (maybe 9S for magnum ones), and 10S for 10Ga. weapons.

Is there a 10-gauge shotgun referred to anywhere in Shadowrun? No. There is not. All modern combat shotguns are chambered in 12-gauge, and I can almost gaurantee you they will be for years to come. I'll leave it to you to figure out why. Yet another area you seemingly have no knowledge about.

I've gone through this whole alternate damage scenario with about 15 different people in order to come up with something that fits in with the current system. Unfortunately, nothing does, and your suggested system is just as flawed as anyone else who's attempted to change just the obvious inconsistancies with the SR damage system.

You are correct in one instance, however. The current SR system is about game balance. Not about reality. However, it is not your place to say who's system (theirs, yours, mine, or anyone's) falls closest into that balance. It all depends on how you play the game, my friend.

These are all for 20th Cen. weapons. I would suggest that 20th Cen. weapons should lose 3 points of power in SR, reflecting the fact that contemporary SR weapons likely use superior forms of explosive to propel them and superior bullets, not to mention superior internal design.

Whatever you say, man. You obviously seem to know more than everyone else does about the future of small arms. If I was alone in my views, this droll would seem far less amusing.

6)Overall then, I would suggest that the current SR system is about A)Game Balance, and B)Fun. If you want realism play "Millenium's End", a superb game and a highly realistic one. If you want Elves, Predator-2s and LMGs at every street corner play Shadowrun.

Well, obviously I don't play Shadowrun the same way you do. And I play it because of the technology/fantasy balance an imagery. Because the damage system is a little less than realistic doesn't mean the world of Shadowrun sucks.

If you wish I will detail, at length exactly how the SR system is about balance and some of the places the authors say so. Also, for a cyberpunk atmosphere, yet far greater weapon realism, I would suggest Cyberpunk 2020, by R. Talsorian Games.

I don't wish anything in anymore detail from you than I've endured so far, thanks.

Now I've heard it all. Cyberpunk is more realistic weapons-wise than Shadowrun? We truly do come from opposite sides of the spectrum. We'll talk in 20 years, okay? You can appologize to me then.

About the Predator III...

I have thoroughly enjoyed viewing your site, and urge you to slap some more weapons on there. But I have a question about the Predator 3. I showed it to my GM in earnest hope that he would allow it in my campaign, and to may utter dismay he and most of the people I game with, have labeled it as a munchkin item. Because of that fact that it provides 10 points of recoil compensation, which is more than the weapon can even generate. Is that balanced? I know you want it to be a nice gun. But I think it would still be great if it only provided say, 3 points. Let me know what you think.

John

Man, I sure have been catching a lot of flak for the P3 lately. Awright. Here's the deal:

If your GM says 3 points of comp is okay but 10 points aren't, by all means, make your GM happy if you wish to use the Predator 3. Change that stat.

My point in giving the weapon 10 points of recoil compensation is due to the ERAS recoil compensation system it uses (for which there is a description in the Additions to the FCG section of my site). This system exists today in a weapon called the Bushman Individual Defense Weapon. It allows a person to fire the weapon in fully automatic mode at 400 rounds-per-minute and still achieve remarkable accuracy. In game terms, it effectively negates recoil modifiers at a considerable monetary expense.

Now if this is unbalancing, which I've heard from a lot of people lately, don't use it. Or, you can change the stats to suit your game. I don't mind.

The point is to have fun. And if your GM doesn't think it will be much fun with no recoil modifiers on one weapon in his campaign, well then I guess you've gotta go with what your GM says.

Good luck, and have fun!

Breathe.

Doesn't that feel better? Now, find a rational and logical solution to your problem. Exhaust the possibilities you have discovered. Here are a few hints:

1) 1024x768 resolution at 24 bit color will fix most display problems.

2) Make sure JAVA is enabled in your browser. If it isn't, some of things won't work.

3) You are affected by Trisomy 21. Just kidding.

If nothing you've tried works (and I do suggest that you take a few minutes to work on the problem from your end first), you can contact me at raygun2112@hotmail.com and we'll see if I can be of assistance.

If you have any problems that we can't figure out, I suggest you read the **Hitchiker's Guide to the Galaxy**, linked above, and hang the sense of it all. 42.

Open Source Intelligence (04.14.04)

Conversions

DDD MM SS and Decimal Degrees Conversions
Metric to English Conversion
Online Conversion - Common Length
Online Conversion - Common Weight and Mass
Online Conversion - Energy
Online Conversion - Pressure
Online Conversion
Recoil Energy

Defense Industry Sites

Federation of American Scientists

Federation of American Scientists
Land Warfare Systems
Rest-of-World Land Combat Systems
US Military Aircraft
US Navy Ships

Army Technology
ATK - Power Precision Performance
CIA Factbook on Intelligence 2002
CIA World Factbook
Giat Industries
global-defence.com
GlobalSecurity.org
Israel Military Industries Ltd. (IMI)
Jane's Information Group
JED
Lawrence Livermore National Laboratory (LLNL)
Manual Depot
National Defense Industrial Association
Sandia National Laboratories
security
The National Security Archive
WMD Task Force

Firearms

Accessories

A.R.M.S. International
Ajax Custom Grips
Atlantic Research Marketing Systems, Inc.
Badger Ordnance
Bagmaster Mfg. Inc.
Bianchi International
Boyd's Stocks
Buffer Technologies Recoil Buffers
C-MAG Home Page
C-MORE Systems - Products
Carbon Creations
Corner Shot®
Crimson Trace Corporation - Lasergrips
Daniel Defense
Falcon Industries Inc.
FSSG Home Page
GG&G Sights
GG&G
Hogue, Inc.
killFLASH ARD
LaserMax
Lyman Products
Marvel Products
Mech-Tech Systems
Michaels of Oregon
Pachmayr, Ltd.
Sharpshooters Supply Savage Replacement Trigger
Stoney Point Products, Inc
Sure-Fire by Laser Products
The Wilderness Tactical Products L.L.C. home page
UltiMAK

Ammunition

3-D Ammunition & Bullets
6mm Optimum Cartridge
Aguila
Alabama Ammo Inc.
Barnaul Ammunition
Black Hills Ammunition
CCI Ammunition
COR®BON - Home
Federal Cartridge Company
Garrett Cartridges Online
Glaser Safety Slug
Hornady Manufacturing
HSM Ammunition
IMI Small Arms Ammunition
Mag Safe Ammo
MK Ballistic Systems Home Page
Nammo Lapua Oy
PMC Ammuntion
Pro Load Ammunition
Remington Ammunition
RUAG Munition
SIMUNITION
Texas Ammunition Company
Triton Cartridge Corp.
Ultramax Ammunition
Winchester Ammunition
WOLF Performance Ammunition

Ballistics

An Introduction to Forensic Firearms Identification
Ballistic Coefficient
Ballistic Tools in Java.
FBI Handgun Wounding Factors and Effectiveness
International Wound Ballistics Association (IWBA)
JBM
Oehler Research, Inc.--Home Page
PATTERNS OF MILITARY RIFLE BULLETS
Precision Ballistic Coefficient Estimator
Wound Ballistics, Ballistic Injury, Stopping Power, Gunshot Wounds

Body Armor

American Body Armor
BlackHawk Industries - Finest Tactical Nylon - Online Catalog
body-armor.us
BulletProofME.com
DuPont KEVLAR® Features
Point Blank Body Armor Inc. - Body Armor for Law Enforcement
Second Chance Body Armor

Books_Magazines

American Handgunner
Gun Tests
GUNS Magazine
Guns&Ammo.com
Paladin Press Action Books and Videos
Small Arms Review

Components

AK-USA
AO Sight Systems (Ashley Outdoors)
B-Square
Bar-Sto Precision Machine
Bo-Mar Tool & Manufacturing Co.
Cavalry Arms
Chip McCormick Corporation
Choate Machine & Tool, Inc.
Cylinder & Slide Home Page
Dyna Systems (Precise Innovations LLC)
Essex Arms
GLOCKMEISTER
GlockWorks
Green Mountain
Hart Rifle Barrels
Heinie Specialty Products
Jarvis Custom
John Masen
Jonathan Arthur Ciener, Inc.
K-VAR
King's Gun Works
Krieger Barrels, Inc.
Lone Wolf Distributors
Lothar Walther GmbH
McMillan Fiberglass Stocks
Metalform
MMC Sites ... When only the BEST will do!_
Mounting Solutions Plus
NCG Network Custom Guns
Novak's Inc.
PRI Mounts
Schuemann Pistol Barrels
Shilen, Inc.
Shooting Products from B-Square
Smith & Alexander - _The Mag-Guide People_
Speedfeed, Inc. - Products
Wolff Gunsprings
XS Sight Systems

Custom

A-H

Ace Custom 45s, Inc.
Alexander Arms, LLC
Aurora Tactical
Axtell Rifle Co
Bowen Classic Arms
Briley Manufacturing, Inc.
Burns Custom Pistols
Caspian Arms Ltd.
Casull Arms Corporation
Cheyenne Tactical
Clark Custom Guns, Inc.
Custom Arms Company, Inc.
Dakota Arms
Dawson Precision, Inc
DETONICS
Dlask Arms Corp.
Earl's Repair Service Inc.
Ed Brown Products
Entreprise Arms Online
Evolution Gun Works
Gary Reeder Custom Guns
Guncrafter Industries
Heinie Specialty Products
Holland and Holland

I-P

Krebs Custom Guns
Langdon Tactical Technology
Lar Manufacturing Home Page
LaRocca Gun Works
Lazzeroni Rifles
Leitner-Wise Rifle Company
Les Baer Custom Inc.
McMillan Family Homepage
Meacham Rifles.com
Mech-Tech Systems
Morini Competition
Morini USA
Morris Custom Pistols
Mr. 40mm
Nowlin Custom MFG.
Power Custom
The Montana Rifleman

Q-Z

[illegible]

Q-Z

Ramo
Remington Law Enforcement
Remington
Robinson Armament Co.
Rock River Arms
Rossi Firearms
Ruger Firearms
SAKO
Savage Arms
SGS FireStorm
Shooters Arms Manufacturing Incorporated
Sig Arms
Smith & Wesson
Special Weapons LLC
SPRINGFIELD ARMORY
ST Kinetics _ Weapons Group
Steyr Mannlicher
Tactical Operations Inc.
Tanfoglio pistols
Taurus International
Thompson_Center Arms
U.S. Ordnance, Inc.
Vektor Arms, Inc.
Vektor
Walther America
Walther-USA
Weatherby
Winchester
Z-M Weapons

Non-Leathal

Less Lethal Munitions
TASER International_ Life Saving Defense Technology
Zarc International, Inc. Web Site

Optics

Aimpoint
ATN Corporation
BSA Optics
Burris Sports Optics
Bushnell Sports Optics
C-MORE Systems
Carl Zeiss, Inc. North America
Combat Military Optics
DOCTER Optics USA
ELCAN Optical Technologies
EOTech, Inc.
Hensoldt AG
Horus Vision
IOR - Valdada Premium European Optics
Leupold.com
Leupold
Litton Electro Optical Systems
MEPROLIGHT
Millett Sights
Night Vision Web
Nikon USA
Nikon _ Binoculars & Scopes
Schmidt & Bender
Simmons Riflescopes
SWAROVSKI _ Optics
Tasco
Trijicon Inc.
Unertl Optics
US Optics
Weaver Optics

Other

African Hunter Magazine
American Pistolsmiths Guild
ATF Online
Civilian Marksmanship Program - CMP
Concealed Carry (CCW) Database_ Home
Deactivated Gun Collectors Association
Grizzly Industrial, Inc
GunCite
IBIS TEK
IRSAIS - The Institute for Research on Small Arms in International Security
Metal Storm Limited - MST
Montana Shooting Sports Association
Precision Remotes, Inc. Home
REME Weapons Collection Index
SAAMI Online _ Index Page
SAAMI
Scope Buyer's Guide at Cabela's
ShooterNet - Competitive Action Shooting
Shooters.com
SHOT SHOW
Sick City Tactical Library Hub
Survival Gear, Gun Holsters, Military Supplies, Tactical Equipment and more - Available from Eagle Industries
Texas Armoring Corporation
Tom Gresham's Gun Talk -- High Powered Talk Radio
Welcome To Knob Creek Gun Range!
WetWorx - Power Tools for Liberty!
[NRAILA]

Reference

Ammunition

.224 BOZ Ammunition and Weapons Programme
5.56mm Replacements
CALIBERS -- The Handgun Ammunition Information Resource
Haas' Guide to Small Arms Ammunition
Modern Firearms & Ammunition
The Great 21st Century Rifle Controversy

Russian

Dragunov dot net
The AK site. Kalashnikov Home Page
The Russian Ammunition Page
Valery Shilin's GUN CLUB
World Weapons Catalog

Sniping

Longbow Tactical Engagement Rifle - Features
Mel's Sniper Page
Sniper Country - Main Page
UltimateSniper.com

10mm Owners Page
BiggerHammer.net
Boris Broadside's Home Page
Colt Automatic Pistols Home Page
Desert Eagle Pistol Knowledge Database
Fifty Caliber Shooter's Association Home
FNFAL.com _ The FAL Files
Francesco's Beretta Page
Gepard Hungarian rifle family
Glock-guns.com
Gunnery Network
Gunwriters on the Web
Heckler & Koch Mark 23 Owners Guild
HKPRO
HKPRO_ Contents
Lee-Enfield Rifle Page
M-1911 Pistols Home Page
MAC Resource
Modern Firearms & Ammunition
Polish Firearms Page
Quarterbore Homepage
rec.guns FAQ Home Page
REME Weapons Collection Index
REMTEK - ARMS
SecurityArms.com
The Gun Zone
The Illinois Firearm Resource
The Sight's M1911 .45 ACP Page
The Unofficial Heckler & Koch Home Page
The Unofficial Homepage of the Heckler & Koch G36
The Unofficial Tommy Gun Page
Valmet-Weapons
Welcome To Steyr

Refinishing

Devilbiss
KG Industries - KGCoatings.com - Metal Coatings and Lubricants
Peterson Machine Tool_ Machines_ Glass Bead Blasting Cabinets
Shooter Solution Industrial Gun Finishing Kits, Treatments & More
Ten-Ring Precision, Inc.

Reloading

Brass

MAST Technology, Inc.
Starline Brass

Bullets

Barnes Bullets Inc.
Hawk Precision Bullets
Lost River Ballistic Technologies
Nosler _Bullets for Sportsmen_
Sierra Bullets-The Bulletsmiths
Speer Bullets
Swift Bullets
Woodleigh Bullets

Powder

Alliant Powder
Hodgdon Powder Co., Inc.
IMR - Smokeless Powders for Reloaders

Presses_Dies

Corbin Main Menu
Lee Precision, Inc.
RCBS Reloading

ACCURATERELOADING.COM
Reloading Pages of M.D. Smith
SABOT DESIGNS LLC
Steve's Reloading Page
Welcome to The Reload Bench

Retailers_Resellers

A-H

Aim Surplus
American Arms
Ammo Depot
Arizona Gun Runners
BOTACH TACTICAL
Brian Dick Longarms, Limited (BDL, LTD)
Brownell's
Bull's-eye Stocks
Bullet Trap, Inc.
Cabela's Online Store
Century Int'l Arms
Cheaper Than Dirt
Contemporary Firearms, Inc. (CFI)
CopsPlus
Davidson's Law Enforcement
Elite Iron
European American Arms
Firing Line Inc.
First Defense International
Fulton Armory Home Page
Gallery of Guns - Gun Locator
GlockStore.com
GSI, Inc.
GunAccessories.com
GunBroker.com Online Gun Auction
Guns-N-Stuff (FAC)
hkpartsonline.com
The Axmen

I-P

Impact Guns Website
J&G Sales, Ltd
K-VAR
Lew Horton's
Lightfighter.com - Home
Lone Wolf Distributors - Homepage
M & A Parts, Inc.
MidwayUSA.com
Mitchell's Mausers World Wide Website
Model 1 Sales
Mounting Solutions Plus
Ohio Ordnance Works, Inc.
Ohio Rapid Fire.com
POF-USA U.S. Distributor for POF HK parts
Precision Arms - Rifles, Scopes, Ammunition, and more.

Q-Z

Reese Surplus Inc.
Sarco, Inc., Firearms, Firearms Parts and Accessories
Shedhorn Sports
Southern Ohio Gun International Inc.
Spy Headquarters
Tennessee Guns Inc.
The Axmen
Ultimate Weapons Systems
Valor Corporation

Aim Surplus
American Arms
Ammo Depot
Arizona Gun Runners
Brian Dick Longarms, Limited (BDL, LTD)
Brownell's
Bull's-eye Stocks
Bullet Trap, Inc.
Cabela's Online Store
Century Int'l Arms
Cheaper Than Dirt
Contemporary Firearms, Inc. (CFI)
European American Arms
Firing Line Inc.
First Defense International
Gallery of Guns - Gun Locator
GSI, Inc.
GunBroker.com Online Gun Auction
Impact Guns Website
Lightfighter.com - Home
Lone Wolf Distributors - Homepage
M & A Parts, Inc.
Midway USA
Mounting Solutions Plus
Ohio Ordnance Works, Inc.
Precision Arms - Rifles, Scopes, Ammunition, and more.
Spy Headquarters
Tennessee Guns Inc.
The Axmen
Ultimate Weapons Systems
Valor Corporation
Welcome to GunAccessories.com
Welcome to Lew Horton's

Suppressors

Advanced Armament Corporation
AWC Systems Technology
Brügger-Thomet AG
CCFSwiss
DVC ARMAMENTS
Gemtech Home Page
Mobilith SHC Series
New River Arms Suppressors
OPS INC
Quicksilver Class II Firearms Manufacturing
Reflex Suppressors
Rifle Suppressors - Manufactured by Percy Engineering Services Ltd.
Silent Delivery Systems
Silent Options
Sound Suppressors on High-Powered Rifles
Sound Technology
SRT Arms
Surefire Suppressors
SWR Manufacturing, Inc.
Tac-Ord
TL Guns & Manufacturing

Tools_Knives

Craftsman.com
Gerber Legendary Blades...Knives, Tools, and Outdoor Accessories
Grizzly Industrial, Inc
Leatherman Tool Group
WetWorx - Power Tools for Liberty!

Western

American Western Arms
Cimarron Firearms
Davide Pedersoli & C.
Navy Arms Company Online

Brownells.com
Deactivated Gun Collectors Association
Exploded Views
FirearmNews.com
Great Guns of the World - Free Manuals
Shootout at Blackwater
Sick City Tactical Library Hub
The Gun Zone
Welcome to Cruffler.com!
Welcome to TitleII.com

Forums

Bulldrek Forums
Dumpshock Forums (OLD)
Dumpshock forums
RPGnet Forums
Tactical Forums - powered by the Infopop
TSS Forums

Knives

AMERICAN TOMAHAWK COMPANY
Gerber Legendary Blades...Knives, Tools, and Outdoor Accessories
Leatherman Tool Group
Welcome to Columbia River Knife & Tool

Learning

Patents

B1 - esp@cenet - your gateway to patents
Firearm Related Patents (LOCAL)
United States Patent Office

A Guide To Pratical Holography
Chemical Elements.com - An Interactive Periodic Table of the Elements
Graphic Map's World Atlas and Geography Facts
HowStuffWorks - Learn how Everything Works!
HyperPhysics Concepts
LEO English_German Dictionary
Physics Classroom Table of Contents
Physicsofsound.com
The Encyclopedia Mythica
XE.com - The Universal Currency Converter (tm)

Machining

American Gunsmithing Institute
Autodesk - AutoCAD
Bridgeport
Craftsman.com
FlashCut CNC
Grizzly Industrial, Inc
How to Make Springs
MachineShopCourse.com
Machinist.org - Dedicated to Metalworking Education
Modern Machine Shop Online - Metalworking, Machine Tools, Machining Centers and Manufacturing
Pine Tree Castings
Smithy
Special Metals, A provider of Nickel Welding Wire to the World
The source for nickel alloys, MONEL®, INCONEL®, INCOLOY®, NIMONIC®, INCO-WELD®, NI-ROD®, NILO®,
Tooling University - Online, Industrial, Web-Based e-learning
Welcome to Metalworking Information

Military

Field Manuals

FM 21-60 Visual Signals
FM 21-75 Combat Skills
FM 21-76 Survival

FM 23-10 Sniper Training
FM 7-8 Infantry Rifle Platoon and Squad
FM 7-93 Long Range Surveillance Unit Operations
FM 90-10 MOUT
RDL Document Search

Tactics

CQB Tactics
Tactics

US Military

Acronyms and Glossaries
General Dennis J. Reimer Training and Doctrine Digital Library
Rank Insignia
Selected Defense Web Sites - F
U.S. Marine Corps Aircraft, Vehicles and Equipment
US Navy Shooting Team
USNI Military Database - Military Abbreviations, Acronyms and Terms

CIA World Factbook
Grunts.net - Home of U.S. Military History
NATO Official Homepage
Special Operations.Com
The Ordnance Shop
The Russian Battlefield
The U.S. Army Marksmanship Unit
Welcome to Military.com

Shadowrun

Ballista Firearms Upgrade Guidebook
dumpshock.com
e l s p u d
Shadowland Six
Shadowrun and Firearms (Dumpshock)
The Ancient Files
The Shadowrun Webring
The Sixth World
TzeentchNet Prime
wReflexes

Barnes & Noble
Dictionary.com
Google
HowStuffWorks
The Encyclopedia of Arda

Phonetic Alphabet

Did you know that I invented the Phonetic Alphabet when I was in 'Nam? Tet '68. Got 37 purple hearts. It was hell. :)

A	ALPHA
B	BRAVO
C	CHARLIE
D	DELTA
E	ECHO
F	FOXTROT
G	GOLF
H	HOTEL
I	INDIA
J	JULIET
K	KILO
L	LIMA
M	MIKE
N	NOVEMBER
O	OSCAR
P	PAPA
Q	QUEBEC
R	ROMEO
S	SIERRA
T	TANGO
U	UNIFORM
V	VICTOR
W	WHISKEY
X	X-RAY
Y	YANKEE
Z	ZULU

"Whiskey Tango Foxtrot, over."

Murphy's Laws of Combat

1. You are not a superman.
2. If it's stupid but works, it's not stupid.
3. Don't look conspicuous, it draws fire.
4. When in doubt, empty your magazine.
5. Never share a foxhole with anyone braver than you are.
6. Remember: Your weapon was made by the lowest bidder.
7. If your attack is going really well, it's an ambush.
8. No plan survives the first contact intact.
9. All 5-second grenade fuses will burn out in 3.
10. Try to look unimportant. The enemy may be low on ammo. (see rule #3.)
11. If you are forward of your position the artillery will always fall short.
12. The important things are always simple.
13. The simple things are always hard.
14. The easy way is always mined.
15. If you are short of everything except enemy, you're in combat.
16. When you have secured an objective, don't forget to let the enemy know about it.
17. Incoming fire has the right of way.
18. If the enemy is in range, SO ARE YOU.
19. No combat ready unit ever passed inspection.
20. Beer math: two beers times 37 men equal 49 cases.
21. Body count math: two guerillas plus one portable plus two pigs equal 37 enemy KIA.
22. Things that must be together to work usually can't be shipped together.
23. Radios will fail as soon as you need fire support desperately.
24. Anything you do can get you shot, including doing nothing.
25. Tracers work both ways.
26. The only thing more accurate than incoming enemy fire is incoming friendly fire.
27. Make it tough for the enemy to get in and you can't get out.
28. If you take more than your fair share of objectives, you will have more than your fair share of objectives to take. (Thank you, Sphinx.)
29. When both sides are convinced that they are about to lose, they are both right. (Thanks again, Sphinx.)
30. Professional soldiers are predictable, but the world is full of amateurs.
31. Murphy was a grunt.

International Standardization Organization
Country Codes

sorted by code: [abc] [def] [ghi] [jkl] [mno] [pqr] [stu] [vwx] [yz]

A	
ad	Andorra
ae	United Arab Emirates
af	Afghanastan
ag	Antigua and Barbuda
ai	Anguilla
al	Albania
am	Armenia
an	Netherlands Antilles
ao	Angola
aq	Antarctica
ar	Argentina
as	Americal Samoa
at	Austria
au	Australia
aw	Aruba
az	Azerbajan

B	
ba	Bosnia
bb	Barbados
bd	Bangladesh
be	Belgium
bf	Burkina Faso
bg	Bulgaria
bh	Bahrain
bi	Burundi
bj	Benin
bm	Bermuda
bn	Brunei
bn	Brunei Darussalam
bo	Bolivia
br	Brazil
bs	Bahamas
bt	Bhutan
bv	Belarus
bv	Bouvet Island
bw	Botswana
by	Byelorussian SSR
bz	Belize

C	
ca	Canada
cc	Cocos (Keeling) Islands
cf	Central African Republic
cg	Congo
ch	Cantons of Helvetia
ch	Confederation Helvetique
ch	Switzerland
ci	Cote D'Ivoire
ck	Cook Islands
cl	Chile
cm	Cameroon
cn	China
co	Colombia
com	Commercial Organization
cr	Costa Rica
cs	Czechoslovakia
cu	Cuba
cv	Cape Verde
cx	Christmas Island
cy	Cyprus
cz	Czech Republic

D	
de	Deutschland
de	Germany
dj	Djibouti
dk	Denmark
dm	Dominica
do	Dominican Republic
dz	Algeria

E	
ec	Ecuador
edu	Educational Institution
eq	Eslovaquia
ee	Estonia
eg	Egypt
eh	Western Sahara
es	Spain
et	Ethiopia

F	
fi	Finland
fj	Fiji
fk	Falkland Islands
fk	Malvinas
fm	Micronesia
fo	Faroe Islands
fr	France

G	
ga	Gabon
gb	Great Britain
gd	Grenada
ge	Georgia
gf	French Guiana
gg	Guernsey Islands (Alderney, Sark and Brethou Islands)
gh	Ghana
gi	Gibraltar
gl	Greenland
gm	Gambia
gn	Guinea
gov	Government
gp	Guadeloupe
gq	Equatorial Guniea
gr	Greece
gt	Guatemala
gu	Guam
gw	Guinea Bissau
gy	Gyana

H	
hk	Hong Kong
hm	Heard and McDonald Islands
hn	Honduras
hr	Croatia
hr	Hrvatska
ht	Haiti
hu	Hungary

I	
id	Indonesia
ie	Ireland
il	Israel
im	The Isle of Man
in	India
io	British Indian Ocean Territory
iq	Iraq
ir	Iran
is	Iceland
it	Italy

J	
je	Jersey Island
jm	Jamaica
jo	Jordan
jp	Japan

K	
ke	Kenya
kg	Kyrgyzstan
kh	Cambodia
ki	Kiribati
km	Comoros
kn	Saint Kitts and Nevis
kp	Korea - Democratic People's Republic of North Korea
kr	Korea - Republic of South Korea
kw	Kuwait
ky	Cayman Islands
kz	Kazakhstan

L	
la	Peoples' Democratic Republic of Laos
lb	Lebanon
lc	Saint Lucia
li	Liechtenstein
lk	Sri Lanka
lr	Liberia
ls	Lesotho
ln	Letonia
lt	Lithuania
lu	Luxembourg
lv	Latvia
ly	Lybia

M	
ma	Morocco
mc	Monaco
md	Moldova
mg	Madagascar
mh	Marshall Islands
mil	Military
mk	Macedonia
ml	Mali
mm	Myanmar
mn	Mongolia
mo	Macau
mp	Northern Mariana Islands
mq	Martinique
mr	Mauritania
ms	Montserrat
mt	Malta
mu	Maldives
mu	Mauritius
mw	Malawi
mx	Mexico
my	Malaysia
mz	Mozambique

N	
na	Namibia
nc	New Caledonia
ne	Niger
net	Networking Organisation
nf	Norfolk Island
ng	Nigeria
ni	Nicaragua
nl	Netherlands
no	Norway
np	Nepal
nr	Nauru
nt	Neutral Zone
nu	Niue
nz	New Zealand

O	
om	Oman
org	Non-profit Organization

P	
pa	Panama
pe	Peru
pf	French Polynesia
pg	Papua
pg	New Guinea
ph	Philippines
pk	Pakistan
pl	Poland
pm	Saint Pierre and Miquelon
pn	Pitcairn
pr	Puerto Rico
pt	Portugal
pw	Palau
py	Paraguay

Q	
qa	Qatar

R	
re	Reunion
ro	Romania
ru	Russian Federation
rw	Rwanda

S	
sa	Saudi Arabia
sb	Solomon Islands
sc	Seychelles
sd	Sudan
se	Sweden
sg	Singapore
sh	Saint Helena
si	Slovenia
sj	Svalbard and Jan Mayen Is.
sk	Slovakia
sl	Sierra Leone
sm	San Marino
sn	Senegal
so	Somalia
sr	Suriname
st	Sao Tome and Principe
sv	El Salvador
sy	Syria (Syrian Arab Republic)
sz	Swaziland

T	
tc	Turks and Caicos Islands
td	Chad
tf	French Southern Territories
tg	Togo
th	Thailand
tj	Tajikistan
tk	Tokelau
tm	Turkmenistan
tn	Tunisia
to	Tonga
tp	East Timor
tr	Turkey
tt	Trinidad and Tobago
tu	Tuvalu
tw	Taiwan
tz	Tanzania

U	
UA	Ukraine
UG	Uganda
UK	United Kingdom
UM	US Minor Outlying Islands
US	United States
UY	Uruguay
UZ	Uzbekistan

V	
va	Vatican
vc	Saint Vincent and the Grenadines
ve	Venezuela
vg	Virgin Islands (UK)
vi	Virgin Islands (US)
vn	Vietnam
vu	Vanuatu

W	
wf	Wallis and Futuna Islands
ws	Samoa

X

Y	Z

ye	Yemen	**za**	South Africa
yu	Yugoslavia	**za**	Zaire
		zm	Zambia
		zw	Zimbabwe

AKS-74U

Tulsky Oruzheiny Zavod (TOZ)
Tula, Russia

5.45x39mm

Operation: Gas, Piston

Safety: Right side selector lever, 0-1-30

Sights: Adjustable notch rear, protected post front

Barrel: 8.26" (210mm)

Weight: 5.95 lbs. (2.7 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 700-750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AKS74U	**5.45x39mm**	**Light Carbine**	**3**	**30 clip**	**SA/FA**	**8M**	**3.2**	**3/7 days**	**500 ¥**

- Both models include a side folding buttstock which provides +1 Conceal when folded.
- Muzzle brake provides -2 recoil compensation.

The Avtomat Kalashnikova is a global sensation, probably the most popular and recognizable rifle throughout the world. With some 35 million rifles being manufactured and distributed throughout Soviet satellite nations during the Cold War, the original 1947 design eventually evolved into countless variations, finding homes in the hands of army regulars, "freedom fighters" and terrorists alike.

Designed in recognition of the German WWII-era StG44, the AK-47 has come to define the term Assault Rifle: *"A light and compact selective-fire automatic rifle firing a cartridge of such power that it can deliver effective fire to a range of about 500 meters, but at the same time will permit the weapon to be fired in the automatic mode from the shoulder."*

The AKS-74U (*Avtomat Kalashnikova Skladnoi* 1974 *Ukorochennyj*) was developed at the Tula Arms Plant for use by special forces in need of a compact rifle, as well as tank, helicopter, artillery crews, and rear-echelon troops whose primary roles do not normally require them to use small arms. In these military occupations, a compact weapon with better ballistic characteristics than a pistol would better serve them in a defensive capacity. Essentially, this is the same niche the M1 Carbine was designed to fill during WWII. Since the early 1990s, this particular role has often been given the designation of "Personal Defense Weapon". The AKS-74U was subsequently adopted by Russian police forces (MVD) and has seen extensive use in various police roles.

While often considered a submachine gun by Russian forces (as it did replace several WWII-era submachine guns in Russian inventories), by Western standards, the AKS-74U is still considered a rifle due to the 5.45x39mm M74 cartridge it fires. With its abbreviated 8.26" (210mm) barrel, ballistics generated by the standard FMJ load are similar to those developed by the FN P90 (52 grain FMJ @ 2350 fps).

Tulsky Oruzheiny Zavod

OTs-14 Groza (Thunder)

Tulsky Oruzheiny Zavod (TOZ) Tula, Russia	
7.62x39mm, 9x39mm	
Operation: Gas, Piston	
Safety: Right side selector lever, 0-1-30	
Sights: Adjustable notch rear, protected post front	
Barrel: 10-18" (254-457mm)	
Weight: 6.82 lbs. (3.1 kg)	
Magazine Capacity: 20-30 rounds, detachable box	
Modes of Fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 700-750 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MVD	**9x39mm**	**Carbine**	**3**	**20 clip**	**SA/FA**	**9M**	**2.7**	**3/7 days**	**1,550 ¥**
MIL	**7.62x39mm**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.1**	**3/7 days**	**650 ¥**

- MVD model includes all parts necessary to configure the rifle into the four variants listed below.
- Forward grip provides -1 recoil compensation.

Basically a bullpup configuration of the AKS-74U, the OTs-14 Groza (*Orugie TsKIB* 14 *Thunder*) was developed by Valery Telesh (designer of the GP-25 and GP-30 grenade launchers) and Yuri Lebedev at TSKIB SOO (Central Design Bureau of Sporting and Hunting Weapons) in Tula, Russia. Development began in 1992. Production started at TOZ (*Tulsky Oruzheiny Zavod*, Tula Arms Plant) in 1994.

The Groza originated from plans to develop a modular close-combat arm capable of being configured to suit different mission requirements. In this it succeeded, but almost passed unnoticed until the Russian MVD (*Ministerstvo Vnutrennikh Del*, Ministry of Internal Affairs) realized that the 9x39mm Groza was exactly the kind of weapon they were looking for to arm their rapid reaction forces (SOBR) and special-purpose militia units (OMSN). Shortly after adoption (and subsequent use by MVD officers in Chechnya), the Russian Defense Ministry also decided that the Groza would fill a niche in the military machine. However, for this purpose it was chambered in the more available 7.62x39mm M43 cartridge.

Using the reliable long-stroke piston form of operation derived from the Avtomat Kalashnikova, the Groza includes a quick-change barrel system and carrying handle with a simple rotary, multi-aperture iron sighting system. Controls are standard Kalashnikov-type, consisting of a three-position lever located on the right side of the receiver that also acts as a dust cover when the safety is engaged. Like all bullpups, the trigger on the Groza is located well forward of the action and is connected to the rest of the trigger group parts via a long connecting rod.

The MVD's 9x39mm version of the OTs-14 Groza is issued in an aluminum case with all the necessary equipment to configure the rifle into one of four basic variations. The OTs-14-4A is a full-barreled version including a GP-30 muzzle-loaded grenade launcher. In this configuration, one trigger controls both the grenade launcher and the rifle, with a selector switch allowing independent operation of either weapon. The OTs-14-4A-01 configuration replaces the grenade launcher with a conventional trigger and pistol grip as well as a forward handgrip. The OTs-14-4A-02 configuration replaces the standard 16.3" (415mm) barrel with a compact 10" (254mm, est) barrel that includes a quick mount for the included sound suppressor. Adding the suppressor and a 6x40mm scope (quick-mounted to the carrying handle) changes the designation to OTs-14-4A-03.

The military's 7.62x39mm version of the OTs-14 Groza includes a longer 18" (457mm) barrel assembly and is capable of using any capacity of standard AK 7.62x39mm magazine.

Perhaps the most evident drawback to the Groza's design is that it cannot be configured for left-handed use. The bolt carrier cocking handle, ejection port and control lever are permanently placed on the right side of the weapon's receiver. Also, operating the fire selector may prove awkward, as it is located in the usual spot on a Kalashnikov-type weapon, to the right and behind the action. Either the firing hand must be fully withdrawn from the grip, or (more likely) the weapon must be unshouldered to operate the selector.

Tulsky Oruzheiny Zavod

Imbel MD2 and MD3

[MD3]

Industria de Material Bélico
Vila da Estrela, Amazonia

5.56x45mm NATO

Operation: Gas, Short

Safety: Left side selector switch, 0-1-30

Sights: Adjustable flip aperture rear, protected post front

Barrel: 17.71" (450mm)

Weight: 9.92 lbs. (4.5 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MD2	**5.56mm NATO**	**Assault**	**2**	**30 clip**	**SA/FA**	**9M**	**4.5**	**5/7 days**	**1,150 ¥**
MD3	**5.56mm NATO**	**Assault**	**2**	**30 clip**	**SA/FA**	**9M**	**4.6**	**5/7 days**	**950 ¥**

- MD2 model includes a folding stock. +1 Conceal when folded.
- 20-40 round magazines available (25¥). 40 round -1 Conceal.

Developed by the Brazlian company licensed to produced the FN FAL, Imbel designed the MD2/MD3 in order to provide the Brazilian government with a rifle platform based around the newly NATO-standardized 5.56x45mm cartidge. Development began in 1982. In the interest of mitigating production costs, Imbel engineers decided to keeping as many parts and tooling common to the FAL as possible. The MD1 rifle was introduced in 1983 and sent to the Brazilian army for trials. After subsequent user-inspired modifications, the rifle was designated the MD2 and series production began for both military and police contracts.

Key differences between the FAL and MD2/MD3 are that the MD2/MD3 utilize the M16-type multi-lug rotating bolt to lock the action rather than the FAL's dropping block system. The magazine well is lengthened to accept the common NATO STANAG magazine, and an M16-inspired brass deflector and spring-loaded dust cover have been added to the ejection port. The short stroke gas piston system of the MD2/MD3 omits the multi-position gas regulator of the FAL. In short, the lower receiver group is almost unchanged from the FAL, while the upper receiver has been significantly modified for use with the 5.56x45mm cartridge.

The excellent FAL Para folding stock has been retained (MD2 only), as well as the Para-type protected flip aperture and post iron sight arrangement. A relatively heavy rifle weighing in at nearly ten pounds, the MD2 is notable as being one of the more controllable rifles when fired full-auto.

Fusil Automatique Légere (FAL)

DS Arms, Inc. Barrington, IL UCAS	
7.62x51mm NATO (.308 Win)	
Operation: Gas, Regulated	
Safety: Left side selector switch, 0-1-20	
Sights: Adjustable flip aperture rear, protected post front	
Barrel: 21" (533mm)	
Weight: 9.5 lbs. (4.31 kg)	
Magazine Capacity: 20-rounds, detachable box	
Modes of Fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 600 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
50.00	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.3**	**5/7 days**	**1,500 ¥**
50.64	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**3.9**	**5/7 days**	**1,500 ¥**
StG58A	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA**	**9S**	**4.3**	**4/48 hrs**	**995 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- 50.00 and StG58A include a bipod.
- 50.64 model includes a folding stock. +1 Conceal when folded.
- 30-round magazines available (45¥). -1 Conceal.

Designed by Fabrique Nationale engineers Dieudonne Saive and Ernest Vervier, the Fusil Automatique Légere (Rifle, Automatic, Light) was developed immediately post-war in reaction to the success of the German *sturmgewehr* (assault rifle). The FAL was originally chambered for the 7.92x33mm Kurz cartridge developed by Germany during WWII. However, upon NATO acceptance of the American 7.62x51mm T65 cartridge (essentially a shortened US .30-06 cartridge), the FAL was redesigned to fire it, negating the recoil-mitigating effects of the "intermediate power" cartridge that the assault rifle concept was based around. This unfortunately makes for a rifle that is very difficult to control in full-auto mode, but is more capable than a true assault rifle in terms of long range performance. Regardless of these discrepancies, the FAL has been accepted as the standard infantry rifle of over 90 nations and is still produced and in use by many of them today. It has been manufactured in Argentina, Austria, Australia, Belgium, Brazil, Canada, Chile, Great Britain, India, Israel and South Africa. Only the Kalashnikov rifle has been produced in greater numbers.

The FAL rifle is gas-operated, utilizing a regulated short stroke piston system. Bolt locking is performed in what is considered today to be a fairly unconventional manner. Instead of using a rotating bolt similar to other popular designs like the AK, AR15/M16, and most other modern combat rifles, the FAL uses a dropping block system in which two lugs, located at the rear end of the bolt, lock into recesses in the upper receiver. When a round is fired, propellant gases are tapped from the barrel at the front sight block and pass through a user-adjustable regulator which controls the amount of gas allowed into the system. This allows the rifle to be "tuned" under adverse conditions, allowing reliable function in cold weather or in case of heavy fouling. Once gases pass the regulator, they strike a spring-loaded piston/operating rod assembly located inside of a cylinder above the barrel. Gas pressure impinges upon the piston, forcing the piston/operating rod assembly back a short distance. The rear end of the operating rod strikes the face of the bolt carrier, transferring motion to it. A spring then returns the piston/operating rod to its forward position while the bolt carrier continues travelling rearward. Camming action between the bolt carrier and bolt lifts the locking lugs from their recesses in the receiver and pulls the bolt rearward, extracting and ejecting the spent cartridge case. Spring pressure then returns the bolt carrier and bolt to their battery position, collecting a fresh cartridge from the magazine and loading it into the chamber in the process. The cycle then repeats as necessary.

After the acceptance of the StG77 by the Austrian military, the StG58 (Steyr-produced FAL) was slowly phased out of service. In the early 1990s, a North American company called DS Arms purchased the StG58 tooling and blueprints from Steyr and shipped the equipment to their facility in Illinois. Since then, DS Arms has become one of the most well-known FAL manufacturers, offering several upgrades that bring the FAL into the 21st century. DS Arms offers several variants of the FAL design in various levels of manufacturing quality, from relatively inexpensive "parts kit" guns assembled from European military contract parts, to newly manufactured rifles with modern stainless steel receivers and heavy barrels, CNC machined to Steyr's original specs.

The basic SA58 rifle, equivalent to FN's original model 50.00 includes a 21" barrel, fixed plastic buttstock, sliding aperture rear sight, flash hider and a bipod. The 50.64 model is similar to the 50.00, but includes a folding tubular metal buttstock and a flip aperture rear sight (300/600m).

The FAL is still a presence in the world today and likely will be for many many years to come.

More information about the FAL can be found at DS Arms.

Heckler & Koch P46 Universal Combat Pistol

[P46C]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

4.6x30mm HK

Operation: Delayed Blowback

Action: CDA, Double/Single

Safety: None (CDA); ambid. decocker (DA/SA)

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 5.12" (130mm)

Weight: 1.87 lbs. (850 g)

Magazine Capacity:
20 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P46	**4.6x30mm**	**Heavy Pistol**	**6**	**20 clip**	**SA**	**5M**	**0.85**	**6/7 days**	**985 ¥**
P46C	**4.6x30mm**	**Heavy Pistol**	**7**	**16 clip**	**SA**	**5M**	**0.78**	**6/7 days**	**955 ¥**

- Apply a standard x0.75 Armor Rating modifier. AP ammunition available, x0.5 Armor Rating modifier. Availability 5/5 days for all ammunition.
- If subsonic ammunition is used, the weapon's Damage Code drops to 6L, there is no additional armor piercing effect and light pistol ranges apply. If subsonic ammunition is used in conjunction with a suppressor, apply a +5 modifier to Perception Tests.
- With Smartlink 2, +450¥.

In 2002, Heckler & Koch introduced a pistol chambered in the same cartridge as their previously-released MP7 PDW, called the Ultimate Combat Pistol (UCP). Designed as a companion piece to the MP7, the MP7 and UCP are designed to compete in the same market as Fabrique Nationale's P90 and Five-seveN 5.7x28mm weapons. The UCP was subsequently type classified by the German Army Matériel Command as the P46.

Some parts of the P46 design are borrowed from the successful P2000 pistol, including the interchangeable grip backstrap and the "Constant Double Action" trigger system, which can be replaced by a more conventional double/single action trigger mechanism at the user's preference. New features include an under-barrel M1913 Picatinny Rail mount and a new delayed-blowback operating system.

The P46C is the compact variant of the P46. The barrel is shortened to 4" (102mm) and the grip is cropped. As a result, magazine capacity is reduced to 16 rounds.

Heckler & Koch USA

Fabrique Nationale Five-seveN

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

5.7x28mm FN

Operation: Delayed Blowback

Action: DAO or Single Action

Safety: No manual safety (DAO), frame-mounted (USG)

Sights: Fixed 3-Dot, or Adjustable 3-Dot (USG)

Barrel: 4.82" (122mm)

Weight: 1.36 lbs (618 g)

Magazine Capacity:
20 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
5-7 USG	**5.7x28mm**	**Heavy Pistol**	**6**	**20 clip**	**SA**	**6M***	**0.62**	**5/5 days**	**950 ¥**
5-7 Smart	**5.7x28mm**	**Heavy Pistol**	**6**	**20 clip**	**SA**	**6M***	**0.72**	**6/7 days**	**1,250 ¥**

Apply a standard x0.75 Armor Rating modifier. AP ammunition available, x0.5 Armor Rating modifier. Availability 5/5 days for all ammunition.

If subsonic ammunition is used, the weapon's Damage Code drops to 6L, there is no additional armor piercing effect and light pistol ranges apply. If subsonic ammunition is used in conjunction with a suppressor, apply a +5 modifier to Perception Tests.

The Five-seveN can be converted to fire in FA mode. A Gunsmithing (4) test is required. Base time is 1 hour. Cost is 55¥ for parts, plus any labor charges. Mode becomes SA/FA. Rate of fire is 1200 rpm.

The Five-seveN Pistol is the companion weapon to the P90 submachine gun. The Five-seveN is an easily concealable double action pistol with a large, 20-round magazine capacity. A maximum use has been made of composite materials in the frame and slide to result in an extremely light weight, 1.4 pound, design. The 5.7x28mm ammunition has the capability of penetrating body armor at extended ranges (CRISAT, NIJ Level IIIA @ 200 meters). This new ammunition features a lead-free projectile to eliminate environmental concerns.

The Five-seveN USG, a refined variation of its predecessor, features a traditional style trigger guard, M1913 Picatinny rail mount, reversible magazine release and a highly textured grip that enhances the handling characteristics. The polymer frame and slide cover create an incredibly light and easily maintained pistol. The low recoil allows for rapid and accurate follow up shots. Forged barrel with hard chrome finish has 20,000 round barrel life. Single action pistol with internal hammer. Pistol comes standard with three 20 round magazines, magazine disconnect and a cleaning kit.

The Five-seveN Smart includes all of the features of the Five-seveN USG, plus an ADVAT.328-compliant Smartlink system.

Some text courtesy FNH USA

Guncrafter Industries Model 1 1911

Guncrafter Industries LLC
Huntsville, AR CAS

.50 GI

Operation: Short Recoil

Action: Single Action

Safety:
Frame-mounted, left side

Sights:
Fixed 3-Dot

Barrel: 5" (127mm)

Weight: 2.34 lbs. (1.06 kg)

Magazine Capacity:
7 rounds, single stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
1	**.50 GI**	**Medium Pistol**	**5**	**7 clip**	**SA**	**8M**	**1.05**	**2/24 hrs**	**2,895 ¥**

The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

It could be argued that all self-defense pistols have their genesis in the M1911 design in one way or another. One thing is certain. The M1911 and .45 ACP cartridge changed the world. Both just happened to be products of the genius of one man.

The M1911 was designed by John Browning and adopted by the United States Army in 1911. Slight non-mechanical revisions were made to the design, most noticably an arched mainspring housing along the butt of the grip, a shortened trigger and a recess cut into the frame behind the trigger well. The revised weapon was called the M1911A1 and was adopted by the US Army in 1924.

The M1911 and variants were the standard sidearm of the United States military forces through four wars and 74 years. In 1985, the trusty M1911A1 was replaced by a more modern design which fired an equally venerable cartridge, the 9mm Beretta 92FS (M9 Pistol). Needless to say, 74 years of use developed a very die-hard following for the M1911 and the .45 ACP. So much so that the parts of the US Marine Corps decided to keep (and modify) their M1911A1's.

Today, many companies offer their own revised and updated versions of the M1911 design, though few have chosen to develop a new cartridge to go along with their pistol. Guncrafter Industries created the first .50 caliber 1911. According to Guncrafter Industries, "the concept was to create a practical .50 caliber 1911 without unnecessary bulk or weight, but with increased knock-down power. Factory loads for the 50 GI typically drives a 300 grain bullet at 700 -725 fps, which translates into a 210 power factor. This is achieved without loss of controllability. Firing this load feels comparable to shooting a standard. 230 hard ball factory round. However, the 50 GI is a very versatile cartridge and can be loaded to higher or lower levels, as desired.

"Another factory load drives the same 300 grain bullet at 875 – 900 fps and puts some serious stopping power downrange, while still being quite controllable for the seasoned .45 ACP shooter.

"An often asked question is whether a customer can convert his own 1911 into a .50 cal. pistol by purchasing a barrel, slide etc, from Guncrafter Industries. Unfortunately the answer is no. Serious re-engineering has taken place on both the frame, slide, magazine and barrel to create the 50 GI cal. Model No.1 pistol, and these main components of the pistol will no longer work in conjunction with std. 1911 frames, slides and barrels.

On the upside, Guncrafter Industries manufactures a conversion unit for the Model No. 1 that enables the user to shoot .45 ACP ammunition in the Model No. 1."

Guncrafter Industries

Heckler & Koch G36 Weapon System

[G36C, folded, foregrip, CCO] [G36K] [MG36 Light Support Weapon]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

5.56x45mm NATO

Operation: Gas, Short

Safety: Ambidextrous selector switch, 0-1-30 or 0-1-2

Sights: Dual; 3.5x Optical, Red dot sight, wind/elev adjustable

Barrel: Varies (see below)

Weight: Varies (see below)

Magazine Capacity: 30 rounds, detachable box OR 100 rounds, dual drum

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G36C	5.56 NATO	Carbine	3	30 clip	SA/FA	8M	3	4/9 days	800 ¥
G36K	5.56 NATO	Carbine	3	30 clip	SA/FA	9M	3	4/9 days	920 ¥
G36	5.56 NATO	Assault Rifle	2	30 clip	SA/FA	9M	3.3	4/9 days	950 ¥
MG36	5.56 NATO	Assault Rifle	NA	100 drum	SA/FA	9M	4	4/9 days	1,300 ¥
G36WS	5.56 NATO	Assault Rifle	NA	-	-	-	-	6/14 days	2,770 ¥

- All models include a folding stock. +1 Conceal when stock is folded.
- 3.5x optical sight is equivalent to Level 1 magnification. 1.5x optical sight receives no modifier.
- -1 Target Number modifier may be applied while using red dot sight at short or medium range.
- Export version of the G36 Weapon System includes the Export Sight and costs 1,770 ¥.
- All models are available with a burst trigger group (SA/BF) at no additional cost.

The G36 was developed during the early 1990s under the internal designation "Project 50" by HK engineers Manfred Guhring, Helmut Weldle and Ernst Mauch. Loosely based on the Armalite AR-18, the G36 includes some improvements necessary to take the G36 into the 21st century.

The G36 is constructed largely of a tough, carbon fiber-reinforced polymer material offering high strength, light weight, enhanced corrosion resistance, and includes a shoulder stock that folds to the right side of the receiver. The weapon is operated by a short stroke gas piston system utilizing a simple, self-regulating and self-cleaning piston. A self-contained spring-loaded operating rod connects the piston to the bolt carrier, which utilizes an M16-style multi-lug rotating bolt to perform breech locking. All control surfaces on the G36 are ambidextrous, including the fire selector, magazine release and charging handle. Semi-transparent polymer magazines with interlocking tabs allow the operator to see the contents of the magazine at a glance, as well as lock multiple magazines together in the interest of speeding magazine changes.

The G36 is also a modular weapon system. The complete weapon system including all necessary components for each variant can be purchased along with one common receiver and configured at the armorer level, or each variant can be purchased as a stand-alone weapon.

> **G36C:** Generally sold as a stand-alone weapon, the G36 Compact Carbine is designed for close range engagement, offering the penetration profile of the 5.56x45mm NATO cartridge in a package only marginally larger than the MP5 submachine gun. The G36C includes a 8.98" (228mm) chrome-plated, cold hammer forged barrel with 1/7" twist rifling, short-length vortex flash suppressor, compact handguard assembly with rail mounting hardpoints. An M1913 Picatinny Rail optic mount with integrated iron sights (protected flip aperture rear, hooded post front) replaces the standard carrying handle and optics setup.
>
> **G36K:** The standard carbine (*Kurz*; Short) variant, the G36K includes a 12.5" (317mm) chrome-plated, cold hammer forged barrel with 1/7" twist rifling, vortex flash suppressor, mid-length handguard, carrying handle and optics arrangement.
>
> **G36 Rifle:** The basic rifle and basis of the G36 series. The G36 Rifle includes a 18.9" (480mm) chrome-plated, cold hammer forged barrel with 1/7" twist rifling, standard HK "bird cage" flash suppressor, bayonet lug, full-length handguard, bipod mount, carrying handle and optics arrangement.
>
> **MG36 Light Support Weapon**: The MG36 LSW was designed to provide light support at the squad level, used in the Automatic Rifle role. It includes a 18.9" (480mm) chrome-plated, cold hammer forged heavy barrel with 1/7" twist rifling, standard HK "bird cage" flash suppressor, bayonet lug, full-length handguard, bipod mount, bipod, carrying handle and optics arrangement. The MG36 is designed to use specially modified 100-round dual-drum magazines.

Optics options include the following:

> **Dual Sighting System:** The dual sighting system consists of a 3.5x optical sight topped with electronic red dot sight. Sights are independently adjustable to meet the operational requirements of the user. The dual sight can be powered with ambient light through an open port during daylight periods. This is the standard sighting system for the G36 Weapon System.
>
> **Export Sight:** This single sight system uses a 1.5x optical sight with etched reticle integrated into the detachable carrying handle. Backup iron sights are located on the top of the sight and carrying handle. Rifles including this option are given an E suffix (i.e. G36E).

More information on Heckler & Koch firearms can be found at HKPRO.

Heckler & Koch G36/7 Weapon System

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Gas, Regulated

Safety: Ambidextrous selector switch, 0-1-3-30

Sights: 3.5x Optical, Red Dot or adjustable iron sights

Barrel: Varies (see below)

Weight: Varies (see below)

Magazine Capacity:
10, 20 rounds, detachable box
30 rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G36/7K	**7.62mm NATO**	**Assault**	**3**	**20 clip**	**SA/BF**	**9S**	**3.4**	**4/9 days**	**1,100 ¥**
G36/7	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/BF**	**9S**	**4**	**4/9 days**	**1,250 ¥**
G36/7WS	**7.62mm NATO**	**LMG**	**2/3**	**20 clip**	**SA/BF**	**9S**	**4**	**4/9 days**	**1,850 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- 3.5x optical sight is equivalent to Level 1 magnification.
- -1 Target Number modifier may be applied while using red dot sight.
- All models are available with a full auto trigger group (SA/FA) at no additional cost.

The G36 was developed during the early 1990s under the internal designation "Project 50" by HK engineers Manfred Guhring, Helmut Weldle and Ernst Mauch. Loosely based on the Armalite AR-18, the G36 includes some improvements necessary to bring the G36 into the 21st century.

The G36/7 is a scaled-up version of the G36, designed to use the NATO-standard 7.62x51mm cartridge. Realizing the that 5.56x45mm NATO weapons were not capable of ballistics necessary to accomplish all mission goals in all types of military operations, engineers at HK began a project to scale-up the G36 weapon system to the larger cartridge at the request of an undisclosed corporate client in 2011.

The G36/7 is constructed of the same tough, carbon fiber-reinforced polymer material as the standard G36. This offers high strength, light weight, enhanced corrosion resistance, and includes a steel-reinforced shoulder stock that folds to the right side of the receiver. The weapon is operated by a short stroke gas piston system utilizing a self-cleaning piston with adjustable regulator. A self-contained spring-loaded operating rod connects the piston to the bolt carrier, which utilizes an M16-style multi-lug rotating bolt to perform breech locking. A recoil-reducing tandem hydraulic buffer system takes the place of the G36 return spring assembly. All control surfaces on the G36/7 are ambidextrous, including the fire selector, magazine release and charging handle. Semi-transparent polymer magazines with interlocking tabs allow the operator to see the contents of the magazine at a glance, as well as lock multiple magazines together in the interest of speeding magazine changes. 10, 20 and 30 round capacity magazines are available. The magazine well is compatible with FAL-type steel magazines, readily avaliable around the globe.

The G36/7 is also a modular weapon system. The complete weapon system including all necessary components for each variant can be purchased along with one common receiver and configured at the armorer level, or each variant can be purchased as a stand-alone weapon.

> **G36/7K Carbine:** Designed for close to mid-range combat, the G36/7K includes a 16" (558mm) medium contour, chrome-plated, cold hammer forged barrel with 1 in 10 inch twist rifling with flash suppressor, shortened handguard with bipod mount, an M1913 Picatinny Rail optic mount with integrated iron sights (protected rotary diopter rear, hooded post front) replaces the standard carrying handle and optics setup.
>
> **G36/7 Battle Rifle**: The basic rifle of the G36/7 system includes a 22" (558mm) Heavy weight, chrome-plated, cold hammer forged barrel with 1 in 10 inch twist rifling with flash suppressor, standard handguard with bipod mount, carrying handle and dual sighting system. The dual sighting system consists of a 3.5x optical sight topped with electronic red dot sight. Sights are independently adjustable to meet the operational requirements of the user. The dual sight can be powered with ambient light through an open port during daylight periods. Alternately, a 1.5x optic with drop-compensating etched reticle is available.

This weapon is fictional. More information on Heckler & Koch firearms can be found at HKPRO.

GIAT Industries FAMAS

FAMAS F1 [FAMAS G2]

GIAT Industries (MAS factory) St Etienne, France

5.56x45mm NATO

Operation: Delayed Blowback

Safety: Ambidextrous 0-1-30 selector, separate 3RB selector

Sights: Adjustable flip aperture rear, protected post front

Barrel: 19.2" (488mm)

Weight: 7.9 lbs. (3.6 kg)

Magazine Capacity: 25-30 rounds, detachable box

Modes of Fire: Safe, semi-auto, burst OR full auto

Cyclic Rate: 950-1100 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
F1	**5.56mm NATO**	**Assault Rifle**	**3**	**25 clip**	*****	**9M**	**3.6**	**5/7 days**	**950 ¥**
G2	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	*****	**9M**	**3.6**	**4/72 hrs**	**880 ¥**
G2LP	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	*****	**9M**	**3.6**	**5/7 days**	**880 ¥**
G2SMG	**5.56mm NATO**	**Assault Rifle**	**4**	**30 clip**	*****	**8M**	**3.6**	**5/7 days**	**800 ¥**
G2C	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	*****	**9M**	**3.6**	**5/7 days**	**850 ¥**
G2S	**5.56mm NATO**	**Sport Rifle**	**2**	**30 clip**	**SA**	**9M**	**3.6**	**6/14 days**	**1,050 ¥**

F1 model includes a bipod.

The FAMAS rifle has two fire selector switches: the main selector ahead of the trigger selects between safe, semi-automatic and automatic; another located behind the magazine well switches the automatic mode between full and three-round burst. The latter switch cannot be wired to any Smartlink system. The main selector can only select SA/BF or SA/FA mode at any one time. Considering the placement of the automatic fire selector switch, one Complex Action is required to switch the weapon mode from BF to FA.

The Fusil Automatique Manufacture d'Armes de St Etienne (*FAMAS;* Automatic Rifle Arms Manufacturer of St Etienne) was developed during the early 1970s by engineer Paul Tellie. The rifle was officially accepted for service on August 8, 1977 but did not enter production until 1979, after issues with the 3-round burst mechanism had been resolved and tooling had been set up at the St Etienne factory. In addition to France, the FAMAS rifle has been sold to and used by the nations of Gabon, Djibouti, Senegal, and the United Arab Emerates.

The FAMAS is a bullpup design; there are some disadvantages inherent in this layout, but this rifle appears to have managed to overcome all but the most minor difficulties. The barrel is only fractionally shorter than that of the M16; but the entire rifle is some 250mm shorter. It operates by a delayed blowback system based on a two-part bolt similar to the well-known Kiraly design [US1073908]. On firing, the case sets back against the light bolt head, and this force is transmitted to a lever which is engaged with a recess in the receiver. As the lever is turned, it has to force the heavy bolt body back at a mechanical disadvantage, so slowing the opening of the bolt.

There is the usual semi-automatic or full automatic option, and in addition the rifle can be set to fire a three-round burst for one pressure of the trigger. There is a bipod for steadier shooting, and a sling is also provided for off-hand firing and for use when launching grenades. The iron sights are concealed inside the channel section of the long carrying handle, beneath which is the cocking handle.

A plastic cheek-piece clips on to the stock in front of the butt and covers one of two ejection openings; by removing the bolt and replacing the ejector claw on the other side, and by changing over the cheek-piece so as to expose one ejector slot and cover the other, the rifle can be converted for right- or left-handed firing in a few minutes without tools.

The muzzle is shaped to act as a grenade-launcher, and a small knife bayonet can be fitted. Despite its unconventional shape, which has led to its being nicknamed 'Le Clairon' ('The Bugle') by French troops, it is an effective and accurate weapon.

The FAMAS G2 began production in 1994. It is an updated, NATO-standardized version and is more common outside of France. The plastic lower housing includes a full-sized handguard similar to that of the Steyr AUG and a lip at the front of the fore end that prevents the user's hand from slipping in front of the muzzle. The G2 also includes a NATO STANAG magazine well (which can also accept F1 25-round magazines). The integral bipod can be replaced by ambidextrous sling swivels. Other variants of the FAMAS G2 include a "commando" variant, with a shortened 15.9" (405mm) barrel; a "submachine gun" variant with a shortened receiver, forward grip and 12.5" (320mm) barrel; and a "sniper" variant with 24.4" (620mm) heavy barrel.

In 2001, GIAT Industries announced another upgrade plan for the FAMAS rifle. The Low-Profile FAMAS (FAMAS Surbaissé) replaces the distinctive large carrying handle with a more compact scope mount (incorporating a system very similar to the US M1913 "Picatinny" rail) above a modified charging handle assembly. This allows more convenient placement of reflex sights or other sighting systems and includes a set of flip-up iron sights. There is also a small forward rail above the barrel designed to mount infrared/visible laser or whitelight systems. All upgraded FAMAS rifles include a barrel with 1/9" rifling twist and a new "deviation correcting" bipod.

Some of the weapon's description was exerpted from the book *Military Small Arms of the 20th Century* by Ian Hogg.
US Patent information: 3930316, 3938273, 3938422, 3939589, 3952440, 3978763, 3999318, 4002101, 4012844

Colt M16 Series

[M4A1 Carbine] [M4 Commando] [SOPMOD Block I]

Colt Manufacturing Corp.
Hartford, CT UCAS

5.56x45mm NATO

Operation: Gas, Direct

Safety: Left side selector switch, 0-1-3 or 0-1-30

Sights: Adjustable flip aperture rear, protected post front

Barrel: 20" (508mm)

Weight: 7.5 lbs. (3.4 kg)

Magazine Capacity: 30-rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst (M16A2)

Cyclic Rate: 700-1000 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AR15	**.223 Remington**	Assault	**2**	**30 clip**	**SA**	**9M**	**3.4**	**2/24 hrs**	**800 ¥**
M16A1	**5.56mm NATO**	Assault	**2**	**30 clip**	**SA/FA**	**9M**	**2.9**	**6/7 days**	**2,000 ¥**
M16A2	**5.56mm NATO**	Assault	**2**	**30 clip**	**SA/BF**	**9M**	**3.4**	**6/36 hrs**	**800 ¥**
M16A3	**5.56mm NATO**	Assault	**2**	**30 clip**	**SA/FA**	**9M**	**3.5**	**6/36 hrs**	**800 ¥**
M16A4	**5.56mm NATO**	Assault	**2**	**30 clip**	**SA/BF**	**9M**	**3.5**	**6/36 hrs**	**800 ¥**
M4	**5.56mm NATO**	Carbine	**3**	**30 clip**	**SA/BF**	**9M**	**2.6**	**6/36 hrs**	**750 ¥**
M4A1	**5.56mm NATO**	Carbine	**3**	**30 clip**	**SA/FA**	**9M**	**2.7**	**6/36 hrs**	**750 ¥**
M4C	**5.56mm NATO**	Carbine	**3**	**30 clip**	**SA/FA**	**8M**	**2.4**	**6/36 hrs**	**700 ¥**

- M4, M4A1, XM177 include retractable buttstocks, provide +1 Conceal when fully retracted.
- M16A3 and M4A1 include integral M1913 Picatinny Rail optics mounting platforms.

One of the most popular automatic rifle designs to date, the M16 began life as the AR-15 (Armalite Rifle) at the Armalite Division of the Fairchild Aircraft Corporation, designed by Eugene Stoner, Robert Fremont and James Sullivan.

The AR-15/M16 is actually the product of a scaled-down redesign of another Armalite rifle, the AR-10, a rifle designed during the mid-1950s to fire the full-power 7.62x51mm NATO cartridge. At the time, the AR-10 was unique in that was partially constructed of lightweight materials such as aluminum forgings and synthetic materials, which reduced weight substantially.

The USAF-sponsored "Project SALVO" opened the doors for a lightweight rifle of .22 caliber and low recoil, designed to increase the effectiveness of automatic fire. The AR-10 was then scaled down to accept a new cartridge, tentatively titled the .222 Special, and eventually sold commercially as the .223 Remington. The cartridge was classified as the 5.56x45mm M193 by the military. Resistance to this small-caliber concept from certain military elements and government entities led Armalite to sell rights to the AR-10/AR-15 design to Colt's Patent Firearms Manufacturing Company in 1959.

Colt agressively marketed the AR-15 to militaries (as well as commercially), winning sizable US contracts which found the rifles type-classified as the M16 by the US Army. The rifles were then shipped to a small but growing conflict in Vietnam. During the Vietnam War, problems arose with the M16. Congressional inquiry into the matter found that the problems were due in large part to Army mismanagement (lack of training, incomplete testing of components prior to issue). With the addition of a slightly heavier barrel, a new flash suppressor, and a forward bolt assist, the rifle was officially adopted by the US Army in 1967 as the M16A1. Problems with the rifle quickly dissolved. Also during this time, an experimental, shortened version of the rifle, called the CAR-15, was put to use by special forces elements, nick-named the "commando". Slight revisions landed it a type classification of XM177.

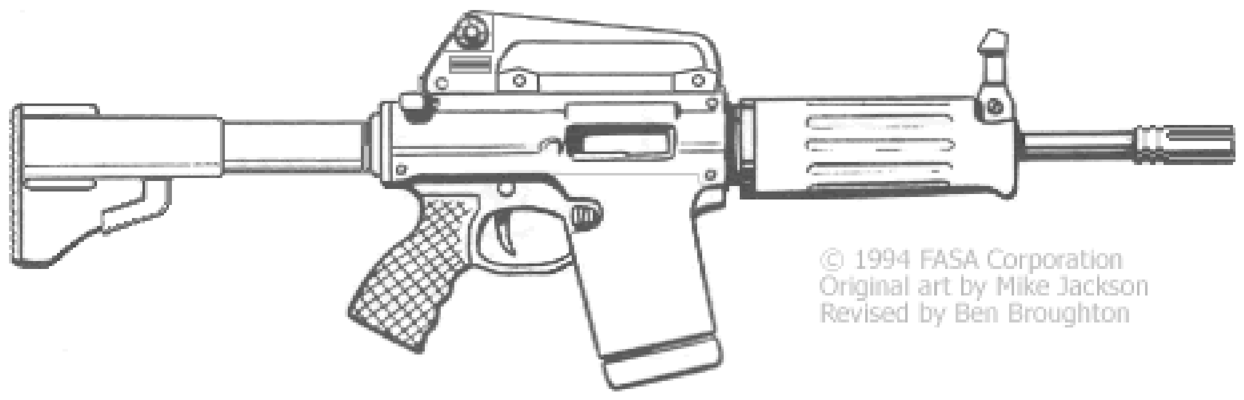
During the late part of the Vietnam War and into the late 1970s, NATO countries saw which way the wind was blowing and put some effort into developing other rifles and cartridges to improve the effectiveness of the 5.56x45mm cartridge. Fabrique Nationale developed a new bullet for the cartridge, designated internally as the SS109. This bullet led to the acceptance of the 5.56x45mm cartridge by NATO. The M16 was redesigned once again to maximize reliability for the new NATO cartridge (US M855), along with some improvements to the rifle, namely a heavier barrel, a new flash suppressor/compensator, and a new dual-aperture adjustable rear sight that represents a vast improvement over previous versions. The rifle was also restricted to three-round bursts instead of full-automatic fire in the interest of ammunition conservation. The rifle was officially type-classified as the M16A2 in 1982.

Several military elements had expressed interest in a version of the M16A2 for urban combat, somewhere in size between the M16A2 and the XM177 Commando. Colt developed the M4 Carbine, with a 14.5" (368mm) barrel, step-cut to accept the M203 grenade launcher. By 1994, the M4, along with a full-automatic version of the M16A2 that included an integrated M1913 Picatinny Rail optics-mounting platform (M16A3), were also type-classified. Colt also shortened the M4 barrel another three inches and now markets the resulting carbine as the M4 Commando, a progression of the original XM177.

Development progressed with the M16 series rifles in the form of the SOPMOD (Special Operations Peculiar Modifications) program from the Naval Surface Warfare Center in Crane, Indiana. This program involves the addition of several aftermarket available parts and accessories for the M4A1 Carbine, maximizing effectiveness for special operations. This includes two sub-categories of the rifle, including the Special Purpose Rifle (SPR), an urban sniper platform, and the Close Quarters Battle Receiver (CQBR), yet another progression of the "commando" carbine.

There are now countless variations of the AR-15/M16 design, manufactured and sold by literally dozens of companies including Armalite, Bushmaster, Colt, Diemaco, DPMS, Fabrique Nationale, Les Baer Custom, Olympic Arms, Rock River Arms, Wilson Combat, and countless assembly companies. The M16 rifle is supported by a vast industry providing aftermarket parts, optics, and other accessories. This massive level of support suggests that the AR-15/M16 rifle is here for the forseeable future.

Colt M23 Series



[M23C with accessories] [M23C .300 Whisper]

Colt Manufacturing Corp. Hartford, CT UCAS

5.56x45mm NATO (Various)

Operation: Gas, Piston (Short)

Safety: Ambidextrous selector switch, 0-1-3-30

Sights: Adjustable flip aperture rear, protected post front

Barrel: 12.5" (317mm)

Weight: 5.7 lbs. (2.58 kg)

Magazine Capacity: 30-rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 700-1000 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AR23	**.223 Remington**	**Assault**	**3**	**30 clip**	**SA**	**9M**	**3.5**	**2/24 hrs**	**800 ¥**
M23	**5.56mm NATO**	**Assault**	**3**	**40 clip**	**SA/BF/FA**	**9M**	**3.5**	**6/36 hrs**	**950 ¥**
M23C	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/BF/FA**	**9M**	**2.6**	**6/36 hrs**	**1,050 ¥**
M23C3	**.300 Whisper**	**Carbine**	**4**	**30 clip**	**SA/BF/FA**	**8M**	**3**	**6/72 hrs**	**1,800 ¥**

- M23C Includes retractable buttstock, provides +1 Conceal when fully retracted.
- See accessories for the M23 weapon system.
- See rules for suppression.

The Colt M23 series rifle system has been designed to provide police and security units with a quality modular rifle system at an affordable price. Based on the short stroke piston-operated M22A2 weapon system fielded by militaries world wide (which is itself an evolutionary descendant of the M16), the M23 can be configured to fire a variety of intermediate-power rifle cartridges including 5.45x39mm, 5.56x45mm, 5.8x42mm, 6x39mm, 6x42mm, 6x45mm, 6.5x38mm, 6.8x43mm, 7.62x39mm, .300 Whisper (7.62x35mm) and 9x39mm cartridges. The M23 is electronically-fired to provide for maximum cybernetic integration. A single 10-volt lithium battery provides enough power for approximately 2,500 rounds of use and up to three spare batteries can be stored in the rifle's water-tight pistol grip. Alternately, a conventional mechanical trigger mechanism can be installed if dependency on electricity is not desired. Semi-automatic only (single stage match), 3-round burst, and full-automatic trigger groups are available.

The M23 can also be upgraded to the M22A2 rifle in a matter of minutes with the M22 Armorer's Kit. The kit includes an M22 cowling assembly, 20" (508mm) barrel with flash suppressor/muzzle brake (Gas Vent 2), the M320A4 grenade launcher, and the Trijicon ACOG VI 4x scope, which attaches to the rifle's carrying handle wihout obscuring the weapon's flip-up iron sights.

The M23C is the compact version of the ultra-reliable Colt M23 assault rifle. The M23C includes a flat top receiver with M1913 Picatinny rail mount, a removable carrying handle with selectable rear sight (100/200/300m), a six-position retractable shoulder stock, a shorter and heavier 10.5" threaded barrel with a flash suppressor designed to mount quick-detach sound suppressors, a compact full-length magazine well, two 30-round magazines and a cleaning kit. All of this adds up to a smaller and lighter weapon.

The M23C can also be ordered chambered for the .300 Whisper cartridge, adding the versatility of complete suppression to the M23 weapon system. The integrally suppressed, 7.5" (190mm) barreled upper receiver can be replaced by the standard upper in a matter of seconds. The .300 Whisper upper comes with a free-floating Picatinny Rail Adapter System capable of mounting accessories above, below, and on each side of the weapon.

The M23C is the basis of the M7 Modular Carbine Weapon System (MCWS) used by UCAS special forces units worldwide.

The semi-automatic civilian version of the M23, the AR23, is available in authorized retail outlets across North America.

Firearms Creation Guide Design, M23C

Description	DC	Wt	Con	Totals
Carbine Frame	75	3	3	Weapon Type: Carbine
5.56mm NATO	-	-	-	Conceal: 3
Polymer-resin Construction (4)	10	-16%	-	Ammunition Capacity: 30 Clip
Gas Operated	5	-	-	Firing Mode: SA/BF/FA
30 Clip	-	-	-	Damage: 8M
Standard Feed	-	-	-	Weight: 2.6kg
Flash Suppressor	5	0.1	-	Spaces: Top, Under, Barrel, Grip
Removable Handle	10	-	-	Grade: Security
-	-	-	-	Technology Rating: SOTA
-	-	-	-	Design Cost: 105
-	-	-	-	Availability: 6/36 hours
Totals	**105**	**2.6**	**3**	Cost (¥): 1,050 ¥

Fabrique Nationale Carabine (FNC)

[AK5] [SCAR-L]

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Left side selector switch, 0-1-3-30

Sights: Adjustable flip aperture rear, protected post front

Barrel: 17.68" (449mm)

Weight: 8.47 lbs. (3.8 kg)

Magazine Capacity: 30-rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
FNC	**5.56mm**	**Assault Rifle**	**2**	**30 clip**	**SA/BF/FA**	**9M**	**3.6**	**3/4 days**	**730 ¥**
FNC Para	**5.56mm**	**Assault Rifle**	**2**	**30 clip**	**SA/BF/FA**	**9M**	**3.8**	**3/4 days**	**750 ¥**
Sporter	**5.56mm**	**Assault Rifle**	**2**	**30 clip**	**SA**	**9M**	**3.6**	**4/48 hrs**	**730 ¥**

Para model includes a folding stock that provides +1 Conceal when folded.

While the FN CAL (Carabine Automatique Légere) was one of the first attempts outside of the US to develop a 5.56x45mm rifle platform (introduced in 1966), it was found during field trials that the rifle was difficult to field stip and maintain, as well as too expensive to compete against other 5.56x45mm platforms, namely the AR15/M16. Taking these factors into account, FN engineers went back to work to create a rifle capable of rising above the ashes. Released in 1978, the FNC (Fabrique Nationale Carabine) represents FN's second attempt at a 5.56x45mm rifle platform.

The FNC is designed around a modified Kalashnikov-style long stroke piston operating system with a two-lug rotating bolt to perform breech locking. The gas system includes separate (and unusual) regulating and cut-off systems. A lever welded to the top of the gas cylinder, just ahead of the receiver, rotates the gas cylinder inside of which the piston reciprocates. Under normal operating conditions, an exhaust port drilled through an extension in the gas block allows excess pressure to escape the system when the rifle is fired. But when the cylinder is rotated to the right, the exhaust port is blocked by an extension on the cylinder, trapping more pressure in the system and allowing the rifle to function reliably under adverse conditions (very cold weather, heavy fouling, etc...). A separate, flip-up alidade attached to a rotating valve in the gas block/front sight base is used to block gas flow to the system while simultaneously acting as a simple sight for rifle grenades.

While the upper receiver of the FNC is made from steel stampings, the lower receiver is machined aluminum alloy. The two are held together by crosspins, similar in fashion to the M16. Unlike either the M16 or AK, the FNC includes a four-position selector, making the weapon capable of semi-automatic, three-round burst, and fully automatic modes of fire. Interestingly, the burst mechanism can be removed without affecting the rest of the trigger group function. Magazines are of the NATO STANAG pattern, fully compatible with many other 5.56x45mm rifles. Sights are a common western pattern; a windage-adjustable, dual flip aperture rear sight (250/450m) and an elevation-adjustable protected post front sight. A folding stock reminicient of the FAL battle rifle is also included.

While serving as the official Belgian infantry rifle for several years, manufacturing licenses for the FNC were also purchased by manufacturers in Sweden (Bofors AK5) and Indonesia (Pindad SS-1), where the rifles are produced locally.

Twenty-five years after its introduction, the FNC was used as the basis of a new design to compete in US SOCOM's SCAR-L (SOF Combat Assault Rifle - Light) program. The SCAR-L substitutes a short stroke piston system for the FNC's long stroke AK-type, thus negating the unusual gas regulator/cut-off of the FNC. The SCAR-L also includes a monolithic upper receiver/handguard with a full-length M1913 Picatinny rail mount, removable iron sights, and a side-folding stock with adjustable length-of-pull and drop-at-comb.

Ares Defense Systems Shrike 5.56

[Shrike 03A w/30 round magazine]

Ares Defense Systems
Blacksburg VA, CAS

5.56x45mm NATO

Operation: Gas, Piston, Short

Safety: Selector, left side

Sights: Adjustable aperture rear, hooded post front

Barrel: 16.25" (413mm)

Weight: 7.5 lbs. (3.4 kg)

Magazine Capacity:
200 belt or 30 magazine

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 625-1000 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Shrike	**5.56mm NATO**	**LMG**	*	**200 Belt***	**SA/FA**	**9M**	**-**	**6/14 days**	**4,995 ¥**
16SPW	**5.56mm NATO**	**LMG**	*	**200 Belt***	**SA/FA**	**9M**	**-**	**6/14 days**	**4,995 ¥**

- *This weapon can be fired using belted ammunition (loose or from 100 or 200 round boxes) or M16 magazines of any capacity. Conceal NA with 100/200 round box attached, Conceal 3 w/ 30rd mag, Conceal 2 with 20" barrel and 30rd magazine.
- The Shrike can feed from only one source at a time (i.e. magazine or belt). If a magazine is inserted along with a belt, the weapon will double-feed and jam.
- 16SPW includes a dedicated lower receiver designed for belt feed only. In place of a STANAG (AR15/M16-type) magazine well, it includes an attachment point for SAW-type 100-200 round ammunition boxes.
- Loaded 200 round box magazine adds 6.8 pounds (3 kg) to weapon weight. 100 round bag adds
- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.

The commercial Shrike 5.56™ unit consists of a barreled upper receiver assembly that is designed to replace the standard upper receiver assembly of the AR15/M16/M4 family of firearms. The Shrike 5.56™ is readily installed upon MIL-SPEC AR15/M16/M4 lower receiver assemblies without permanent modification of the host firearm or lower receiver. It features a quick-change barrel, is gas-piston operated and locked by a rotating bolt. Once installed upon the lower receiver assembly, the Shrike 5.56™ will accept magazine-fed ammunition from standard M16 type magazines through the lower receiver. The Shrike 5.56™ is also designed to accept M27 (SAW) linked ammunition through a top-cover feed assembly. Barrel length is approximately 16.25". The sights are non-folding with protected-post on front and protected-peep type aperture on rear. The handguard is insulated and without MIL-STD 1913 Picatinny Rail interface. The Shrike 5.56™ is offered with either semi-automatic or full-automatic style bolt carrier and (10) M27 disintegrating links will accompany each unit. The Shrike 5.56™ is a patented product with additional patents pending.

Based on an original concept patented by Eugene Stoner in 1990, the Shrike 5.56mm™ is available with four different barrel lengths (12.75", 14.25", 16.5", 20") quick-changable to suit mission requirements. The Shrike 5.56™ can also use any AR15/M16-based lower receiver accessories such as fixed or retractable buttstocks, aftermarket grips, trigger groups, etc... Also included is a magazine well adapter which allows the attachment of standard SAW-type ammunition boxes to the standard AR15/M16 lower receiver. Alternately, a dedicated ARES-16SPW™ lower receiver is also available. Lacking the AR15/M16-type magazine well, the ARES-16SPW™ lower receiver is designed to mount standard SAW-type belt-fed box magazines directly to the receiver, including hard plastic 200-round boxes or soft 100 or 200-round canvas bags.

In short, the Ares Shrike 5.56™ is a flexible, lightweight, light machine gun conversion for the AR15/M16 platform.

Some text courtesy of Ares Defense Systems. Relevant US Patents: 4942802, 6634274, 6681677, 6722255, 6851346

Beretta Px4 Storm

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

Various Chamberings

Operation: Short Recoil

Action: Double/Single

Safety: Ambidextrous w/ decocker, slide-mounted

Sights:
Fixed 3-Dot

Barrel: 4.0" (102mm)

Weight: 1.73 lbs. (785 g)

Magazine Capacity:
14-17 rounds, double stacked

Modes of fire:
Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Px4	**9mm Para**	**Medium Pistol**	**6**	**17 clip**	**SA**	**7M**	**0.79**	**2/24 hrs**	**550 ¥**
Px4	**.40 S&W**	**Medium Pistol**	**6**	**14 clip**	**SA**	**8M**	**0.79**	**2/24 hrs**	**550 ¥**

With stainless (INOX) finish, +65¥.

The Px4 Storm lines have been conceived to complement the power, ease of handling, performance and reliability of the pistol matched with an original and sought-after design. Manufactured in many calibers, the new Px4 Storm adopts the locked-breech locking system with a rotating barrel, which has been revised and considerably improved by Beretta. The overall dimensions are significantly reduced, considering its major firepower.

The extensive use of reinforced fiberglass technopolymer has allowed the development of a light and technically advanced firearm with a modern line that is extremely attractive and ergonomic. The technopolymer is also completely resistant to corrosion and guarantees color consistency for years to come. The rounded surfaces of the pistol are truly snag-free and facilitate the insertion and the extraction of the pistol from the holster. Also the trigger guard is rounded to ensure, when firing with two hands, the correct position of the supporting hand. In front of the trigger guard, underneath the barrel, a Picatinny rail (MIL Std 1913) is located. Integral to the frame, it allows the mounting of laser devices, flash lights or other types of accessories.

The correct grip angle allows for instinctive aiming of the firearm, automatically providing the line of sight. The rear upper part of the grip is curved and slightly recessed to snugly accommodate and protect the shooter’s hand. Both the front and the rear part of the grip boast a comfortable scaled surface that not only has a great aesthetic impact, but considerably improves grip, even in moist conditions. In addition, the pistol may be adapted for different hand sizes, even small hands, thanks to a new patented system that allows the interchangeability of the back-straps by thickness and configuration: in addition to the standard back-strap (medium), a slim back-strap is also available for small hands as well as an oversized one for large hands.

The newly designed magazine release button can be mounted on the right side of the firearm, for use by left-handed shooters. The knurled surface improves grip. The standard button can be easily replaced in different sizes (Large and Combat), suitable for professional use. The slide catch (slide stop) may be replaced by another in a low profile configuration (slim type). The manual safety lever is positioned on both sides of the slide for equally easy access by right or left-handed shooters. The model G has a hammer de-cocking lever that can be replaced with another in a low profile configuration (Stealth) to further reduce the overall dimensions of the slide.

The trigger mechanism of the Px4 Storm pistol has been designed as a unit that may be extracted without the need for special tools. The removal of the trigger group allows an easy access to the firing mechanism for cleaning and special maintenance purposes. Qualified personnel can remove the trigger mechanism when necessary, even in the field.

Beretta offers a choice of two operating systems, each with specific safety options:

> **F Model** - Double/single action. Ambidextrous manual safety on the slide with hammer de-cocking function, automatic firing pin block safety.
>
> **G Model** - Double/single action. Ambidextrous manual lever on the slide with hammer de-cocking function with the return of the lever to the firing position, automatic firing pin block safety.

Both models feature a "chamber loaded" indicator.

Beretta 9000S

Fabbrica d'Armi Pietro Beretta Gardone, Val Trompia, Italy
9mm Parabellum, .40 S&W
Operation: Short Recoil
Action: Double/Single, DAO
Safety: Ambidextrous w/ decocker, frame-mounted
Sights: Fixed 3-Dot
Barrel: 3.5" (89mm)
Weight: 1.71 lbs. (780 g)
Magazine Capacity: 10-12 rounds, double stacked
Modes of fire: Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
9000S	**9mm Para**	**Light Pistol**	**7**	**12 clip**	**SA**	**7M**	**0.75**	**3/36 hrs**	**485 ¥**
9000S	**.40 S&W**	**Light Pistol**	**7**	**10 clip**	**SA**	**7M**	**0.78**	**3/36 hrs**	**485 ¥**

9mm model can use 15-round 92-series or 20-round 93R pistol magazines.

The new remarkably compact Beretta 9000S pistols are distinguished by their light weight, compact size and potent calibers (9mm and .40 S&W), making them comfortable and practical carry guns. The high magazine capacity (12 rounds in 9mm, 10 rounds in 40 S&W) makes the 9000S pistols ideally suited for personal defense and the law enforcement profession.

To maintain Beretta's unsurpassed quality and durability the most modern designs and manufacturing techniques are employed. The frame is manufactured with a fiberglass reinforced technopolymer incorporating two special steel alloy rail inserts that guarantee perfect slide-to-frame fit and the optimal tilt barrel movement during the locking and unlocking phases.

The patented and innovative locking system consists of a unique tilt-barrel, open-slide, design. The two strong barrel locking lugs engage the slide directly. This direct, barrel-to-slide lock-up does not require any intermediate components and maintains the same high degree of reliability found on Beretta's traditional open slide design.

The unmistakable Giugiaro Design styling gives the Beretta 9000S a modern look, very pleasing to the eye and very ergonomic. The grips are made of a high-tech soft polymer, overmolded onto the frame. This durable and wear-resistant material absorbs vibrations and ensures a firm grip even in adverse weather conditions.

All 9000S models feature an automatic firing pin block that prevents the gun from firing in case of inadvertent drops or strikes against hard surfaces. It is de-activated only when the trigger is pulled back. The manual external safety lever on the "F" models (not present on double-action-only "D" models) is frame mounted and can be activated when the hammer is fully armed or in half-cock position. This lever interrupts the trigger linkage and prevents the rotation of the sear.

This same lever also acts as a decocking mechanism (Type F model), dropping the hammer to the half-cock position by simply rotating the lever past the safety position. From this position it is possible to fire the pistol in double-action (after disengaging the safety). The safety/decock lever is ambidextrous. All 9000S models feature also a chamber-loaded indicator.

The two-position floor-plate, interchangeable with the standard one, allows, when extracted, a better hold of compact 9000S pistol. At rest, it keeps the standard compactness of the pistol. The ergonomic technopolymer magazine sleeve guarantees a perfect hold of the pistol when using the 92 full-size magazines.

SIG P210

Schweizerische Industrie Gesellschaft (SIG) Neuhausen am Rheinfalls, CH	
9mm Parabellum	
Operation: Short Recoil	
Action: Single Action	
Safety: Frame-mounted on left side	
Sights: Fixed notch rear, Adjustable notch rear	
Barrel: 4.68" (118mm)	
Weight: 2.0 lbs. (910 g)	
Magazine Capacity: 8 rounds, double stacked	
Modes of fire: Safe, semi-automatic	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P210-8-9	**9mm Para**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**7M**	**0.91**	**4/48 hrs**	**4,290 ¥**
P210-6-9	**9mm Para**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**7M**	**0.91**	**4/48 hrs**	**2,090 ¥**
P210-5-9	**9mm Para**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**7M**	**0.96**	**4/48 hrs**	**2,330 ¥**
P210-2-9	**9mm Para**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**7M**	**0.91**	**4/48 hrs**	**1,680 ¥**

While there's no reason I can see why it couldn't be done, it should be considered a cardinal sin to put a Smartlink on a handgun as fine as the P210.

The P210 Pistol can arguably be called the "most accurate production handgun" in the world. The P210 was originally made in Switzerland in 1949 for the Swiss Military. Since that time, the P210 has gained a worldwide reputation for outstanding accuracy, superior quality and timeless durability. The P210 pistol is offered in 9mm Parabellum.

The P210-8-9 is the top of the line pistol in the family. Built on a heavy frame with a 4.68" barrel, adjustable target sights and a lateral magazine catch, the P210-8-9 delivers exceptional accuracy based on the combination of the full-length guidance between the slide and receiver and the backlash-free locking of the barrel to the slide. Choice wooden grip plates and a magazine loader round out the impressive pistol package.

The P210-6-9 is also built on a standard frame and includes adjustable target sights, wood grip plates and a magazine loader. The target grade trigger action has a shorter travel length and was built on the requirements of competitive type shooting. The serrated front strap allows for surer handling and greater control in competitive situations.

The P210-5-9 is built on the heavy frame with an extended barrel of 5.85" (148mm). A serrated front strap and wood grip plates complement the competitive styling that also includes adjustable target sights and a target trigger. A magazine loader is also standard as is the 8 round single stacked magazine.

The P210-2-9 is the 9mm Parabellum Swiss Army Service model now with wood grip plates.
The P210-2-9 is built on a standard frame with standard sights and a sandblasted finish.
The P210-2-9 features all the same level of accuracy and reliability as the other models.

The P210 consistently wins 100 meter competition matches throughout the world and ships with a 50 meter accuracy target, trigger lock, and lockable hard carry case.

SIG Sauer Compact Pistols

P229 [P228] [P245]

Schweizerische Industrie Gesellschaft (SIG)
Neuhausen am Rheinfalls, CH

Various Chamberings

Operation: Short Recoil

Action: Single/Double

Safety: No external safety; decocker on left side of frame

Sights: Fixed 3-Dot/Tritium

Barrel: 3.9" (100mm)

Weight: 1.84 lbs. (835 g)

Magazine Capacity: 6-13 rounds, double stacked

Modes of fire: Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P228	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.80**	**2/24 hrs**	**830 ¥**
P229	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.80**	**2/24 hrs**	**830 ¥**
P229	**.40 S&W**	**Medium Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.83**	**2/24 hrs**	**830 ¥**
P229	**.357 SIG**	**Heavy Pistol**	**6**	**12 clip**	**SA**	**9M**	**0.83**	**2/24 hrs**	**830 ¥**
P245	**.45 ACP**	**Medium Pistol**	**6**	**6 clip**	**SA**	**8M**	**0.78**	**2/24 hrs**	**830 ¥**

With Two-Tone finish (nickel slide, Nitrolon black frame) +50¥.

When you need something smaller than full-size pistol but are unwilling to compromise on quality, performance or firepower, look at these compact-size SIG SAUER Classics. Their compact size and easy handling make them equally desirable for civilians and uniformed professionals determined to get the best possible performance. You'll find that these compacts actually outperform other manufacturers' full-size pistols, which makes them especially suited to legal concealed carry and undercover assignments that call for serious firepower.

The SIG SAUER Classic compacts incorporate all the performance features that have made SIG SAUER pistols famous throughout the world, from the 4-Point Safety System to the enclosed steel slide.

Compact-Size Classic pistols are available in a wide range of calibers: the P228 in 9mm, the P229 in 9mm, .357 SIG, and .40 S&W and now – with the addition of the P245, the hard-hitting .45 ACP. You can order your compact in any of several highly durable and attractive finishes, including Nitron™and Nickel Two-Tone.

The P228 was also accepted by the US Department of Defense as the P11. It has seen limited use in all branches of military service, as well as non-military government protection and investigation services. The major difference between the P228 and P229 is the design of the slide. The P228 slide is designed only to handle the recoil properties of the 9mm Para round, whereas the P229 is designed to handle the .40 S&W and .357 SIG as well as the 9mm Para. In this way the P229 can be considered an "upgraded" P228.

Distributed by J.P. Sauer & Sohns GmbH, Eckernforde, Germany. The P229 is manufactured and marketed by SIGARMS of Exeter, New Hampshire.

Heckler & Koch USP Tactical

[USP9SD] [USP45CT]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Parabellum, .45 ACP

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted with decocker, left or right side

Sights: Adjustable 3-Dot

Barrel: 5.09" (129mm)

Weight: 1.9 lbs. (0.86 kg)

Magazine Capacity:
12-15 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9SD	**9mm Para**	**Heavy Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.77**	**4/48 hrs**	**1020 ¥**
USP40 Tactical	**.40 S&W**	**Heavy Pistol**	**6**	**13 clip**	**SA**	**8M**	**0.86**	**4/48 hrs**	**1020 ¥**
USP45 Tactical	**.45 ACP**	**Heavy Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.86**	**4/48 hrs**	**1115 ¥**
USP45CT	**.45 ACP**	**Heavy Pistol**	**7**	**8 clip**	**SA**	**8M**	**0.78**	**4/48 hrs**	**1020 ¥**

- This weapon comes standard with a threaded barrel making it less expensive to mount barrel-mounted accessories. Multiply final costs x0.75 per barrel-mounted accessory.
- With Smartlink 2, +450¥.
- USP Accessories.

An enhanced version of the USP, the Heckler & Koch USP Tactical is designed for users who need the features found on the Mark 23, but in a smaller and more affordable pistol. The USP Tactical pistol approaches the precision found on the Mark 23 by adding an extended threaded barrel with rubber O-ring, adjustable match trigger, and adjustable target-type sights to the USP. Available in .45 ACP and .40 S&W (4.92"/125mm barrel).

The Heckler & Koch USP9SD is a full size USP9 variant 1 (SA/DA) 9x19mm NATO pistol fitted with a frame mounted left side control lever that acts as a combined manual safety and decocking lever. The standard USP9SD is fitted with match trigger parts and click adjustable sights of sufficient height to see over the mounted optional sound suppressor. An ambidextrous safety lever and optional 3-dot tritium sights are also available. The barrel is 4.56" (116mm) long, threaded left hand, does not have an O-ring and does not require a thread cap.

The USP45CT (Compact Tactical) incorporates minor modifications to an existing Commercial Off the Shelf (COTS) .45 caliber pistol in a compact configuration so that when suppressed the resulting sound and flash level will be reduced to tolerable standards when working in poorly lit and/or enclosed environments. In addition, the suppressor’s shorter overall length and decreased weight will enhance the weapon system's ability to be carried and presented for use by the operator from a tactical holster. 4.46" (113mm) barrel.

A variant of the USP45 Tactical was adopted by the German government as the P12. It does not include the adjustable match trigger.

Heckler & Koch P2000SK

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .357 SIG, .40 S&W

Operation: Short Recoil

Action: CDA, Double/Single

Safety: None (CDA), ambid. decocker (DA/SA)

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 3.27" (83mm)

Weight: 1.5 lbs. (680 g)

Magazine Capacity:
9-10 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P2000SK	**9mm Para**	**Medium Pistol**	**7**	**10 clip**	**SA**	**7M**	**0.68**	**2/24 hrs**	**930 ¥**
P2000SK	**.357 SIG**	**Medium Pistol**	**7**	**9 clip**	**SA**	**9M**	**0.68**	**2/24 hrs**	**930 ¥**
P2000SK	**.40 S&W**	**Medium Pistol**	**7**	**9 clip**	**SA**	**8M**	**0.68**	**2/24 hrs**	**930 ¥**

- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.

Like the slightly larger P2000 US model, the P2000 SK combines elements of the successful HK USP Compact pistol with recent technological innovations from HK engineers— only in a smaller, more concealable design.

The P2000 SK uses the trigger system introduced in 2001 on the USP Compact “LEM” (Law Enforcement Modification) model. This unique pre-cocked hammer system combines the advantages of a cocked striker component (constant level of trigger pull and short trigger travel from first to last round fired) with a double action hammer system. The LEM trigger pull has been reduced to 7.3-8.5 pounds of pressure (32.5 Newtons), compared to 12-15 pounds found on many conventional double action pistols. Optional adjustment (by HK armorers) can bring the trigger pull into the 5.5 pound range.

Using such an enhanced trigger system consolidates ease of use and safety into a convenient, innovative trigger operation—one that prevents unintended firing. And in case of an ammunition-related failure to fire, all that is needed is an additional second or third pull of the trigger without the need of first pulling the slide back to re-cock the Subcompact.

The enhanced LEM trigger system combines the reliability of a double-action revolver trigger with the crisp, precise trigger of a single-action pistol. For shooters that prefer a conventional double-action/single-action pistol, a special DA/SA variant is planned with a decock button mounted on the rear of the frame. A choice of two simple-to-install grip panels make it easy to custom-fit the P2000 Subcompact to any shooter’s hand. And the same ambidextrous magazine release and dual slide release levers found on the P2000 make handling the Subcompact easy for both right and lefthanded shooters.

A set of abbreviated “industry standard” mounting rails on the P2000 US SK, enable lights, aimers, and other accessories to be added by sliding them onto the open rail system. The HK P2000 SK also can use widely available, reliable USP Compact magazines.

Heckler & Koch USA

Heckler & Koch USP Elite

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .45 ACP

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted with decocker, left or right side

Sights: Adjustable 3-Dot

Barrel: 6.02" (153mm)

Weight: 2.0 lbs. (1 kg)

Magazine Capacity:
12-18 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9ELT	**9mm Para**	**Heavy Pistol**	**5**	**18 clip**	**SA**	**7M**	**0.92**	**4/48 hrs**	**1355 ¥**
USP45ELT	**.45 ACP**	**Heavy Pistol**	**5**	**12 clip**	**SA**	**8M**	**0.92**	**4/48 hrs**	**1355 ¥**

- With Smartlink 2, +450¥.
- USP Accessories.

A long slide model of the USP, the USP Elite combines features found on standard sized USP and specialized models of the USP such as the USP Expert and USP Tactical. Most noteworthy is the 6.2 inch barrel, making the USP Elite the longest on all USP models— and one of the most accurate. The added length of the elongated target slide also enhances the balance of the USP Elite.

Other standard features include:

- match trigger with adjustable trigger stop
- target sights with micrometer adjustment for windage and elevation
- hand fitted extended slide (9.45 inches) & polygonal bore profile barrel (6.02 inches) with O-ring extended foorplate on magazine
- loaded chamber indicator
- ambidextrous control levers on both sides of the frame
- patented HK recoil reduction system
- corrosion resistant “Hostile Environment” blued finish
- corrosion proof fiber-reinforced polymer frame
- oversized trigger guard
- universal mounting grooves for installing accessories
- ambidextrous magazine release lever
- extended slide release
- extractor doubles as a loaded chamber indicator
- patented Lock-Out safety device

Heckler & Koch Universal Machine Pistol

UMP40 [UMP9] [UMP45]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .40 S&W, .45 ACP

Operation: Blowback

Safety: Ambidextrous selector switch, 0-1-30 or 0-1-3-30

Sights: Flip aperture rear, hooded post front, tritium

Barrel: 7.87" (200mm)

Weight: 4.7 lbs. (2.1 kg)

Magazine Capacity:
25-30 rounds, detachable box

Modes of fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
UMP9	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**7M**	**2.1**	**3/48 hrs**	**700 ¥**
UMP40	**.40 S&W**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**2.1**	**3/48 hrs**	**700 ¥**
UMP45	**.45 ACP**	**SMG**	**3**	**25 clip**	**SA/BF/FA**	**8M**	**2.3**	**3/48 hrs**	**720 ¥**

- Side-folding buttstock provides 1 point of recoil compensation and +1 Conceal when folded.
- UMP Manual

The UMP is a cost-effective, state-of-the-art submachine gun that offers users the advantages of light weight, low initial purchase and maintenance costs, uncompromising reliability, and precision accuracy with low felt recoil.

The UMP45 provides the user with a magazine capacity of 25 rounds (30 rounds in 9mm Parabellum or .40 S&W) with an accurate range of 100 yards or more, well beyond that of any issue handgun or shotgun. Due to its small size (less than 18 inches with the buttstock folded) and 4 1/2 pound unloaded weight, the UMP is the perfect choice for use in or around vehicles. Its size and low weight also make it the ideal weapon for smaller stature officers who have difficulty handling the size, weight, and excessive felt recoil of a full size rifle or shotgun.

The UMP is designed and tested to fire all types of ammunition—including subsonic and supersonic loads, cartridges assembled with ball, high performance hollowpoint projectiles, and even enhanced velocity +P offerings. The UMP also fires non-toxic and frangible training ammunition without modification.

For familiarity of training, the UMP offers fully ambidextrous operating controls and sling attachment points similar to those found on other HK rifles and submachine guns. A convenient bolt catch holds the bolt open when the last round is fired and along with the flared magazine well makes for quick and easy reloads.

Hard points molded into the polymer receiver of the weapon allow for the attachment of a wide assortment of optional mounting rails and accessories, such as assault sights, tactical lights, and vertical foregrips.

Additional standard features include fully adjustable iron sights with a dual flip-up rear aperture, an HK multi-purpose tactical carrying sling, and a detachable vertical handstop. Optional tritium sights are also available.

UMP firing mode choices include semi-automatic only, semi-automatic and 2-round burst, or semi-automatic and fully automatic modes of fire.

With the exception of the barrel, bolt, and certain internal component parts, the UMP is constructed entirely from tough, lightweight glass-fiber reinforced polymer. The UMP magazines, also made of high strength polymer, feature a transparent ammunition-viewing strip that allows the user to see the type and quantity of ammunition inside.

The sturdy UMP folding buttstock has a rubber cheek piece and buttpad and reduces the overall length of the weapon by nearly ten inches when closed.

Like all HK submachine guns, the UMP fires from the closed bolt position to improve accuracy and enhance safety when handling the weapon. A passive internal firing pin block within the bolt prevents the weapon from firing if dropped.

Text courtesy Heckler & Koch USA

Brügger & Thomet MP9

Brügger & Thomet AG Thun, Switzerland	
9mm Para, 10mm Auto, .227 HK	
Operation: Short Recoil	
Safety: Passive trigger; crossbolt selector, semi/full	
Sights: Adjustable aperture (ghost ring) rear, post front	
Barrel: 5.1" (130mm)	
Weight: 3.0 lbs. (1.4 kg)	
Magazine Capacity: 15-30 rounds, double stacked	
Modes of fire: Semi-automatic, fully automatic	
Cyclic Rate: 900 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP9	**9mm Para**	**SMG**	**4**	**30 clip**	**SA/BF/FA**	**7M**	**2.7**	**3/48 hrs**	**750 ¥**
MP10	**10mm Auto**	**SMG**	**4**	**30 clip**	**SA/BF/FA**	**9M**	**2.8**	**3/48 hrs**	**780 ¥**
MP227	**.227 HK**	**SMG**	**4**	**30 clip**	**SA/BF/FA**	**6M***	**2.4**	**3/48 hrs**	**780 ¥**

- 5.7x23mm receives an automatic x0.75 Armor Rating modifier.
- In the case of the the MP227, specially loaded subsonic ammunition can be used in conjunction with a suppressor, but the weapon's Damage Code drops to 4L and there is no additional armor piercing effect.
- Includes folding stock and forward handgrip. -1 Conceal when stock is extended.

In 2001 Brügger & Thomet began analyzing the needs of military and police operators the world over who are in need of a shoulder-fired 9mm support weapon. After completing this study B&T negotiated and purchased the ingenious TMP Tactical Machine Pistol from Steyr-Mannlicher AG & Co. KG. This included all patents, drawings and production rights. Based on the day to day experience of professional users and considering all the other submachine guns on the market today, Brügger & Thomet redesigned the TMP to arrive at the new MP9 Tactical Machine Pistol.

The MP9 is small and light weight. Folding stock and rounded edges makes this an excellent choice for police agencies and militaries who need to have a support weapon carried in the dignitary or VIP protection role, normal patrol, special units, vehicle crew members, aviators or anyone. The only true Tactical Machine Pistol today for professionals that need a lightweight, compact, ambidextrous, and easy to use weapon which will fire the easy-to-find standard 9mm cartridge.

The firing system is a simple operation [short recoil via rotating barrel], which means no gas tube to clog or locking piece to loose. It is a very clean weapon to shoot; tests of over six thousand rounds have been fired before functionality is affected. The super-light recoil impulse of this weapon makes it a very easy, comfortable and user friendly weapon to shoot. That is especially appreciated by agencies which are hiring a greater number of women and small stature male officers. Your fair shooters will become good shooters and good shooters will become great shooters.

The MP9 is an ambidextrous, operator-friendly design. The safety, charging handle, sling attachment and magazine release functions are designed to accommodate all users. The operator does not place their hand or finger anywhere near the muzzle of the weapon.

When the MP9 folding stock is open, the weapon is smaller than a H&K MP5A3 with its stock closed. The MP9 is just 30cm (11.8") long, stock folded. The quick opening, self-locking stock brings stable firing stock to the overall length to 52cm (20.5"). It is the most compact submachine gun in the world. The foregrip is essential to maintain a good sight picture and to keep the operator's hands and fingers well away from the muzzle of the weapon, consistently effective and always safe!

The wave of the future for all firearms is the use of optics. The MP9 is already prepared for this by having an integrated MIL-STD 1913 Picatinny rail molded right into the top of the receiver. The adjustable ghost ring sight is of a made so that there are no sharp edges to get hung up on clothes or slings and will not be knocked out of alignment.

Brügger & Thomet MP9 website

Armalite AR-10 Battle Rifle

[LAR-10 Mid-Length A4]

Armalite, Inc.
Geneseo, IL UCAS

7.62x51mm NATO

Operation: Gas, Direct

Safety: Left side selector switch, 0-1-20

Sights: Adjustable flip aperture rear, protected post front

Barrel: 20" (508mm)

Weight: 9.6 lbs. (4.35 kg)

Magazine Capacity: 20 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AR-10	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.35**	**4/72 hrs**	**1,435 ¥**
LAR-10	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.35**	**4/72 hrs**	**1,150 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- A muzzle brake is available that provides 2 points of recoil compensation (+100¥).
- Carbine versions of the AR-10 and LAR-10 are available. +1Conceal, 4kg. Includes a retactable stock, provides no Conceal bonus.

The AR-10 was developed by Eugene Stoner at the Armalite Division of the Fairchild Engine and Airplane Company in the early 1950s. Designed to compete for military contracts with other rifles chambered for the new 7.62x51mm T65 cartridge, the AR-10 was, at the time, revolutionary in that it included aluminum alloy forgings and synthetic components in its construction. This reduced weight dramatically. However, the reduction in weight made for an increase in recoil to the point that the weapon was far from controllable in automatic fire (a requirement of the project). Muzzle brakes were developed in order to alleviate some of the recoil. Regardless, US mlitary elements were not enthusiastic about accepting a rifle with such a radical departure from traditional design. As a result, the Garand-based M14 rifle was accepted for service.

During the time, the US Operations Research Office (ORO) conducted reasearch into how casualties occured in battle. It came to the conclusion that a small-caliber, low-recoiling automatic rifle would be much more effective as a fighting weapon than the large, powerful rifles of the time. Thus, in 1957 the United States Army Continental Army Command (CONARC) sought commercial assistance in the development of a 5.56mm military rifle.

Winchester and Armalite were asked to develop these rifles. At Armalite, James Sullivan scaled down the AR-10 for use with a .223 caliber cartridge developed especially for the project. The AR-15 was born. Project SALVO was initiated and at the end of testing, the AR-15 was announced the winner. However, having lacked the sales of the AR-10 necessary to begin production of the AR-15, Armalite sold its AR-10/AR-15 assets to Colt's in 1959. The rifle was then type-classified as the M16 and put into service with a growing force of military advisors in Vietnam. Armalite soon disintegrated.

The Armalite trade name switched hands several times over the years until it was purchased by Eagle Arms, a company that produced parts for AR-15 rifles. By 1989, Eugene Stoner's patents had expired and several companies, including the new Armalite, began manufacturing complete AR-15 rifles. Eventually Armalite's Mark Westrom also decided to begin manufacture of the AR-10 in 1994, putting the AR-10 Back in business.

The standard AR-10A2 has been redesigned to adhere to the "A2" pattern of the M16 military rifle. It includes the same iron sight system as the M16A2. The AR-10A4 includes a flat top Picatinny Rail upper receiver and gas block, making it easy to mount scopes.

While Armalite's AR-10 rifles utilize modified M-14 magazines and an AR-15-type magazine release, in 2004 Bushmaster redesigned the 7.62x51mm platform to meet their own specifications. Utilizing plentiful, inxpensive, and unmodified magazines designed for the FN FAL (both inch and metric pattern), Bushmaster's version also included an ambidextrous magazine release and bolt hold-open release, simlifying left-hand operation and finally making a fully ambidextrous AR-platform a reality. Bushmaster apparently sold the design to another prominent AR-15 manufacturer, Rock River Arms, in 2006. Yet another 7.62x51mm version of the AR platform, particularly KAC's SR-25, also exists.

Armalite | Rock River Arms | Knight's Armament Company

Bushmaster BAR-10

Bushmaster, Inc.
Windham, ME UCAS

7.62x51mm NATO

Operation: Gas, Direct

Safety: Left side selector switch, 0-1-20

Sights: Adjustable flip aperture rear, protected post front

Barrel: 20" (508mm)

Weight: 9.6 lbs. (4.35 kg)

Magazine Capacity: 20 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Carbine	**7.62mm NATO**	**Assault**	**2**	**20 clip**	**SA/FA**	**9S**	**4**	**5/72 hrs**	**1,750 ¥**
BAR10	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.35**	**4/72 hrs**	**1,760 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- A muzzle brake is available that provides 2 points of recoil compensation.
- AR-10 Carbine includes a retactable stock that provides +1 Conceal when retracted.

The BAR-10 came about partially to circumvent US legislation known as the Assault Weapons Ban of 1994. This law restricted the sale of magazines with capacities of more 10 rounds to law enforcement and military markets only. However, "high-capacity" magazines manufactured prior to the ratification of the law were grandfathered and therefore perfectly legal. But after a few years these became quite scarce and as a result, relatively expensive items.

While "high-capacity" magazines could not be manufactured for civilian sale during the ban, importation of magazines manufactured before the ban was not restricted. Bushmaster realized that several countries that were in the process phasing out older 7.62x51mm military rifles (particularly those based on the FN FAL) for newer designs were beginning to export substantial quantities of high-quality, inexpensive, pre-ban 20-round magazines. Bushmaster engineers began modifying the AR-10 lower receiver to accept both inch-pattern (Australia, Canada, UK) and metric (everyone else) FAL magazines. The result is the BAR-10.

Not only does the BAR-10 utilize inexpensive, readily available magazines, it also includes a few improvements to the AR-10 design. The magazine release has been made ambidextrous, with a button located on each side of the receiver. The bolt hold-open release is also ambidextrous, consisting of push-down lever located at the bottom of the receiver between the trigger guard and the magazine well. Like the M16/AR15, the BAR-10 includes a forward assist lever behind the ejection port. In all other ways the rifle is identical to the AR10A2 design.

The BAR-10 is available in 16" carbine and 20" rifle variants and A2 or A3 (flattop M1913 rail). An AK74-style muzzle brake is available. Select fire variants are also available.

Bushmaster

Zastava M77

[M77AB1] [M77B1 with Grenade Launcher]

Zastava Oružje D.P. Kragujevac, Serbia

7.62x51mm NATO

Operation: Gas, Regulated

Safety: Right side selector lever, 0-1-30

Sights: Adjustable notch rear, protected post front

Barrel: 20" (508mm)

Weight: Varies (see below)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-auto, full auto

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M77B1	**7.62mm NATO**	**Sport Rifle**	**2**	**30 clip**	**SA/FA**	**9S**	**5**	**4/9 days**	**900 ¥**
M77AB1	**7.62mm NATO**	**Sport Rifle**	**2**	**30 clip**	**SA/FA**	**9S**	**4.8**	**4/9 days**	**920 ¥**
M77 LMG	**7.62mm NATO**	**Sport Rifle**	**NA**	**30 clip**	**SA/FA**	**9S**	**5.4**	**"**	**1,050 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- M77AB1 includes a folding stock that provides +1 Conceal when folded.
- M77B1 LMG includes a 21" (535mm) heavy barrel with bipod.
- An underbarrel grenade launcher is available. SS, +350 ¥

The M77 family is designed to fully cover the needs of regular and mechanized infantry units, pairing a full-power western rifle cartridge with the extremely reliable Kalashnikov rifle design. The rifle is a chambered in 7.62x51mm NATO and is manufactured by Zastava Oružje of Kragujevac, Serbia. Three variants of the M77 are available.

The M77B1 is the basic rifle. Very similar to the AKM in all but the cartridge it fires, the M77B1 includes wooden furniture and a fixed stock. It can be fired from either semi-automatic or fully automatic modes. The 20-inch (508mm) barrel also includes a gas regulator to accomodate different loads, environmental conditions, or grenade launching. The M77 includes a detachable grenade sight which mounts to the gas block and a scope mount hardpoint.

The M77AB1 differs from the M77B1 only in that it includes a folding stock. A single-shot, muzzle-loaded underbarrel grenade launcher (similar to the Russian GP-25) is available for use on the M77B1 and M77AB1 rifles.

The M77B1 LMG includes a heavy 21-inch (535mm) barrel with bipod. It is intended to be used in a squad support role.

The power of the 7.62x51mm NATO cartridge in combination with the reliability of the Kalashnikov rifle design creates a formidable weapon system for use in the automatic rifle role.

Zastava Oružje

Heckler & Koch HK21

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: 0-1-3-30 ambidextrous selector switch

Sights: Adjustable aperture rear, hooded post front

Barrel: 21.65" (550mm)

Weight: 20.5 lbs. (9.3 kg)

Magazine Capacity: 100 round belt, 20 round box*

Modes of fire: Safe, semi-auto, 3 round burst, full-auto

Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HK21E	**7.62mm NATO**	**MMG**	**NA***	**100 Belt**	**SA/BF/ FA**	**9S**	**9.3**	**6/14 days**	**4,000 ¥**

- Loaded 100 round box magazine adds 7.6 pounds (3.4 kg) to weapon weight.
- *Using available box magazine conversion kit (250¥, 20 rounds) with bipod retracted, has a Conceal Rating of 2.
- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.
- Includes a bipod.

The perceptions and experiences gained from national and international weapon testing under stringent conditions have been considered and incorporated in the design of the HECKLER & KOCH Machine Guns. For these reasons the improved HK21E and HK23E feature an excellent performance and durability and represent today's most advanced machine gun technology. Their modular construction permits the easy conversion from a belt feed to a magazine feed gun and vice versa.

Weight and exterior dimensions make them real one-man-weapons even in the belt fed configuration, where one man can carry and handle the weapon and a full load of ammunition. Firing is possible from all postions, even from the hip. The recoil operated, symetric roller-locked bolt system is firing from the closed bolt position. It is designed for maximum reliability, accuracy and toughness. This extraordinary operating system and their others features - such as cold-forged barrel, advanced mechanical sighting system and optionally available optical sighting system as well as the applied ultimate quality principles - make the HECKLER & KOCH Machine Guns really outstanding performers.

HK23E/HK21E Features:

- Semi-automatic sniper rifle-like accuracy when needed from a belt-fed machine gun due to its heavy free floating barrel.
- Quick change barrel. Hot barrels can be changed in seconds without the need of a protective glove.
- Adjustable folding bipod.
- Scope mounting platforms.
- Adjustable 1,200 meter sight.
- The HK21E and the HK23E are equipped with a forward assist.
- Optional belt or box magazine feed.
- The belt feed mechanism smoothly feeds the belted ammunition in two stages, during the reward and the forward movement of the bolt.
- Standard ambidextrous 3-round burst trigger group.
- Receiver engineered for a minimum 60,000 round service life.
- Mechanical recoil buffer system incorporated in buttstock.
- The 7.62mm HK21E and the 5.56mm HK23E Machine Guns use the same reliable operating principle as the G3 Rifle.
- The high 800 rpm cyclic rate of fire ensures more rounds on target per target exposure.

More information on the HK21/23 can be found at HKPRO.

Heckler & Koch HK23

[HK23 on M1102 bipod]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

5.56x45mm NATO

Operation: Delayed Blowback

Safety: 0-1-3-30 ambidextrous selector switch

Sights: Adjustable aperture rear, hooded post front

Barrel: 17.71" (450mm)

Weight: 19.1 lbs. (8.7 kg)

Magazine Capacity: 100 rounds, belted

Modes of fire: Safe, semi-auto, 3 round burst, full-auto

Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HK23E	**5.56mm NATO**	**LMG**	**NA***	**100 Belt**	**SA/BF/FA**	**9M**	**7.1**	**6/14 days**	**3,800 ¥**

- Loaded 100 round box magazine adds 4.2 pounds (1.9 kg) to weapon weight.
- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.
- Includes a bipod.

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- Semi-automatic sniper rifle-like accuracy when needed from a belt-fed machine gun due to its heavy free floating barrel.
- Quick change barrel. Hot barrels can be changed in seconds without the need of a protective glove.
- Adjustable folding bipod.
- Scope mounting platforms.
- Adjustable 1,200 meter sight.
- The HK21E and the HK23E are equipped with a forward assist.
- Optional belt or box magazine feed.
- The belt feed mechanism smoothly feeds the belted ammunition in two stages, during the reward and the forward movement of the bolt.
- Standard ambidextrous 3-round burst trigger group.
- Receiver engineered for a minimum 60,000 round service life.
- Mechanical recoil buffer system incorporated in buttstock.
- The 7.62mm HK21E and the 5.56mm HK23E Machine Guns use the same reliable operating principle as the G3 Rifle.
- The high 800 rpm cyclic rate of fire ensures more rounds on target per target exposure.

More information on the HK21/23 can be found at HKPRO.

M60 Series General Purpose Machine Gun

[M60E3] [M60E4] [M60D]

Saco Defense/PCC Ordnance
Saco, Maine UCAS/LV, PCC

7.62x51mm NATO

Operation: Gas, Piston

Safety: Two position switch on left side, safe/fire selector

Sights: Folding adjustable ladder, protected post front

Barrel: Varies (18-22")

Weight: Varies

Magazine Capacity: 100 rounds, belted

Modes of fire: Safe, fully automatic

Cyclic Rate: 500-650 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M60	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**9**	**6/14 days**	**6,500 ¥**
M60E3	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**9**	**6/14 days**	**6,300 ¥**
M60E4	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**10.5**	**6/14 days**	**6,800 ¥**
M60D	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**9**	**6/14 days**	**6,000 ¥**

- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.
- Includes a bipod.

Based heavily on WWII-era German machine gun developments (the M60 takes advantage of the MG42 belt feed system and the FG42 gas operation system), the M60 is a gas operated, disintegrating link, belt-fed, air-cooled machine gun. It fires from an open bolt and features a quick-change barrel. The barrel is Stellite-lined and chrome plated for long service.

The M60 machine gun fires 7.62mm NATO standard ammunition, it can penetrate light armor. The M60 proved its combat effectiveness in Vietnam by providing defensive/suppressive fire enroute to and within numerous hostile landing zones. The M60 may be employed as either an assault or unit support weapon.

Saco Defense, a subsidiary of General Dynamics, has been the producer of the M60 machine gun since 1960. In 1984, Saco licensed a Las Vegas-based company called US Ordnance to produce all models of the M60. Since the seccession of the Native American Nations, that company has come under new management under the name PCC Ordnance and is now located within the Pueblo Corporate Council. Quality is assured by continuous quality control inspections and use of PCC Government-approved tooling, fixtures and functional gauges. Logistics support is readily available from PCC Ordnance, and we will assist the user in developing an in-country logistics capability to support the M60 Series Machine Gun.

Aside from the baseline M60 general purpose machine gun, the M60 is available in three different configurations to suit mission requirements.

M60E3

The M60E3 is the lightest product improvement of the M60. It is a gas operated, disintegrating link belt-fed, air-cooled machine gun. It fires from an open bolt and features a quick change barrel with fixed headspace. The barrel is Stellite-lined and chrome-plated for long service life. The M60E3 differs from the standard M60 in that it is five pounds lighter, has an easily deployable bipod mounted to the receiver and a carrying handle attached to the barrel; features twin pistol grips for better control and incorporates other improvements such as: ambidextrous safety, universal sling attachments, advanced sights, winter trigger guard, and improved charging. Two optional barrel types are available depending on user application:

- Heavy weight for sustained fire
- Light weight, short length for assault and maneuver.

The M60E3 fires NATO standard 7.62mm ammunition. Because it is more easily stabilized than other 7.62mm machine guns, it delivers this fire accurately and reliably out to its one kilometer maximum effective range. Firing state-of-the-art saboted rounds, it is capable of defeating light armor at tactical engagement ranges.

The M60E3, like the M60, may be employed as either an assault or unit support weapon. The new configuration has several advantages. In the assault, the twin pistol grips provide better control while firing on the move. Quickly deployable bipod legs permit instantaneous transition to the prone position for covering fire. The combination of the receiver mounted bipod legs and the carrying handle attached to the barrel greatly facilitate rapid changes of hot barrels. For support fire delivered from prepared position, the M122 tripod with traversing and elevating mechanism is available.

M60E4 (MK43 MOD 0)

The M60E4 7.62mm light machine gun represents significant reliability and user-friendly improvements over the M60, M60D, M60E3 machine guns. The series consists of two (2) configurations: LMG (ground), mounted (aircraft and boat).

- All major components are directly interchangeable with other M60 configurations.
- 30% improved belt pull, increasing reliability.
- Thick-walled barrel for sustained firing.
- Fail-safe reversible piston, positive-lock gas cylinder extension.
- Barrel changing handle eliminates need for heat mitten.
- Lightweight, one-handed operated receiver mounted bipod eliminates the weight of a bipod on the spare barrel.
- Lightweight forearm/pistol grip for improved control and protection during firing.
- Feed cover eliminates charging jams and improves operator safety.
- Optional integrated fire control system bracket gives the weapon 24 hour capability (Standard foot or Picatinny rail; STANAG mount).
- Lightweight trigger assembly with ambidextrous safety switch and winter trigger guard allows gun to be fired with winter mittens.
- Optional new flat spring on trigger assembly prevents accidental detachment of the assembly.
- Lightweight buttstock with hinged shoulder rest and improved buffer attachment mechanism provides for fail-safe attachment of the buttstock to the receiver.
- Forward grip enlarged for improved control, better heat protection.

M60D

The M60D model differs from the standard M60 in that the butt stock and trigger grip assemblies are replaced with spade grips and a spade trigger assembly. The rear sight is replaced with a ring sight to assist in acquiring and tracking targets. This permits aimed fire from a pedestal or other similar mount. Other parts are required to adapt the gun to the ammunition feed system. The M60D Enhanced incorporates a bipod mounted on the front of the receiver instead of mounted on the barrel. The bipod is the same one used on the M60E4 therefore increasing interchangeability. The new bipod is lighter but just as strong as the original and reduces the weight and bulk of the spare barrels. The M60D Enhanced also incorporates some of trie features found on the M60E3, such as an extra sear notch on the operating rod, which prevents a runaway machine gun. The M60D Enhanced also features the M60E3 feedcover, which permits the user to load the weapon with the bolt in the closed position.

The ring sight and spade grips makes acquiring and tracking a target quite simple, even while in motion. The weapon is also readily removable to permit loading/unloading of a helicopter and to provide protective fire outside the aircraft after landing. The M60D proved its combat effectiveness in Vietnam by providing defensive / suppressive fire enroute to and within numerous hostile landing zones.

The M60D, like the M60E3, is the model designed for mounting on wheeled and tracked vehicles, naval craft, and as a door gun on utility and cargo helicopters. Mounted on pintle type assemblies, the M60D provides fire support for ground operations.

Engineering oversights in the original M60 resulted in difficult in-the-field barrel changes and a perceived lack of reliability due to incorrect assembly. These problems were rectified in some ways only to be compounded in others by further modifications (A1/E1/E2 variants). Nevertheless, the M60 served the US military for more than 40 years before its gradual phase-out and replacement, courtesy of Fabrique Nationale's nearly as aged MAG-based M240 and MK48 MOD 0 machine guns.

Para Ordnance High Capacity 1911

Springfield Armory
Geneseo, IL UCAS

.45 ACP, .40 S&W, 9mm Para

Operation: Short Recoil

Action: Single Action

Safety:
Frame-mounted, left side

Sights:
Fixed 3-Dot

Barrel: 5" (127mm)

Weight: 2.5 lbs. (1.13 kg)

Magazine Capacity:
14-18 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P14.45	**.45 ACP**	**Medium Pistol**	**6**	**14 clip**	**SA**	**8M**	**1.1**	**2/24 hrs**	**900 ¥**
P16.40	**.40 S&W**	**Medium Pistol**	**6**	**16 clip**	**SA**	**8M**	**1.1**	**2/24 hrs**	**900 ¥**
P18.9	**9mm Para**	**Medium Pistol**	**6**	**18 clip**	**SA**	**7M**	**1.1**	**2/24 hrs**	**900 ¥**

The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

It could be argued that all self-defense pistols have their genesis in the M1911 design in one way or another. One thing is certain. The M1911 and .45 ACP cartridge changed the world. Both just happened to be products of the genius of one man.

The M1911 was designed by John Browning and adopted by the United States Army in 1911. Slight non-mechanical revisions were made to the design, most noticably an arched mainspring housing along the butt of the grip, a shortened trigger and a recess cut into the frame behind the trigger well. The revised weapon was called the M1911A1 and was adopted by the US Army in 1924.

The M1911 and variants were the standard sidearm of the United States military forces through four wars and 74 years. In 1985, the trusty M1911A1 was replaced by a more modern design which fired an equally venerable cartridge, the 9mm Beretta 92FS (M9 Pistol). Needless to say, 74 years of use developed a very die-hard following for the M1911 and the .45 ACP. So much so that the parts of the US Marine Corps decided to keep (and modify) their M1911A1's.

Today, many companies offer their own revised and updated versions of the M1911 design. In 1990, a Canadian company known as Para-Ordnance introduced a wide-body frame capable of housing a double stacked magazine, effectively doubling the ammunition capacity of the 1911 design. This frame sparked enormous interest in both competition and defense markets, driving several other manufacturers (Springfield Armory, STI, Armscorp, etc...) into the high-capacity 1911 market. However, shooters of smaller stature have noted that these wide frames are often too large for their hands to grasp properly, making it somewhat difficult to control the pistol.

The M1911 as well as the .45 ACP cartridge have proven themselves to be two outstanding designs, near perfect for self-defense use. Both will more than likely be around for many, many years to come.

Snaiperskaya Vintovka Dragunova (SVD)

OSJC Izhmash
Izhevsk, Russia

7.62x54Rmm

Operation: Gas, Piston (Short)

Safety: Right side selector lever, 0-1

Sights: Adjustable notch rear, hooded post front, 4x scope

Barrel: 24.4" (620mm)

Weight: 9.92 lbs. (4.5 kg)

Magazine Capacity:
10 rounds, detachable box

Modes of Fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SVD	**7.62x54Rmm**	**Sniper Rifle**	**NA**	**10 clip**	**SA**	**9S**	**4.3**	**3/7 days**	**950 ¥**
SVDS	**7.62x54Rmm**	**Sniper Rifle**	**NA**	**10 clip**	**SA**	**9S**	**4.7**	**3/7 days**	**1,050 ¥**

- SVDS includes a side folding buttstock which provides a Conceal Rating of 2 when folded.
- PSO-1 scope provides Level 1 magnification. PO Talon scope provides Level 2 magnification (+200¥).

Designed by Evgeniy Dragunov and accepted for service in the Russian military in 1963, the *Snaiperskaya Vintovka Dragunova* (Sniper Rifle Dragunov - SVD) has become one of the most respected sniper rifles in existence. Though it is not considered as accurate as sniper rifles commonly found in western military service, the SVD has repeatedly shown that it is certainly accurate enough for the vast majority of anti-personnel military operations. In the Russian military, every infantry squad has one rifleman equipped with and specially trained to use the SVD.

Loosely based on the Kalashnikov rifle design, the SVD differs in several ways. First, the SVD was designed from the very beginning as a sniper rifle platform (quite possibly the first ever, definitely the first semi-automatic sniper rifle).

Second, the rifle is designed to fire the more powerful 7.62x54Rmm Russian rifle cartridge. This cartridge is ballistically on par with the US .30-06 rifle cartridge and was adopted for use in the Mosin-Nagant M1891 bolt action rifle. Though it uses a rimmed case, it is still in use today with the militaries of several former combloc nations, making it the oldest continuously-used military rifle cartridge in the world. However, this rimmed cartridge presented a problem during the development of the SVD. It is said to have taken more than a year to design the magazine alone.

Third, instead of using Kalashnikov's long-stroke gas piston form of operation, Dragunov designed a short-stroke gas piston system which lowers the weight of the bolt carrier, reducing muzzle flip and recoil. The gas system also includes a regulator which can be adjusted to suit certain adverse conditions, such as excess fouling and extremely cold temperatures.

The SVDS (*Snaiperskaya Vintovka Dragunova Skladnaya*) is designed for use by paratroopers. It includes a slightly shortened barrel (22.3"/565mm) and a side-folding skeletonized metal stock, allowing the rifle to be stowed more easily.

The SVD/SVDS is issued with the PSO-1 (*Pritsel Snaiperskii Opticheskii*) 4x24mm rangefinding scope with illuminated reticle. The PSO-1 also includes an infrared filter which detects the emission of infrared light. Rifles can be ordered with the PO Talon 3-9x42mm (1P21) variable power rangefinding scope with illuminated reticle. With both scopes, rangefinding is calculated manually through the use of a specially designed reticle. The scope is attached to the rifle via a quick-mount. Backup iron sights are retained for close range engagements.

Other former combloc countries such as Romania and Yugoslavia (Serbia) have fielded rifles only aesthetically based on the SVD. These rifles (PSL/FPK, M76) use a long-stroke piston form of operation similar to the Kalashnikov and thus do not have the same accuracy potential as the SVD or its variants.

The SVD is sold commercially under the moniker "Tigr".

http://kalashnikov.guns.ru/

Bizon

OSJC Izhmash
Izhevsk, Russia

.380 ACP, 9mm Mak, 9mm Para

Operation: Blowback

Safety: Right side selector lever, 0-1-30

Sights: Adjustable notch rear, protected post front

Barrel: 9.4" (240mm)

Weight: 5.45 lbs. (2.47 kg)

Magazine Capacity: 45-64 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 650-750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
2	**9mm Makarov**	**SMG**	**3**	**64 clip**	**SA/FA**	**5M/7M**	**3.2**	**3/7 days**	**500 ¥**
2-01	**9mm Para**	**SMG**	**3**	**53 clip**	**SA/FA**	**7M**	**3.2**	**3/7 days**	**500 ¥**
2-02	**.380 ACP**	**Heavy Pistol**	**3**	**64 clip**	**SA/FA**	**5M**	**3.2**	**3/7 days**	**500 ¥**
2-07	**7.62x25mm**	**Light Carbine**	**3**	**45 clip**	**SA/FA**	**7M**	**3**	**3/7 days**	**500 ¥**

- All models include a folding buttstock which provides +1 Conceal when folded.
- Muzzle brake provides -1 recoil compensation.
- Extra helical magazines 50¥ each. Alternately, the 2-07 model can use a conventional 35-round box magazine. (25¥)

Designed by Victor Kalashnikov and Alexey Dragunov, both sons of famous Russian small arms designers, the PP-19 Bizon is a blowback-operated submachine gun based on a previous submachine gun design, the PP-AK. In fact, the Bizon shares 60% parts commonality with the AK 100 series rifles. Though the Bizon uses simple blowback operation, the manual of arms is identical to that of the AKM, thus cutting down on training time for those familiar with the standard Russian assault rifle.

The Bizon is available in four calibers and is deigned to use a 64-round helical feed magazine, more than double the magazine capacity of comparable submachine guns. Constructed of either aluminum alloy or a black polymer, the magazine cannot be loaded incorrectly. The magazine is attached to the weapon by a set of lugs on the front sight base which engage notches at the top front of the magazine. The magazine engages these notches and is then rotated upward and into the magazine well. The standard AK paddle magazine latch engages a lug on the rear of the magazine, locking it in place. The magazine itself can then be used as a handrest.

There are actually three variants of the Bizon submachine gun. Bizon-1 includes a simple, two-port muzzle brake somewhat similar to that found on the AK74. The sights consist of a hooded post front sight similar to that found of the SVD sniper rifle, and a protected tangent rear sight graduated in 50, 100, and 150 meter increments.

The Bizon-2 includes a flash suppressor identical to that of the SVDS, a protected post front sight and open tangent rear sight similar to the AK74. The magazine was also modified to include four small viewing ports drilled into its side so that the user can be aware of how many rounds remain in the magazine. The ports are marked 64, 44, 24, and 4. Both the Bizon-1 and Bizon-2 include a metal, side-folding skeleton stock.

The Bizon-3 differs from the Bizon-2 in that it includes a protected diopter rear sight that has been moved to the rearmost point of the receiver, increasing the sight radius and thus accuracy. The stock is of a tubular design which folds over the top of the weapon, reducing the size signature of the weapon slightly.

Along with a 45-round helical magazine, the Bizon-2-07 (also known as PP-27) can use modified PPSh-41/PPS-43 box magazines containing 35 rounds of 7.62x25 Tokarev ammunition. Having a higher muzzle velocity that the other cartridges the Bizon is chambered for, the 7.62x25mm cartridge exhibits slightly improved range and armor penetration characteristics when AP bullets are employed. The 2-07 also includes a solid polymer AK74-type folding buttstock.

On all Bizon models the provided flash suppressor may be removed for the attachment of a sound suppressor or different designs of muzzle brakes or compensators. All models include the standard AK optic mounting bracket on the left side of the receiver. Like all rifles using this system, stocks cannot be folded while the optic and mount are attached to the rifle. Semi-automatic versions of all models are available.

http://club.guns.ru/

Alexandrov Kalashnikova 107 and 108

OSJC Izhmash
Izhevsk, Russia

5.45x39mm, 5.56x45mm NATO

Operation: Gas, BARS

Safety: Right side selector lever, 0-1-3-30

Sights: Adjustable notch rear, protected post front

Barrel: 16.3" (415mm)

Weight: 7.93 lbs. (3.6 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 850 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AK107	**5.56mm NATO**	**Assault**	**2**	**30 clip**	**SA/BF/FA**	**9M**	**3.6**	**3/7 days**	**800 ¥**
AK108	**5.45x39mm**	**Assault**	**2**	**30 clip**	**SA/BF/FA**	**9M**	**3.6**	**3/7 days**	**800 ¥**

- Both models include a side folding buttstock which provides +1 Conceal when folded.
- Muzzle brake provides -3 recoil compensation. BARS system provides an additional 3 points of recoil compensation.

The Avtomat Kalashnikova is a global sensation, probably the most popular and recognizable rifle throughout the world. With some 35 million rifles being manufactured and distributed throughout Soviet satellite nations during the Cold War, the original 1947 design eventually evolved into countless variations, finding homes in the hands of army regulars, "freedom fighters" and terrorists alike.

Designed in recognition of the German WWII-era StG44, the AK-47 has come to define the term Assault Rifle: *"A light and compact selective-fire automatic rifle firing a cartridge of such power that it can deliver effective fire to a range of about 500 meters, but at the same time will permit the weapon to be fired in the automatic mode from the shoulder."*

The AK107/108 rifles are slightly different beasts than the rest of the 100 series rifles. Based on the AL-7 rifle developed by Youriy Alexandrov in the early 1970s, the AK107/108 rifles include the Balanced Automatics Recoil System (BARS) which reduces the effects recoil. The BARS system replaces the traditional Kalashnikov gas piston operating system. BARS works by shifting mass toward the muzzle of the rifle as the bolt and bolt carrier recoil rearward. In this case, a forward-recoiling rail (orange) containing a return spring assembly and synchronization sprocket (red) resides above the bolt (dark gray)/bolt carrier (light gray) assembly. Two gas pistons are used. One is attached to the bolt carrier, the other attached to the BARS rail. As the rifle is fired and the bullet passes the gas port in the barrel (blue), gas pressure impinges upon the bolt carrier assembly and drives it rearward. At the same time, gas pressure drives the BARS rail toward the muzzle, with a sprocket engaging holes in both the BARS rail and the bolt carrier, synchronizing the motion of the two recoiling devices. The forward motion of the BARS rail partially cancels out the rearward motion of the bolt carrier, thereby reducing recoil. Simple and effective.

Unfortunately, the AL-7 and its Balanced Automatics Recoil System was never adopted by the Soviet Army. The project was overshadowed by the acceptance of the AK-74 due to cost considerations. The passage of time has allowed manufacturing technology to advance, finally making the AL-7 concept economically viable, presenting itself in the form of the AK107 and AK108 rifles.

The AK108 is offered in 5.56x45mm NATO caliber in order to attract an export market while the AK107 rifle is available in the 5.45x39mm chambering. Unlike most Kalashnikov rifles, the AK107/108 include a 3-round burst setting. Polymer furniture replaces the traditional wood, which has led to the series nick-name "Black Kalashnikovs". Iron sights graduated to 1000 meters and the AK-74 muzzle brake are standard on all models.

http://club.guns.ru/

Avtomat Nikonova 94 "Abakan"

OSJC Izhmash Izhevsk, Russia	
5.45x39mm Soviet	
Operation: Gas/Blowback	
Safety: Crossbolt safe/fire, Left side selector lever 1-2-30	
Sights: Rotary notch/diopter rear, protected post front	
Barrel: 15.9" (405mm)	
Weight: 8.48 lbs. (3.85 kg)	
Magazine Capacity: 30 rounds, detachable box	
Modes of Fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 1800/600 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AN-94	5.45x39mm	Assault Rifle	2	30 clip	SA/BF/FA	9M	3.6	3/7 days	1,250 ¥

- Includes a side folding buttstock which provides +1 Conceal when folded.
- The AN-94 includes an internal recoil mechanism which delays recoil until after the second shot of a burst is fired. Therefore, a two round burst has no recoil modifier. If a player chooses to fire again on the second Simple Action of a Combat Phase, apply a +2 recoil modifier to that shot.
- Muzzle brake reduces recoil modifiers x0.66. Round up.

The Avtomat Nikonova was type-classified in 1994 by the Russian military and was quickly put into service with SpetsNaz special forces groups. However, due to the relatively high cost of the rifle and the poor state of the Russian economy at the time, widepread acceptance did not occur and the bulk of the Russian military is issued the much less expensive AK-74M.

Designed by famed small arms engineer Gennady Nikonov (who was himself a member of Evgeny Dragunov's design team at Izhmash), the AN-94 assault rifle is designed around an entirely original system of operation known as Blowback Shifted Pulse (BBSP). This system improves hit probability by increasing rate of fire while simultaneously delaying the effects of recoil. Using this method, Izhmash company literature claims a 1.5 times increase in effectiveness over all other conventional assault rifles in unsupported positions.

The BBSP system is unique in that it uses both gas operation and blowback operation to achieve a high rate of fire. When a shot is fired, recoil drives the entire barreled action rearward inside of the weapon's polymer body. At nearly the same instant, propellant gas is tapped into a tube above the barrel, which then impinges upon a piston connected to the bolt carrier, driving the bolt group rearward. In this way, the bolt is unlocked and the action opened, ejecting the spent cartridge case. While the bolt group is driven rearward, a cable and pulley system attached to the bolt carrier uses this motion (and reverses it) in order to push the next cartridge into a loading tray. As the bolt group reaches its most rearward point, a lug on the striker (or hammer) engages a recess in the bolt carrier. As the bolt group moves forward again (under pressure of a recoil spring), the bolt pushes the cartridge into the chamber, the bolt locks and the inertia of the striker causes it to strike the firing pin, so firing the second shot (at a rate of 1800 rpm). All of this occurs while the barreled action recoils inside of the weapon's body. Thus, recoil does not alter the position of the rifle until well after the second bullet has left the barrel. At this point, depending upon the mode selected, the trigger mechanism will either disconnect (2-round burst) or engage the sear after each shot, momentarily delaying the release of the striker and dropping the rate of fire to 600 rpm (full auto).

A folding buttstock makes the assault rifle convenient for handling on march, landing and transporting. The assault rifle is designed with bayonet mounting lugs and the underbarrel grenade launcher GP-25. The assault rifle can be easily accommodated into the firing ports of various combat vehicles (BMP, BMD and helicopters).

The assault rifle may be complete with a detachable night optical sight, as well as with tritium dots for firing at night.

http://club.guns.ru/, US Patent 6516700

Avtomat Kalashnikova 100 Series

OSJC Izhmash
Izhevsk, Russia

Various Chamberings

Operation: Gas, Piston

Safety: Right side selector lever, 0-1-30

Sights: Adjustable notch rear, protected post front

Barrel: 12.4" (314mm)

Weight: 7.27 lbs. (3.3 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AK102	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/FA**	**9M**	**3.3**	**3/7 days**	**500 ¥**
AK104	**7.62x39mm**	**Carbine**	**3**	**30 clip**	**SA/FA**	**9M**	**3.3**	**3/7 days**	**500 ¥**
AK105	**5.45x39mm**	**Carbine**	**3**	**30 clip**	**SA/FA**	**9M**	**3.3**	**3/7 days**	**500 ¥**

- Both models include a side folding buttstock which provides +1 Conceal when folded.
- Muzzle brake provides -3 recoil compensation.

The Avtomat Kalashnikova is a global sensation, probably the most popular and recognizable rifle throughout the world. With some 35 million rifles being manufactured and distributed throughout Soviet satellite nations during the Cold War, the original 1947 design eventually evolved into countless variations, finding homes in the hands of army regulars, "freedom fighters" and terrorists alike.

Designed in recognition of the German WWII-era StG44, the AK-47 has come to define the term Assault Rifle: *"A light and compact selective-fire automatic rifle firing a cartridge of such power that it can deliver effective fire to a range of about 500 meters, but at the same time will permit the weapon to be fired in the automatic mode from the shoulder."*

The 100 Series rifles are essentially the same as older variants such as the AKM and AK-74, differing in that they are now offered in a NATO caliber (5.56x45mm) in order to attract an export market, and all models include a side-folding stock and muzzle brake. The 100 series rifles are also manufactured on updated machinery to adhere to tighter tolerances. This only complements weapon's renowned reliability, making a legendary rifle even better. Polymer furniture replaces the traditional wood, which has led to the series nick-name "Black Kalashnikovs". Iron sights graduated to 1000 meters and the AK-74 muzzle brake are standard on all models.

Licensed copies of the Avtomat Kalashnikova have been manufactured in Bulgaria, China, Egypt, East Germany, Hungary, Iraq, North Korea, Poland, Romania, Ukraine, Yugoslavia, and now even North America. Due to the sheer number of Kalashnikov models and copies, it would be quite an undertaking to list each available model here. The rules listed above are intended to represent the real, high-quality, Russian-manufactured rifles and their availability in North America. Knock-offs manufactured in other countries (Bulgarian and Romanian rifles being very common) should be more available and at lower cost, per GM discretion. Other stats should remain unchanged.

http://kalashnikov.guns.ru/

Heckler & Koch P2000

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .357 SIG, .40 S&W

Operation: Short Recoil

Action: CDA, Double/Single

Safety: None (CDA); ambid. decocker (DA/SA)

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 3.66" (93mm)

Weight: 1.36 lbs. (620 g)

Magazine Capacity:
13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P2000	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.62**	**2/24 hrs**	**885 ¥**
P2000	**.357 SIG**	**Medium Pistol**	**6**	**12 clip**	**SA**	**9M**	**0.62**	**2/24 hrs**	**885 ¥**
P2000	**.40 S&W**	**Medium Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.62**	**2/24 hrs**	**885 ¥**

- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.

The HK P2000 is the latest service pistol development by Heckler & Koch.

The design specifications when starting development were tough and short. They reflected the difficulty in today's police service and the resulting requirements: A pistol had to be designed, incorporating features which effectively reduce the probability of so-called "handling-related stress-drivers" during a police mission and which at the same time improve the hit-rate capabilities of the individual shooter due to modular grip sizes and ergonomic design concepts. Now the new HK P2000 is ready for service. It is the consequent realisation of the guidelines above. Based on the advanced technology of the HK USP COMPACT/P10, it is perfectly tailored to the needs of todays police services.

This unique pre-cocked hammer system (Constant Doule Action) combines the advantages of a cocked striker component (constant level of trigger pull with short trigger travel from first to last round fired) with the double action hammer system. This ensures an extremely safe pistol with regard to unintentional firing and, in case of failure to ignite, the possibility of a second or third pull without the need of first pulling the slide back to re-cock the system.

A set of easy-to-install modular grips allow the P2000 to be custom fitted to any shooter's hand.

Ambidextrous slide release levers and magazine release levers make handling the P2000 natural and easy for right and left-handed shooters.

A highly reliable, safe, durable, and accurate compact pistol with significant ergonomic features, the P2000 is currently available in 9x19mm, .357 SIG and .40 S&W.

- Modular grip with exchangeable back straps to easily adjust the grip size to the size of the shooter´s hand.
- Frame dimensions and weights which fully comply with the requirements of the full range of police missions - even concealed carrying - by avoiding excessive size reduction and the resulting draw backs, such as lack of accuracy, less psychological effect and firepower.
- Universal mounting grooves molded in the polymer frame that allow the fitting of tactical accessories.
- Ambidextrous handling ease through bolt catch lever and magazine release on both sides.
- Flat line of sight due to low-built design.
- Advanced design with smoothened outer surfaces to avoid any obstacles when quickly drawing it from the holster.
- Available with ambidextrous decocking lever.
- Interchangeable magazine floorplates, short or extended version.
- An innovative pre-cocked hammer system which is unique in the world of service pistols. It ideally combines the pros of the cocked striker technology (constant level of trigger pull and short trigger travel from first to last round fired) with the fundamental pros of a DA-hammer system (high safety level with regard to unintended firing and, in case of failure to ignite, the possibility of a 2nd or 3rd trigger pull without the need of first pulling the slide back to re-cock the system).
- Extremely slimline weapon profile.
- Polymer recoil absorber bushing similar to USP COMPACT/P10.

Heckler & Koch USA

Taurus Model 608

Forjas Taurus S.A.
Porto Alegre, Amazonia

.357 Magnum

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 4", 6.5", 8.375"

Weight: Varies

Magazine Capacity:
8 Rounds

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
608, 4"	.357 Mag	Medium Pistol	6	8 cyl	SA	9M	1.24	2/24 hrs	470 ¥
608, 6"	.357 Mag	Heavy Pistol	5	8 cyl	SA	9M	1.24	2/24 hrs	485 ¥
608, 8"	.357 Mag	SMG	4	8 cyl	SA	9M	1.24	2/24 hrs	485 ¥

- Barrel porting is optional on all models. Provides the equivalent of 1 point of recoil compensation. (+50¥)
- Stainless steel contruction +65¥.

This large frame offers an incredible 8 shots of .357 Magnum! Hand fitted actions smooth as silk, and crisp triggers right out of the box! They are hammer forged from chrome-moly or stainless steel for tough performance and sure accuracy. These sleek lines and precision parts define the Taurus reputation for quality and customer satisfaction, especially in the superior performance of these target and hunting handguns.

Taurus USA

Taurus Raging Bull

[M454 8"]

Forjas Taurus S.A.
Porto Alegre, Amazonia

Varies

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 5", 6.5", 8.375"

Weight: Varies

Magazine Capacity: Varies

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
416	**.41 Mag**	**Heavy Pistol**	**5**	**6 cyl**	**SA**	**9M**	**1.5**	**3/36 hrs**	**785 ¥**
444	**.44 Mag**	**Heavy Pistol**	**5**	**6 cyl**	**SA**	**10M**	**1.5**	**3/36 hrs**	**785 ¥**
454	**.454 Casull**	**Heavy Pistol**	**5**	**5 cyl**	**SA**	**8M/12M**	**1.5**	**3/36 hrs**	**785 ¥**
480	**.480 Ruger**	**Heavy Pistol**	**5**	**5 cyl**	**SA**	**11M**	**1.5**	**3/36 hrs**	**785 ¥**

- Stats above are for 5" and 6.5" barreled versions. All models are available in 8.375" barrel version. -1 Conceal.
- Double all uncompensated recoil for .454 Casull and .480 Ruger models.
- Models chambered in .454 Casull may also fire the .45 Colt cartridge, with a Damage Code of 8M. No recoil penalty.
- Barrel porting (standard on all models) provides no recoil compensation benefits.

These heavy-hitting calibers, coupled with the award winning Raging Bull design, makes the perfect hunting handgun. The new Raging Bulls are available in barrel lengths of 5", 6.5" and 8.375", finished in Matte Stainless Steel. Scope mount bases and a custom carry case are available for the Raging Bull™.

The features that tamed the world’s most powerful revolver cartridge make shooting the popular .44 Magnum load a pleasure. A gas expansion chamber and barrel porting control muzzle flip, and the Raging Bull’s distinctive grip takes the sting out of big handgun recoil. Add Taurus’ rock-steady scope mount base and your favorite rings and optics to make your Raging Bull™ a venerable hunter.

A well-deserved reputation for outstanding strength, reliability, and accuracy. The mighty Raging Bull™ Model 454 is also available in the powerful .44 Magnum round, the venerable .41 Magnum and the 480 Ruger cartridge as well. A double-lockup cylinder assures strength where needed on this powerful hunter. Scope mount bases are available to match the 6.5" and 8-375" barrel lengths and finishes. The Raging Bull features factory porting and the Taurus Security System. All Raging Bulls carry the Taurus Unlimited Lifetime Repair Policy.

Taurus USA

Taurus Raging Hornet, Bee, Thirty

Forjas Taurus S.A.
Porto Alegre, Amazonia

.22 Hornet, .218 Bee, .30 Carb

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: Adjustable target rear, pinned post front

Barrel: 10" (254mm)

Weight: 3.25 lbs. (1.47 kg)

Magazine Capacity:
8 Rounds, Cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Hornet	**.22 Hornet**	**SMG**	**4**	**8 cyl**	**SA**	**8M**	**1.5**	**4/48 hrs**	**900 ¥**
Bee	**.218 Bee**	**SMG**	**4**	**8 cyl**	**SA**	**8M**	**1.5**	**4/48 hrs**	**900 ¥**
Thirty	**.30 Carbine**	**SMG**	**4**	**8 cyl**	**SA**	**9M**	**1.5**	**4/48 hrs**	**900 ¥**

- .22 Hornet and .218 Bee models use rifle cartridges and receive an automatic x0.75 Armor Modifier.
- With scope mount +30 ¥. Extend range to Light Carbine when used with scope.

They are built with the same massively strong design as our RAGING BULL™ .454 Casull revolver, with a signature bright Hornet Yellow grip insert.

They feature dual cylinder lockup, eight-shot capacity, and a heavy unported 10-inch barrel for maximum shooting stability. The Raging Accuracy Series comes in either .22 Hornet, .218 Bee or .30 Carbine and when fired, they barely move in your hand. Each gun is drop hammer forged and comes fully equipped with precision-adjustable open sights—but to get truly RAGING ACCURACY you'll want to use the included new Taurus Scope Mount Base to fit a high-magnification scope.

Ignition is the Key: The Taurus positive transfer-bar safety ignition system uses a flat-fronted hammer to transfer its force through an intervening piece of metal to a spring-loaded firing pin in the frame. By comparison, the direct-impact hammer-ignition of older centerfire designs was lightweight, without sufficient mass to hold forward at the moment of ignition, allowing the rearward force of the fired case to kick hard enough against the firing pin to bounce the hammer.

On the Taurus revolvers, the entire combined masses of the heavier hammer and transfer bar provides sufficient inertial resistance to retard rearward case movement at the critical instant.

Bred for Accuracy: RAGING ACCURACY barrels are custom-made, hammer-forged and feature a special 1:10 rifling twist. The fast 1:10 is better for a handgun, and provides rifle-grade accuracy to the limit of the cartridge's effective range. The 10-inch length guarantees sufficient velocity to enable today's high-performance bullets to do their stuff out to 100 and even 150 yards.

Taurus USA

Taurus Tracker

[M627 Titanium 6" Barrel]

Forjas Taurus S.A.
Porto Alegre, Amazonia

Varies

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: Varies

Weight: Varies

Magazine Capacity: Varies

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
627	**.357 Mag**	**Heavy Pistol**	**6**	**7 cyl**	**SA**	**9M**	**0.82**	**2/24 hrs**	**450 ¥**
425	**.41 Mag**	**Heavy Pistol**	**6**	**5 cyl**	**SA**	**9M**	**0.82**	**2/24 hrs**	**450 ¥**
455	**.45 ACP**	**Medium Pistol**	**6**	**5 cyl**	**SA**	**8M**	**0.68**	**2/24 hrs**	**450 ¥**
460	**.45 Colt**	**Medium Pistol**	**6**	**5 cyl**	**SA**	**8M**	**0.68**	**2/24 hrs**	**450 ¥**

- Models listed above are 4" barrel version. All models are available in 6" barrel version. -1 Conceal.
- All models include barrel porting to the equivalent of 1 point of recoil compensation. Does not apply to Titanium models.
- All models are available in titanium alloy construction. Reduce weight 20% and increase cost 25%.

Hammer forged stainless steel models of the Model 627 .357 Magnum 7-shot and the Model 425 5-shot in .41 Magnum will be appearing in backpacks and fishermen's tackle boxes, especially when there are bears and other predators around. The Taurus Tracker has established a standard for pack guns for hunters and hikers.

Model 627 in .357 Magnum - in both Matte Stainless Steel and Total Titanium. Whether chosen by a hiker who needs certain protection, or selected by a hunter to administer the coup de grace,these mighty magnums on a compact frame feature adjustable sights and a four or six inch barrel that resembles the famous Taurus Raging Bull, complete with stylized porting for taming recoil and faster follow-up shots. Large, easy to align black sights with a red insert make a great pick for target shooters and plinkers too. And, when loaded with mild .38 Specials, the Model 627 makes a perfect beginner's revolver, ready to take on Magnum loads when the time comes for that. The Titanium Trackers come in Shadow Gray, and all wear the patented Taurus Ribber Grip, a shock absorbing system that takes the pain out of shooting Magnum loads while allowing for a firm grip.

Models are also available in the venerable .45 ACP and .45 Colt. The .45 Stellar Tracker in .45 ACP is available in 2" (**Light Pistol ranges, weight 0.68**), 4" and 6.5" (**Heavy Pistol ranges, weight 0.82**) barrels and uses the exclusive Taurus Stellar Clip to hold 5 rounds of the familiar .45 ACP and allows for easy loading and ejection. The .45 Colt Tracker holds 5 rounds and comes in a 4" or 6.5" (**Heavy Pistol ranges, weight 0.82**) barrel. All new Trackers feature adjustable sights, full-length ejector rods and the unique Taurus Ribber Grip. And, like all Taurus firearms, all Trackers carry the Taurus Security System and the Unlimited Lifetime Repair Policy.

Taurus USA

Smith & Wesson X-Frame Revolvers

500 [500 Hunter] [500 Short] [460 XVR]

Smith & Wesson
Springfield, MA. UCAS

.500 Magnum, .460 Magnum

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 8.375" (212mm)

Weight: 4.53 lbs (2.05 kg)

Magazine Capacity:
5 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
500	**.500 Mag**	**Light Carbine**	**4**	**5 cyl**	**SA**	**10S**	**2.05**	**4/48 hrs**	**990 ¥**
500H	**.500 Mag**	**Light Carbine**	**4**	**5 cyl**	**SA**	**10S**	**2.32**	**4/48 hrs**	**1,115 ¥**
500S	**.500 Mag**	**SMG**	**5**	**5 cyl**	**SA**	**9S**	**1.58**	**4/48 hrs**	**920 ¥**
460XVR	**.460 Mag**	**Light Carbine**	**4**	**5 cyl**	**SA**	**9S**	**2.05**	**4/48 hrs**	**1,000 ¥**

All models include a muzzle brake (Gas Vent 1). +2 recoil modifier when muzzle brake is installed. +3 recoil without brake.

The new 500 S&W Magnum® is the most powerful production revolver cartridge ever developed.

The Model 500 is packed end-to-end with never-before-seen Smith & Wesson features. The cartridge can deliver more than a ton and a quarter of muzzle energy. The Model 500 is built on the massive new X-Frame. It weighs 72.5 ounces with an 8 3/8-inch barrel and has a brawny five-shot cylinder.

Big as it is, the Model 500 is well balanced and remarkably manageable, thanks to its recoil compensator and brand-new Hogue designed Sorbathane® wraparound rubber grip which is K-frame in size.

The Model 500 features a strong ball-detent cylinder latch, a solid ejector rod and a two-piece barrel and barrel-shroud design for maximum strength and accuracy.

With Smith & Wesson's micrometer-click adjustable rear sight and interchangeable front sight blades, the Model 500 is ready to hunt any big-game animal walking the Earth.

The Model 500 S&W Magnum Hunter, it features a 10.5-inch (266mm) barrel for increased velocity and bullet energy and weighs 82 ounces (2.32 kg). Other Performance Center features and benefits include a precision crowned muzzle for enhanced accuracy, flash chromed forged hammer and trigger for a crisp trigger break, tuned Performance Center action for a smooth double-action trigger pull and an embossed mainspring which results in an average 20% reduction in trigger pull. Also included are sling swivel studs and sling, longer integral Weaver style base mount for optics and a PC gun rug/carrying case.

The Smith & Wesson .460 XVR (Extreme Velocity Revolver) is the newest revolver to use the X-Frame. Base on a lengthened .45 Colt case, the .460 Magnum fires a 200 grain bullet at 2,400 feet per second (for 2,557 fpe). The 460 XVR can also fire .454 Casull and .45 Colt ammunition (12M and 8M respectively).

Submachine Gun History, Applications and Performance

"There are three requisites for a good movie: ninjas, explosions and MP5s."
- Ben Broughton, circa 1998


Bergmann MP18/I, the first true submachine gun

What was eventually to become known as the "submachine gun" had its genesis during the Great War, developed around the concepts of infiltration, fire and movement, specifically for the desire to clear trenches of enemy soldiers. Because engagements were unlikely to occur beyond a range of a few feet within this environment, the long range potential of a rifle was unnecessary, not to mention its size and slow, bolt-action loading method. The American solution to this problem came in the form of "trenchbrooms", otherwise known as pump-action shotguns. But Hugo Schmeisser, at the request of the German government, chose a different, much more radical route.

Following the recommendations of the German Rifle Testing Commission (Spandau) for an individual, light weight weapon capable of fully automatic fire, Schmeisser was tasked to develop a weapon for the close quarters combat of trench warfare. The weapon was designed around the German military pistol cartridge, the 9mm Parabellum. This, along with the use of a shoulder stock, allowed the weapon to be controllable in fully automatic fire, giving the user the ability to engage multiple targets in cramped quarters in a very short amount of time. Yet the weapon was still effective to ranges exceeding 100 meters. Thus, the Maschinenpistole, Model 1918 (MP18/I) was born.

The Prussian War Ministry ordered 50,000 of the MP18/I and by November 1918, some 30,000 examples had been manufactured by Theodor Bergmann Waffenfabrik and C.G. Haenel. Less than 10,000 made it to the Western Front. Nevertheless, the new weapon made such an impact that its manufacture was banned under the Versailles Treaty.

Interim Developments

During WWI, a charismatic American General went about developing his own concept for a compact automatic firearm, built around the US military pistol cartridge (.45 ACP) and designed for exactly the same purpose as the MP18/I. Development continued postwar and by 1921, John T. Thompson had perfected his design, though he preferred to call it a "submachine gun" rather than a "machine pistol".

While several other submachine gun designs had been developed postwar, most were based on the MP18/I, or its improved version, the MP28/II. The Thompson was a bit different. Both the Thompson and the MP28/II operated from an open bolt and included fire selector mechanisms. But they differed in that the MP28/II used a straight blowback mechanism, whereas the Thompson relied upon a delayed blowback form of operation patented by John Blish.


M1921 Thompson Submachine Gun

Colt's Patent Firearms Manufacturing Company manufactured Thompson's submachine gun for his company, Auto Ordnance. Unfortunately, Thompson's intended customer, the US military, was slow to accept the idea. Sales were low and mainly made by large police departments, though there were some government and commercial sales. The commercial market was abandoned when the National Firearms Act of 1934 became law. Spurred on by the Great Depression, mafia violence rooted in Prohibition, not to mention Hollywood glamorization, this federal law put a stop to the sale of automatic weapons to anyone but individuals or departments licensed by the government. By 1939, Auto Ordnance still warehoused a stock of around 4,000 submachine guns from Colt's initial production run of 15,000 units.

Fortunately for Auto Ordnance, they were the only Allied producer of a submachine gun when World War II broke out. It happened just in time to at least pad the company's fall, staying in business initially through British and French military contracts, followed by US military contracts.

The "Great Patriotic War"


PPS-42

The development of the submachine gun went into World War II without much change, though the environment in which fighting began to take place did change. Warfare over vast tracts of open farmland migrated into urban areas. The submachine gun was found to be very useful in this environment as well, where engagements still occured at relatively close range, usually less than 300 meters and often closer than 100 meters.

Many armies learned valuable lessons about the importance of the submachine gun during this time. In particular the Russians, whose invasion of Finland was repelled not only by a number of exceptionally well-trained and prepared snipers, but also through the use of the Suomi M31 submachine gun. This lesson was only magnified when German forces began invading the USSR with their MP38 and MP40 submachine guns. However, the Germans were to be taught a few lessons themselves by the quick-to-pick-up Russians, mainly during the seige of Leningrad. During the seige, Russians within the city developed and manufactured the PPS-42 submachine gun and used it quite effectively to defend their city and eventually repel the invading forces.


M3 "Grease Gun"

The submachine gun came into its own during WWII. Almost every nation fighting produced one during this time and used it to great effect, though some needed work. The US military found that the Thompson was unnecessarily complicated and difficult to manufacture. Thus, it was redesigned to use a straight blowback mechanism. Also, the compensator and barrel fins were removed while the sights were simplified and the stock permanently attached in order to speed up production. The result was the M1. Further simplifications involving the firing mechanism produced the M1A1.

The M3 "Grease Gun" was another common American SMG, designed and manufactured quickly and cheaply out of stamped sheet steel. It was also followed by a simplified model, the M3A1.

By the time Britain declared war on Germany in 1940, they had no stock of submachineguns to speak of and were buying what they could, including the aformentioned Thompson from the US. Production began on the Lanchester, a copy of the Bergmann MP28/II. But shortly after production of the Lanchester began, the design for the Sten appeared, and production was moved to the new, cheaper and easier to manufacture design. By the end of the war, nearly four million Sten submachine guns had been manufactured.

Many other submachine guns were developed by other countries during the war, notably the Austen Mk1 and Owen SMGs of Australia, the Danish Madsen, and the Italian Beretta 38A. The only exception would be the Japanese, who did not produce or use a submachine gun in any significant numbers, though they did purchase a small number of Swiss-made MP28/II SMGs before WWII began.

The Cold War

The Cold War brought on yet more submachine gun designs, spurred on by the threat of more urban combat. Several of the most infamous submachine gun designs in history were developed during this time. One even sports a name that is nearly synonymous with the word "gun".


Uzi

Upon the founding of Israel in 1948, fighting seemed to have started almost immediately. Because of trade restrictions, the Israeli Defense Force found need for a locally produced submachine gun. The harsh environment of the desert required a particularly robust design. Many minds were put to the task, but the vision of Uzi Gal was the one that was finally accepted. The Uzi began production in 1954 and has since become one of the most widely recognizable firearms ever developed. It was put into service by many countries and produced under license in Europe by Fabrique Nationale. It is still manufactured today.

Another extremely popular design surfaced in West Germany ten years later. As part of Project 54, a development for the West German Border Guard, Heckler & Koch scaled down their G3 automatic rifle to accept the military 9mm pistol cartridge. The result was accepted by the Bundeswehr in 1964 as the Maschinenpistole 5, or MP5. Probably one of the more significant differences between the MP5 and the vast majority of previous submachine gun designs is that it fires from a closed bolt. This tends to make single shots or the first round of a burst much more accurate because the bolt's mass does not shift and thus throw off aim fractions of a second prior to firing a shot. The MP5 is also modular in design so that it can be made to suit particular mission requirements easily.

Yet another submachine gun, apparently more popular with terrorists than anyone else, is the Czech vz61, popularly known as the "Skorpion". The Skorpion is not much larger than a pistol, though what it lacks in power (.32 ACP) it makes up for in its small size. The Skorpion has been used extensively by terrorists during a number of well-publicized acts from the late 1960s to the early 1980s.

Terrorism


Heckler & Koch MP5A3

Countless acts of terrorism occurred during the 1970s, reaching global scale when members of a militant Palestinian group called Black September took a number of Israeli athletes hostage during the Munich Olympics in 1972. Up to that time, no task force had been created to deal specifically with terrorist threats. Police forces were unequipped and unprepared for the eventuality. The rescue operation ended in disaster, with all hostages killed, five of eight terrorist dead and one policeman killed.

Immediately after the Munich incident, the West German federal police force created Grenzshutzgruppe-9 (GSG-9), a section of the Border Guard, that would be trained to deal specifically with terrorist threats. The British government delegated anti-terrorist activities to the Special Air Service (SAS), who had developed some experience dealing with hostage situations and terrorist actions in Northern Ireland. The two agencies cross-trained with each other, building a knowledge base unequaled anywhere else in the world.

One of the pieces of equipment to find commonality between these agencies was the MP5 submachine gun. It served both agencies extremely well through missions including the Lufthansa hijacking at Mogadishu, Somalia on 11 October 1977 and the Iranian Embassy at Prince's Gate, London on 5 May 1980. The SAS has been involved in training many of the world's anti-terrorist organizations, including the US Army 1st Special Forces Operational Detachment - Delta (Combat Applications Group) and US Navy SEAL Team Six (Development Group), all of which use the MP5 as their standard submachine gun. It would seem that wherever the SAS goes, the MP5 is not far behind.

If there is any fault with the MP5, it may be that manufacturing technology has outpaced its design and there are now less expensive ways to produce a very good submachine gun. For that reason, Heckler & Koch introduced the straight-blowback, polymer-framed UMP in the late 1990s. Designed expressly for the North American market, the UMP was initially chambered for the .45 ACP cartridge.

The Next Step

The proliferation of body armor around the world appears to be spelling an end for the conventional submachine gun. The pistol cartridges normally used in submachine guns generally lack the ability to penetrate most forms of body armor. To address this threat, major firearm manufacturers have begun producing a class of firearm, used in the submachine gun role, designed around a low-recoiling load that has the ability to penetrate body armor at ranges out to 200 meters.


Heckler & Koch MP7 PDW

These weapons, commonly referred to as *Personal Defense Weapons*, accomplish this by using what is essentially a scaled-down rifle cartridge with a bullet made at least partially out of a hardened material, such as steel. The bullet is very small and thus very light, requiring less energy to push it from the muzzle at a relatively high velocity (2300-2400 fps). A substantial increase in velocity generates a lot of kinetic energy for the small projectile, and the small size of the bullet focuses that energy onto a very small area. The steel construction of the bullet resists deformation as it contacts body armor. In this way the body armor is defeated.

However, there are no free lunches. While these ballistic properties tend to help penetrate body armor, reducing the mass of the bullet tends to reduce the potential size of a wound cavity as well, meaning that a single shot to center mass is generally less likely to damage enough tissue to stop an attacker quickly. However, delivering *some* injury through body armor is better than delivering none at all. Also, the very low recoil generated allows more efficient use of full automatic fire, so the concept is a viable solution from that point of view.

Many organizations that remain unimpressed by the performance of Personal Defense Weapons have opted instead to accept more conventional carbines, such as the Colt Commando, M4, HK G36C or similar abbreviated rifles in the submachine gun role. The 5.56x45mm NATO cartridge retains the ability to defeat most body armor while delivering a more destructive terminal effect than would otherwise be available. This comes at the cost of a weapon that is slightly larger and louder than a conventional submachine gun.

Submachine Gun Performance ^

Description (Ballistics)	Weight (lbs)	Barrel (in)	Cartridge	Capacity	ROF
Bergmann MP18/I	9.25	7.75	9mm Para	32	400
Thompson M1	10.62	10.5	.45 ACP	30	700
Erma MP40	8.75	9.75	9mm Para	32	500
USSR PPS-42	6.5	10.75	7.62x25mm	35	700
Sten Mk2	6.5	7.75	9mm Para	32	550
Uzi	8.15	10.23	9mm Para	32	600
Heckler & Koch MP5A2	5.62	8.86	9mm Para	30	800
Ceska Zbrojovka vz61 "Skorpion"	2.9	4.52	.32 ACP	15	600
Fabrique Nationale P90	5.9	10.35	5.7x28mm	50	900
Heckler & Koch MP7 PDW	3.3	7.09	4.6x30mm	20/40	950

Fabrique Nationale F2000

[F2000, modules removed] [F2000 with Grenade Launcher]

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

5.56x45mm NATO

Operation: Gas, Piston

Safety: Ambidextrous selector switch, 0-1-30

Sights: 1.6x Optical

Barrel: 15.75" (400mm)

Weight: 7.95 lbs. (3.6 kg)

Magazine Capacity: 30-rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 850 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
F2000	**5.56mm**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.6**	**6/9 days**	**1,690 ¥**
FS2000	**5.56mm**	**Assault Rifle**	**3**	**30 clip**	**SA**	**9M**	**3.6**	**3/4 days**	**1,750 ¥**
GL	**40mm LV**	**GL**	**-2**	**1 breech**	**SS**	**grenade**	**1**	**6/9 days**	**400 ¥**

- Laser Rangefinding Fire Control System module is also available (+950 ¥, uses top mount, replaces 1.6x optic). When used, apply -1 TN at long range, -2 TN at extreme range. Compatible with Smartlink 2 systems.
- IR/visible laser sight + ambient whitelight module available (+400 ¥, uses underbarrel mount).
- The FS2000 is a civilian-legal semi-automatic version. It includes an integral M1913 rail and iron sights in place of optics.

Modern armies are finding the 'new world disorder' to be a very demanding environment, having to switch rapidly from peacekeeping to war fighting missions. Rather than procure different weapons for different missions, armies aim to field multi-role weapons that can fulfil multiple tasks. With defence budgets around the world under intense pressure, multi-role weapons provide a cost effective solution. The design of FN Herstal's F2000 integrated weapon system is based on interchangeable modules and the ability to incorporate a variety of accessories. The concept of the F2000 allows accessories and modules to be added, while respecting the ergonomics, balance and smooth lines of the rifle. Space is provided inside the weapon for a centralised power pack.

The weapon can be comfortably and safely used left-handed without modification due to the forward ejection feature that removes risk from cases, gas or debris. The safety catch, firing selector and magazine catch are also easy to manipulate left-handed. This makes the F2000 the first truly ambidextrous bullpup weapon system. The weapon's bullpup design creates a very compact rifle, with a full length barrel. It is light (3.6 kg without the magazine) with an excellent centre of gravity positioned over the strong hand. The smooth outer shape makes the F2000 easy and comfortable to carry and the firing selector and magazine catch are easily accessed.

Military forces are required to be prepared for missions that extend beyond purely conventional warfare. Peacekeeping, peacemaking and humanitarian operations each require different capabilities. The F2000 design allows the standard rifle to be reconfigured to specific requirements. Its modules include a fire control system, standard sights, integrated laser range finder, light attachment, a 40mm grenade launcher and 'less lethal' weapon systems.

Standard NATO 5.56mm ammunition is fired and M16 type magazines can be used. Unlike traditional rifles, the shape of the pistol grip allows for firing with minimal movement of the hand. The rifle has been fitted with shock absorbent protection. A standard 1.6x optical sight aids in fast and accurate shooting. The sight is mounted on a Picatinny rail so that it can be rapidly replaced by a night sight. There is also an optional bayonet lug.

For a grenade to be effective it must be hit within a few metres of the target. In operational conditions this is very difficult. Grenades are heavy projectiles launched at low velocity, so they normally have a high, curved trajectory. To land close to the target, the grenade must be launched at the precise angle. Most current grenade launchers have a short line of sight and graduations every 50-100 metres. These sights make it difficult to aim accurately and firing at ranges between graduations is guess work. There is currently no system that allows aimed grenade launching at night. Few grenades land close to their target, and initial volleys are almost always well off target.

The F2000's fire control system provides a means of quickly and accurately aiming the grenade launcher that greatly increases its effect. It ensures a high probability of achieving an effective hit with a minimum number of grenades. A laser range finder first determines the range to the target and then a ballistic computer, programmed with three firing tables, automatically calculates the launch angle. LED indicators tell the user the aiming adjustments required and when the correct angle required to hit the target is reached. An infra-red laser pointer allows aiming and range finding at night.

Text courtesy of FNH USA

IMI Negev

[Negev and Negev Commando]

Israeli Military Industries
Ramat Ha Sharon, Israel

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Frame-mounted on left side, 0-1-FA selector

Sights: Adjustable aperture rear, protected post front

Barrel: 18.1" (460mm)

Weight: 16.75 lbs. (7.6 kg)

Magazine Capacity: 100 rounds, belted

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 650-950 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Negev	**5.56mm NATO**	**LMG**	**NA**	**200 belt***	**SA/FA**	**9M**	**7.6**	**6/14 days**	**2,500 ¥**
CMDO	**5.56mm NATO**	**Assault Rifle**	**NA***	**200 belt***	**SA/FA**	**8M**	**7**	**6/14 days**	**2,350 ¥**

- This weapon can be fired using belted ammunition (loose or from a 200 round box) or Galil magazines of any capacity.
- *Negev Commando (CMDO) has a folding buttstock that provides a Conceal Rating of 2 when folded.
- Standard Negev includes a bipod. Negev Commando includes a forward grip in place of the bipod.

This light machine gun (LMG) has every sign of being a world class weapon, in the IMI tradition. While being a NATO-standard 5.56mm weapon, the Negev has a distinct weight advantage over its rivals.

Fully tested by the Israel Defense Forces (IDF), which assisted IMI during weapon development, the Negev is already in service. IDF plans call for adoption of the Negev by the army, air force and navy, to be put in service on helicopters, patrol ships and armored vehicles, and to replace its NATO-standard MAG machine-gun with the Negev.

The Negev can use the standard "soft assault drum" (a soft nylon bag) which stores 200 rounds of belted 5.56mm ammunition (*adding approximately 6 lbs/2.7 kg to the weapon's weight). A 150 round soft assault drum is also available (4.5 lbs/2 kg). As a redundancy feature, the Negev is also equipped to use Galil detachable box magazines of any capacity. An adapter kit is available for use with NATO STANAG (M16-type) magazines.

A three-position gas regulator controls the rate of fire and includes an off position for rifle grenade-launching capabilities. The Negev fires from an open bolt.

The Negev Commando is a shortened variant of the Negev LMG. It includes a 13" (330mm) barrel and omits the bipod for a forward handgrip. Otherwise it shares all features of the larger Negev LMG. The Negev Commando can be used in the role of an assault rifle as well as a light machine gun.

Fabrique Nationale MAG (M240)

M240B [M240G]

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

7.62x51mm NATO

Operation: Gas, Regulated

Safety: Frame-mounted on left side, 0-200 selector

Sights: Adjustable leaf rear, protected post front

Barrel: 21.5" (546mm)

Weight: 27.0 lbs. (12.2 kg)

Magazine Capacity: 100 rounds, belted

Modes of fire: Safe, fully automatic

Cyclic Rate: 750-950 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M240B	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**12.2**	**6/14 days**	**6,600 ¥**
M240G	**7.62mm NATO**	**MMG**	**NA**	**100 Belt**	**FA**	**9S**	**11.6**	**6/14 days**	**6,300 ¥**

- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.
- Includes a bipod.

The M240 was adopted by the U.S. Military Armed Forces following a world-wide competition in search for a reliable 7.62mm NATO machine gun suitable for use as a coaxial weapon for armored vehicle applications. The Coaxial version of the famous Belgian MAG 58 (*Mitrailleuse d'Appui Generale*; General Machine Gun of Support), produced by FN Herstal, won this competition. The M240 was subsequently produced by its U.S. subsidiary, FN Manufacturing, Inc. Columbia, SC.

The M240G Machine Gun is the ground version of the original M240/M240E1, 7.62mm medium class weapon designed as a coaxial/pintle mounted machine gun for tanks and light armored vehicles. The rate of fire may be controlled by three different regulator settings. The M240G is modified for ground use by the installation of an "infantry modification kit," comprised of a flash suppressor, front sight, carrying handle for the barrel, a buttstock, infantry length pistol grip, bipod, and rear sight assembly.

The M240G 7.62mm machine gun is a left hand feed, gas operated, air cooled, fixed head space weapon. The ground configuration involves the installation of an Egress Package which is designed to provide downed aircrew personnel with increased fire power. The Egress Package contains a buttstock assembly, a buffer assembly, a bipod assembly, and a conventional trigger assembly. The barrel assembly contains a three position gas regulator. The first position allows the weapon to cycle at approx. 750 RPM. The two remaining ports increase the RPM by 100 each (I.E., gas port position 2 = 850 RPM; gas port position 3 = 950 RPM).

While possessing many of the same basic characteristics as the M60 series medium class machine guns, the durability of the M240 system results in superior reliability and maintainability when compared to the M60.

- Can be pintle mounted
- Available in coaxial configuration for armored vehicles
- Proven long life of all major parts
- Accuracy allows safe overhead fire
- Effective against dismounted troops in the open, and behind light protective structures, up to 1,500 m, and for area fire up to 2,000 m.
- Belt fed, fires from an open breech and has a Quick Change Barrel

More information on the MAG 58 can be found at Remtek.

Fabrique Nationale Minimi (M249 SAW)

[Para] [SPW] [MK46 MOD 0]

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Two position crossbolt

Sights: Adjustable aperture rear, hooded post front

Barrel: 18.3" (465mm)

Weight: 16.75 lbs. (7.6 kg)

Magazine Capacity:
200 rounds, belted, box fed

Modes of fire: Safe, fully automatic

Cyclic Rate: 725-1000 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SAW	**5.56mm NATO**	**LMG**	**NA**	**200 Belt***	**FA**	**9M**	**7.6**	**6/14 days**	**4,100 ¥**
PARA	**5.56mm NATO**	**LMG**	**NA***	**200 Belt***	**FA**	**9M**	**7.1**	**6/14 days**	**3,900 ¥**
SPW	**5.56mm NATO**	**LMG**	**NA***	**200 Belt***	**FA**	**9M**	**5.7**	**8/21 days**	**4,250 ¥**
MK46	**5.56mm NATO**	**LMG**	**NA**	**200 Belt***	**FA**	**9M**	**5.7**	**8/21 days**	**4,750 ¥**

- This weapon can be fired using belted ammunition (loose or from a 200 round box) or M16 magazines of any capacity.
- Loaded 200 round box magazine adds 6.17 pounds (2.8 kg) to weapon weight.
- With stock retracted and ammunition box removed, the Para model has a Conceal Rating of 2.
- A minimum of 4 Complex Actions are required to remove (2 Complex Actions) and replace (2 Complex Actions) the barrel.
- Includes a bipod.

The Squad Automatic Weapon (SAW), or 5.56mm M249 is an individually portable, gas operated, magazine or disintegrating metallic link-belt fed, light machine gun with fixed headspace and quick change barrel feature. The M249 engages point targets out to 800 meters, firing the improved NATO standard 5.56mm cartridge. The SAW forms the basis of firepower for the fire team. The gunner has the option of using 30-round M16 magazines or linked ammunition from pre-loaded 200-round plastic magazines. The gunner's basic load is 600 rounds of linked ammunition. Each 200 round magazine weighs approximately 6.17 pounds (2.8 kg).

The SAW was developed through an initially US Army-led research and development effort and eventually a Joint NDO program in the late 1970s/early 1980s to restore sustained and accurate automatic weapons fire to the fire team and squad. When actually fielded in the mid-1980s, the SAW was issued as a one-for-one replacement for the designated "automatic rifle" (M16A1) in the Fire Team. In this regard, the SAW filled the void created by the retirement of the Browning Automatic Rifle (BAR) during the 1950s because interim automatic weapons (e.g. M-14E2/M16A1) had failed as viable "base of fire" weapons.

PARA Model

> This is a more compact version of the M249 designed specifically for airborne operators. A shorter 16" (406mm) barrel and collapsible buttstock make the PARA 10" shorter than the standard model. The PARA includes all of the standard features of the M249, and can be field-converted to the standard model in just 30 seconds.

SPW Model

> The SPW is a special model of M249 developed to meet U.S. Special Operations requirement for a lightweight variant of the M249 that would retain the intrinsic functionality and reliability of the standard model. Unique to the M249 SPW are the special rails to accomodate scopes, laser designators and flashlights, a pistol grip and a detachable bipod.
>
> Features include a 16" (406mm) quick change barrel with a fixed headspace, retractable stock, quick-detach bipod, integral sight rail for optical sight, interoperable with M249 and MINIMI components, multi rail forearm for use with additional accessories, high reliability, and the availability to use SOPMOD M-4 accessory kit.

MK46 MOD 0

> The MK46 MOD 0 is the newest version of the M249 developed to meet U.S. Special Operations Forces requirements for a lightweight variant that would retain the intrinsic functionality and reliability of the standard model. A weight reduction was achieved by designing a new lightweight barrel (available in standard and fluted), removing the carrying handle, magazine well and vehicle mounting lugs (for vehicle applications). Unique to the MK46 MOD 0 is Picatinny Rails system that accomodate scopes, laser designators and flashlights. It also has a detachable bipod.

More information on the Minimi can be found at Remtek.

Colt M203 Grenade Launcher

[M4/M203 in action]

Colt Manufacturing Corp.
Hartford, CT UCAS

40x46mm Grenade, LV

Operation: Manual; Breech

Safety: two position sliding, mounted inside trigger guard

Sights: 2; folding leaf rear, detachable quadrant, uses rifle's front sight

Barrel: 12" (305mm)

Weight: 3.0 lbs. (1.4 kg)

Ammunition Capacity:
1 round, breech loaded

Modes of fire: Safe, fire

Muzzle Velocity: 250 fps

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M79	**40x46mm LV**	GL	**-2**	**1 breech**	**SS**	**per grenade**	**3**	**6/5 days**	**605 ¥**

The M203 40mm Grenade Launcher is used while attached to an M16/M23 series 5.56mm rifles. It is a lightweight, compact, breech loading, single shot launcher. The launcher consists of a hand guard and sight assembly with an adjustable metallic folding, short-range blade sight assembly, and an aluminum receiver assembly which houses the barrel latch, barrel stop and firing mechanism. The launcher is capable of firing a variety of low velocity 40mm ammunition.

The launcher also has a quadrant sight which may be attached to the M16/M23 carrying handle and is used when precision is required out to the maximum effective range of the weapon.

More information on the M203 can be found here.

Beretta Model 21 "Bobcat"

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

.22 Long Rifle, .25 ACP

Operation: Blowback

Action: Double/Single

Safety: Frame-mounted on left side

Sights: Notch rear, blade front

Barrel: 2.4" (61mm)

Weight: 0.740 lbs (335 g)

Magazine Capacity:
7-8 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
21	.22 LR	Light Pistol	9	7 clip	SA	5L	0.335	2/24 hrs	250 ¥
21	.25 ACP	Light Pistol	9	8 clip	SA	4L	0.325	2/24 hrs	250 ¥

- +30¥ with blued finish.
- +50¥ for stainless steel (inox) version.
- +500 +500¥ for EL version engraved and with gold inlaid slide, smooth walnut grips, gold-plated hammer, trigger, barrel lock, and grip screws.

Quality pocket pistols.
The same dedication to advanced design, uncompromising quality and strict quality control that make the 92F, Cougar and Cheetah such international standouts is found in all Beretta small caliber, pocket-size pistols. Simplicity, safety and practical use are their best qualities.

Practical and Simple.
User-friendly design is common to all Beretta small frames. The exclusive tip-up barrel allows the user to easily load a round directly into the chamber. It also assists in the safe clearing of the pistol by allowing a live round to be easily removed from the chamber and the bore quickly checked. Jamming and stovepiping problems are virtually eliminated by the open slide design shared by all small frame Berettas.

Advanced Materials.
Keeping an eye on quality helps keep Beretta small caliber semi-automatics out front. Beretta pistols in the 21 Series utilize the toughest of forgings for their barrels, while slides are fashioned from solid steel bar stock. Frames are machined from solid aluminum forgings. The new Inox versions utilize the finest materials, difficult to machine but exceptionally corrosion resistant and durable.

21 Bobcat
Trustworthy and Precise. Chambered for .22LR or .25ACP. This compact, rugged small frame measures just 4.9 inches (125 mm) overall and weighs only 11.5 ounces (325 grams). It features a lightweight, alloy frame, blued steel slide, tip-up barrel, and double/single action. The Bobcat comes with a 7-round magazine for .22LR ammunition, or an 8 round magazine for .25 caliber cartridges and is available in a variety of special models: Matte, Blued, Nickel and EL versions, featuring walnut grips, fine gold inlay on the slide and other gold accents.

21 Bobcat Inox
This new model has a stainless steel slide and barrel. The alloy frame is gray anodized to match the color and finish of the stainless components. The other metal parts (trigger, hammer, trigger guard, safety, magazine, etc.) are black finished.

Beretta Model 3032 "Tomcat"

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

.22 Long Rifle, .32 ACP

Operation: Blowback

Action: Double/Single

Safety: Frame-mounted on left side

Sights: Fixed 3-Dot

Barrel: 2.4" (61mm)

Weight: 0.9 lbs (410 g)

Magazine Capacity:
7 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
3032	**.32 ACP**	**Light Pistol**	**9**	**7 clip**	**SA**	**6L**	**0.41**	**2/24 hrs**	**340 ¥**
3032 Ti	**.32 ACP**	**Light Pistol**	**9**	**7 clip**	**SA**	**6L**	**0.48**	**2/24 hrs**	**580 ¥**
3022	**.22 LR**	**Light Pistol**	**9**	**7 clip**	**SA**	**5L**	**0.41**	**5/30 days**	**340 ¥**

- +30¥ with blued finish.
- +80¥ for stainless steel (inox) version.

Beretta's line-up of small pocket pistols is led by the .32 caliber Tomcat, a semi-auto that delivers a potent punch from a small, lightweight package. The exclusive tip-up barrel allows the user to easily load a round directly into the chamber, assisting users that have difficulty racking a slide conventionally as well as assisting in the safe clearing of the pistol by allowing a live round to be easily removed from the chamber and the bore quickly checked. Jamming and stovepiping problems are virtually eliminated by the open slide design shared by all small frame Berettas. Only the toughest of forgings are utilized for barrels, while slides are fashioned from solid steel bar stock. Frames are machined from solid aluminum forgings.

3032 Tomcat
The standard model with a lightweight aluminum frame and available in blued or inox finish. Accuracy and reliability are well above the standard for subcompact pistols.

3032 Tomcat Titanium (Ti)
The 3032 Tomcat Titanium pistol marks Beretta's first use of titanium frames in a standard production model. Some say it appeared in response to a few reports of the small, light, aluminum frame cracking under the stress of .32 ACP in a blowback action. The titanium model is of course much stronger and corrosion resistant than the standard model with only a modest increase in weight.

3022 Tomcat
The 3022 Tomcat is the .22LR version which did not become a standard product in the line. It is featured only in the 1996 Beretta catalog the year the Tomcat series was introduced.

Information provided by otomik.

Beretta Model 950 "Jetfire"

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

.25 ACP

Operation: Blowback

Action: Single Action

Safety: Frame-mounted on left side

Sights: Notch rear, blade front

Barrel: 2.36" (60mm)

Weight: 0.74 lbs (335 g)

Magazine Capacity:
7 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
950 Jetfire	**.25 ACP**	**Light Pistol**	**9**	**8 clip**	**SA**	**4L**	**0.28**	**2/24 hrs**	**230 ¥**
950 Minx	**.22 Short**	**Light Pistol**	**9**	**7 clip**	**SA**	**5L**	**0.28**	**2/24 hrs**	**230 ¥**

+40¥ for stainless steel (inox) version.

Quality pocket pistols.
The same dedication to advanced design, uncompromising quality and strict quality control that make the 92F, Cougar and Cheetah such international standouts is found in all Beretta small caliber, pocket-size pistols. Simplicity, safety and practical use are their best qualities.

Practical and Simple.
User-friendly design is common to all Beretta small frames. The exclusive tip-up barrel allows the user to easily load a round directly into the chamber. It also assists in the safe clearing of the pistol by allowing a live round to be easily removed from the chamber and the bore quickly checked. Jamming and stovepiping problems are virtually eliminated by the open slide design shared by all small frame Berettas.

Advanced Materials.
Keeping an eye on quality helps keep Beretta small caliber semi-automatics out front. Beretta pistols in the 950 Series utilize the toughest of forgings for their barrels, while slides are fashioned from solid steel bar stock. Frames are machined from solid aluminum forgings. The new Inox versions utilize the finest materials, difficult to machine but exceptionally corrosion resistant and durable.

950 Jetfire
It is an economical, single-action, semi-automatic with straight blow-back design. The Jetfire features a tip-up barrel, light alloy frame, V notch rear sight with a blade front sight. Chambered for .25 ACP ammunition, the Jetfire is available in a Matte black finish.

950 Jetfire Inox
This new model has a stainless steel slide and barrel. Same finish as the Bobcat Inox model.

Information provided by otomik.

Heckler & Koch P9S

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .45 ACP

Operation: Delayed Blowback

Action: Double/Single

Safety: Slide-mounted ambidextrous

Sights: Fixed 3-Dot

Barrel: 4.0" (102mm)

Weight: 1.94 lbs. (880 g)

Magazine Capacity:
7-9 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P9S	**9mm Para**	**Medium Pistol**	**6**	**9 clip**	**SA**	**7M**	**0.88**	**4/72 hours**	**1,200 ¥**
P9S	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**0.88**	**6/7 days**	**1,500 ¥**

Heckler & Koch's P9S was developed in the late 1960s and was manufactured in Oberndorf, West Germany from 1969 to 1978. It was one of the first pistols to be manufactured using polymer as integral parts of its frame, fourteen years before the Glock pistol made waves.

The P9S (Spannabzug) differs from the original P9 by including a unique double action trigger mechanism. The trigger mechanism may be cocked and fired using the double action trigger stroke, after which all successive rounds are fired from the single action mode. Alternately, the hammer can be cocked prior to firing through use of a cocking lever located on the left side of the frame, behind the trigger guard. From the single action mode, the trigger requires less pressure to fire, enhancing accuracy. The hammer may also be de-cocked by depressing the cocking lever, then pulling the trigger through and easing the cocking lever down with the thumb.

The P9S is an internal hammer-fired pistol incorporating HK's roller-locking delayed blowback form of operation, which is also found on the G3 rifle and MP5 submachine gun. It is the only pistol ever designed to use this type of operation. The roller locking system consists of a pair of rollers on either side of the bolt, and a reciprocating wedge designed to fit between the rollers. When the breech is closed, the wedge is moved forward to spread the rollers apart and into formed anchor channels on the inside of a barrel extension. After firing, the locked rollers prevent the breech from immediately opening. The impulse first forces the wedges rearward, allowing the spring-loaded rollers to return to a central position and clear the anchor channels. Once the rollers are clear, the bolt assembly is free to open the breech with a safe chamber pressure. In this way, the bolt is not positively locked; its motion is merely slowed by the rollers.

One of the advantages of this type of operation in a handgun lies in the fact that the barrel does not move when a shot is fired, unlike most semi-automatic pistols, which rely on Browning's "tipping barrel" short recoil form of operation in one way or another. This means that the additional mass of a suppressor attached to the end of the barrel does not affect the reliability of automatic ammunition cycling adversely. For this reason, the P9S, particularly the .45 ACP version, has become a much sought after item.

Walther PPK

Carl Walther Waffenfabrik Ulm/Donau, Germany	
Various Chamberings	
Operation: Blowback	
Action: Double/Single	
Safety: Slide-mounted on left side w/decocker	
Sights: Front blade, fixed rear	
Barrel: 3.2" (81mm)	
Weight: 1.31 lbs (595 g)	
Magazine Capacity: 6-10 rounds, single stack	
Modes of fire: safe, semi-automatic	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
PPK	.380 ACP	Holdout	8	6 clip	SA	5M	0.59	2/24 hrs	550 ¥
PPK	.32 ACP	Holdout	8	7 clip	SA	6L	0.59	2/24 hrs	550 ¥
PPK	.22 LR	Holdout	8	8 clip	SA	5L	0.59	3/7 days	500 ¥
PPK	.25 ACP	Holdout	8	9 clip	SA	5L	0.59	4/30 days	500 ¥
PPK/s	.380 ACP	Holdout	8	7 clip	SA	5M	0.65	2/24 hrs	550 ¥
PPK/s	.32 ACP	Holdout	8	8 clip	SA	6L	0.65	3/7 days	550 ¥
PPK/s	.22 LR	Holdout	8	10 clip	SA	5L	0.65	3/7 days	550 ¥
PP	.32 ACP	Light Pistol	7	8 clip	SA	6L	0.71	3/7 days	620 ¥

In 1929 Walter introduced the Polizei Pistole or PP, the first double action pistol. In 1931 Walther introduced a pocket version. The gun differed from the PP in that the barrel and frame had been each been shortened. The internal mechanism was the same, however the parts that were affected by size were of course different. The back strap had been eliminated. They utilized a wrap-around plastic grip to give the frame a corrected contour. The firm then came up with the model designation PPK or "Polizei Pistole Kriminal". The name symbolized that it was to be used for covert undercover police work.

The PPK was highly praised because of its compactness and reliability as well as the unique signal pin indicating that the gun was either loaded or unloaded. It protrudes from the rear of the slide when the chamber is loaded. If the chamber is empty it stays inside the rear slide. This loaded chamber indicator does not exist on the rimfire models, only the centerfire guns.

The PPK was readily suited for undercover and intelligence work. It was a favorite weapon of the Nazi SS and Hitler owned a highly decorated .25 ACP presentation model as well as a more utilitarian looking .32 ACP model which he used to shoot himself in the head during the last days in a bunker underneath the streets of Berlin. It was compact, reliable and of reasonable stopping power. Many of the post-war intelligence agencies standardized on the PPK. In addition to MI5 and MI6, the PPK has been used by German BND, Frances' SDECE, Israel's Mossad and Switzerland's Intelligence and Security Service. The Chinese intelligence service actually issued a PPK clone and Soviet KGB frequently issued improved copies, the Makarov and PSM.

After the World War II, both the PP and PPK were manufactured outside of Germany by the French firm Manurhin under the license from Walther. Only some design documents, which had been barely salvaged, served as start-up capital. As a result of the lack of production capacity and the prohibition of manufacturing, the decision was made to grant licenses for the production of various products. Walther was not able to begin manufacturing again until 1957. After the 1968 Gun Control Act went into effect in America and the PPK was barred from import at the same time in which it was incredibly popular as "James Bond's gun", diplomatic pouches from Germany often bulged with brownish-red Walther PPK boxes. The GCA prohibited the importation due to the size of the gun.

The Walther firm, not wanting to lose US sales of the PPK, developed the PPK/s. By combining the frame of the PP, which was slightly longer than the PPK, and the slide of the PPK, the PPK/s was born. The PPK/s met all of the requirements for a handgun to be imported into the United States. The PPK/s was first manufactured in the United States in 1978 by Ranger Manufacturing in Gadsen, Alabama. Later models of the PPK and the PPK/s are manufactured chambered for the more common and slightly more potent .380 ACP (aka 9mm Short) cartridge.

The PP served german police for many years until the terrorist attack at the Munich Olympic Games. The government then took a new emphasis on improving police equipment, but many PPs and PPKs could be seen in use by security guards in later years.

Walther firearms are now manufactured and marketed in North America by Smith & Wesson.

Information provided by otomik.

Izhmekh Makarov

OSJC Izhmekh Izhevsk, Russia	
9mm Makarov, .380 ACP	
Operation: Blowback	
Action: Double Action	
Safety: Slide mounted on left side w/decocker	
Sights: blade front, fixed or adjustable dot rear	
Barrel: 3.66" (93mm)	
Weight: 1.6 lbs (730 g)	
Magazine Capacity: 7 rounds, single stack	
Modes of fire: safe, semi-automatic	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
PM	**9mm Makarov**	**Light Pistol**	**7**	**8 clip**	**SA**	**5M**	**0.73**	**2/24 hrs**	**150 ¥**
PMM	**9mm Mak HI**	**Light Pistol**	**7**	**12 clip**	**SA**	**6M**	**0.76**	**2/24 hrs**	**300 ¥**
IZH-71H	**.380 ACP**	**Light Pistol**	**7**	**12 clip**	**SA**	**5M**	**0.76**	**2/24 hrs**	**250 ¥**
Baikal-442	**9mm Para**	**Light Pistol**	**7**	**12 clip**	**SA**	**6M**	**0.78**	**2/24 hrs**	**300 ¥**

Shortly after the WW2, the Soviet Defense Committee declared an open contest to develop a handgun that "would concentrate the best constructional and operational features of all the handguns of the world that were used in the war". The new pistol would supplement and eventually replace the older TT (Tokarev) pistol.

A number of Soviet designers accepted the challenge and joined the contest: Tokarev, Simonov, Korovin, Vojevodin, Rakov and finally, Makarov. Nikolay Makarov made his model in two calibers: 7.65mm Browning (.32 ACP) and a new 9mm cartridge. His pistol had evident superiority over competitors: more compact, handy, easy to service, easy to aim. Both versions showed acceptable results. The Army ruled in favor of the 9mm variant due to its greater stopping effect - an essential factor in close combat.

In 1951 the Makarov PM pistol was accepted for service by both Army and Interior Forces. In the period of more than 40 years, IZHMEKH produced millions of PM pistols. A large proportion of them were exported. One may be surprised at learning that the Soviets preserved this model in the Army and Internal Forces (Police) for more than four decades without any modifications!

Without a doubt, the 1950s to the 1980s represented a period of stagnation in the Russian handgun industry. By the 1980s and especially in the 1990s, the market was saturated with Makarov pistols. On the other hand, PM could not compete against modern and more sophisticated models offered by various manufacturers inside Russia and abroad. This made IZHMEKH's designers work on modernization of the well fielded and well-proven arm.

PM

> The classic design, most of these sold commercially formerly armed the world's communist nations. Commercially sold in Russia as the Baikal IJ-70, all Soviet allies copied the design to manufacture domestically as well, such as China's Norinco Type 59, East Germany's GWB PiM, Hungary's FEG PA-63.

PMM

> At the beginning of the 1990's a group of engineers modified the existing "pistol + ammunition" complex by using a larger load for the standards 9x18 mm Makarov cartridge case. Leaving the exterior dimensions of the case intact, its muzzle energy was increased by 1.7 times, while generated gas pressure became 1,500 bars (21,755 psi), an increase of 1.25 times. The new cartridge is called 9mm Makarov High Impulse and features a standard armor piercing bullet as well. The modified Makarov pistol features the magazine of enlarged capacity of 12 rounds instead of previous 8 rounds. The magazine is a double-column, one-position feed design and is still able to use the older 8 round single column magazines without any modification. The handgrip is of a new improved and more ergonomical shape. The chamber now has threaded grooves inside to reduce speed of recoil of the slide (retarded blowback operation) and ensures reliable operations of the system, using both standard and modernized cartridges.

IZH-71H and Baikal-442

> Though the PMM failed as a contender to replace the PM in the Russian military to the MR-443 "Grach" (Rook), the improved variation has had some success commerially when chambered in 9mm or .380 ACP.

Information provided by otomik.

Izhmekh PSM

OSJC Izhmekh
Izhevsk, Russia

5.45x18mm Soviet, .25 ACP

Operation: Blowback

Action: Double Action

Safety: Slide mounted on left side w/decocker

Sights: blade front, fixed or adjustable rear

Barrel: 3.35" (85mm)

Weight: 1.01 lbs (460 g)

Magazine Capacity:
8 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
PSM	**5.45x18mm**	**Holdout**	**9**	**8 clip**	**SA**	**6L***	**0.46**	**2/24 hrs**	**400 ¥**
Baikal-441	**.25 ACP**	**Holdout**	**9**	**8 clip**	**SA**	**5L**	**0.46**	**2/24 hrs**	**400 ¥**

The 5.45x18mm cartridge uses a light armor penetrating bullet. -1 Armor Rating.

"PSM" is an acronym for "pistolet samosarjadnij malogabaritnij", which means "self-loading pistol of small dimensions". The PSM was designed by a team of engineers consisting of Tikhon Lashnev (1919-1988), Anatoliy Simarin (1936-1991) and Lev Koulikov (1931-) in the late 1960s. Light-weight and compact (only 21mm (.826") thick at the safety lever), featuring outstanding performance, the pistol is a reliable personal weapon in close combat.

Chambered for it's own proprietary 5.45x18mm cartridge, the design team showed masterful skill in cartridge design as well by recognizing that the weak stopping power of most pocket pistol cartridges is due to poor penetration. The 5.45x18mm PSM, using it's own specially designed armor piercing bullet, is capable of regularly penetrating 55 layers of kevlar or NIJ level II body armor.

The PSM is employed by the MVD (Ministry of Interior) operatives and Army high command. The version with adjustable rear sight in the same caliber is designated as IZh-75 or Baikal IJ-75. The same pistol is also available in the more common (and often more legal) yet anemic .25 ACP chambering as the Baikal-441.

Information provided by otomik.

Kel-Tec P-11

Kel-Tec CNC Industries, Inc.
Cocoa, FL CAS

Various Chamberings

Operation: Short Recoil

Action: Double Action Only

Safety: No external safety

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: 3.1" (78mm)

Weight: 0.88 lbs. (400 g)

Magazine Capacity:
10 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P11	**9mm Para**	**Light Pistol**	**8**	**10 clip**	**SA**	**6M**	**0.4**	**2/24 hrs**	**315 ¥**
P40	**.40 S&W**	**Light Pistol**	**8**	**9 clip**	**SA**	**8M**	**0.4**	**4/48 hrs**	**350 ¥**
P357	**.357 SIG**	**Light Pistol**	**8**	**9 clip**	**SA**	**8M**	**0.4**	**4/48 hrs**	**350 ¥**

- The P11/40/357 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.
- Available with parkerized (+40¥) or hard chrome (+55¥) finish on slide.
- S&W M59 12 round magazine, 35¥, 4/48 hrs.
- S&W M59 14 round magazine, 55¥, 4/48 hrs, -1 Conceal.

The P-11 is a semi-automatic, locked breech pistol, chambered for the 9mm Luger cartridge. The firing mechanism is double action only. The magazine has a 10 round capacity. The Kel-Tec P-11 is the smallest and lightest 9mm ever made. Thanks to its locking dynamics and superior ergonometry, perceived recoil and practical accuracy are comparable to much larger guns. The P-11 is especially suited for plainclothes police officers or as a secondary weapon for military personnel. From the very beginning of the design and development, computers have been used exclusively. All machined components are also made on modern high speed computerized equipment. Equally advanced quality control equipment and test procedures ensure a firearm with uncompromising quality in materials and workmanship.

The P-11 has six main component groups: barrel, slide, frame, firing mechanism, grip, and magazine. The barrel is made of SAE 4140 Ordnance steel heat treated to 47 HRC. The slide is also 4140 steel, and contains the firing pin and the extractor. The rectangular frame is machined from solid 7075-T6 aluminum and houses the firing mechanism.

The trigger connects via a transfer bar to the hammer. The hammer is driven by a novel free floating extension spring. The light weight firing pin transmits the energy of the hammer to ignite the primer. The functioning of the mechanism surpasses all applicable SAAMI safety standards.

The grip is made of the ultra-high impact polymer DuPont ST-8018. The grip also forms the magazine well and the trigger guard, and is available in black, gray, or OD green.

Normally supplied with a 10-round double column all steel magazine, the P-11 will also accept standard S&W large capacity clips (59 series, 12/14 rounds). The P40 and P357, while strong enough to handle the higher pressure cartridge, are very light so as to pass more recoil onto the user. Many users have found it to uncomfortable to practice with regularly and thus it has been discontinued as of 2002.

Kel-Tec P-32

Kel-Tec CNC Industries, Inc. Cocoa, FL CAS

.32 ACP

Operation: Short Recoil

Action: Double Action Only

Safety: No external safety

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: 2.86" (73mm)

Weight: 0.41 lbs. (186 g)

Magazine Capacity:
7 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P32	.32 ACP	Holdout	9	7 clip	SA	6L	0.2	2/24 hrs	300 ¥

The P11/40/357 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

Available with parkerized (+40¥) or hard chrome (+55¥) finish on slide.

The P-32 is a semi-automatic, locked breech pistol, chambered for the .32 Auto cartridge. The firing mechanism is double action only. The magazine has a 7 round capacity. The KEL-TEC P-32 is the lightest .32 Auto pistol ever made. Thanks to its locking dynamics and superior ergonometry, perceived recoil and practical accuracy are comparable to much larger guns.

The P-32 is mainly intended for plainclothes police officers as a secondary weapon, or for concealed carry by licensed citizens. It is popular as an "everywhere, all the time" pistol due to it's lightness and compactness. The small grip size and light trigger pull make the P-32 ideal for female shooters.

From the very beginning of the design and development, computers have been used extensively. All machined components are also made on modern high speed computerized equipment. Equally advanced quality control equipment and test procedures ensure a firearm with uncompromising quality in materials and workmanship.

The P-32 has six main component groups: barrel, slide, firing mechanism, grip, and magazine. The barrel is made of SAE 4140 ordnance steel, heat treated to 48 HRC. The slide is also 4140 steel, and contains the firing pin and the extractor. The rectangular frame is machined from solid 7075-T6 aluminum and houses the firing mechanism.

The trigger connects via a transfer bar to the hammer. The hammer is driven by a novel free floating extension spring. The light weight firing pin transmits the energy of the hammer to ignite the primer. After firing, the hammer block holds the hammer away from the firing pin, providing a mechanical safety. The functioning of the mechanism greatly surpasses all applicable SAAMI safety standards.

The grip is made of the ultra high impact polymer Dupont ST-8018. The grip also forms the magazine well and the trigger guard.

The P-32 is normally supplied with a 7 round single column steel magazine.

Kel-Tec SUB-2000

Kel-Tec CNC Industries, Inc.
Cocoa, FL CAS

9mm Para, .357 SIG, .40 S&W

Operation: Blowback

Action: Double Action Only

Safety: No external safety

Sights: Fixed aperture rear, hooded post front

Barrel: 16.1" (408mm)

Weight: 4 lbs. (1.8 kg)

Magazine Capacity:
10 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SUB-2000	**9mm**	**Light Carbine**	**2**	**10 clip**	**SA**	**7M**	**1.8**	**2/24 hrs**	**385 ¥**
SUB-2000	**.40 Auto**	**Light Carbine**	**2**	**10 clip**	**SA**	**8M**	**1.8**	**2/24 hrs**	**385 ¥**
SUB-2000	**.357 SIG**	**Light Carbine**	**2**	**10 clip**	**SA**	**9M**	**1.8**	**3/36 hrs**	**400 ¥**

- +2 Conceal when folded.

- The SUB-2000 can use standard Glock magazines (9mm, 17 rounds; .40 S&W/.357 SIG, 15 rounds) at no loss to Conceal. Other models designed to accept Beretta magazines (9mm, 15 rounds; .40S&W, 11 rounds) or Smith & Wesson magazines (9mm, 12-14 rounds) are available.

The SUB-2000 is a self-loading carbine for pistol cartridges. Different versions of the SUB-2000 will accept most modern handgun magazines including those made by Glock, Beretta and Smith & Wesson. Further, the SUB-2000 has a greatly extended range compared to a handgun.

The superior precision is also very useful against small or partially covered targets at shorter range. The amount of training to master the SUB-2000 is only a fraction of that required for a handgun.

The SUB RIFLE-2000 has been developed from our highly successful SUB 9 rifle. Although retaining some features of the old rifle, the SUB-2000 is a completely new design. Emphasis has been put on consumer safety, but without impeding the performance. Polymers are used to a large extent, resulting in increased durability and reduced price. Initially the SUB-2000 will be available in 9mm Luger, soon followed by 40 S&W.

The bolt can be locked in the rear position by the operating handle. The main safety is of protected push bolt type disconnecting the trigger bar and interlocking the hammer and sear. By rotating the barrel upwards and back, the SUB 2000 can be reduced to a size of 16" x 7" to facilitate secure storage and utilize the internal deployment lock which is operated by a proprietary key. The rear sight is of aperture type and the fluorescent front sight can be adjusted for windage and elevation. The SUB-2000 can easily be disassembled without tools for cleaning or inspection.

The SUB-2000 has six main component groups: barrel, bolt, frame, firing mechanism, stock, and magazine. The barrel is made of SAE 4130 Ordnance steel and attaches permanently to the front sight and hinge assembly. A forend is attached to the barrel by Phillips head screws.

The bolt head is case hardened steel, and contains the firing pin and the extractor. The bolt extends backwards and houses the recoil spring assembly and operating handle.

The frame is injection molded in two halves, the left side holding the ejector and serial number. The frame houses the firing mechanism, forms the grip and encloses the barrel hinge and stock tube. The trigger connects via a transfer bar to the sear. The hammer is driven by double torsion spring. A recessed push bolt safety disconnects the trigger bar and locks the sear into the hammer. The functioning of the mechanism surpasses all applicable SAAMI safety standards.

The butt stock and tube also form the housing for the reciprocating bolt assembly. The SUB-2000 is normally supplied with one 10 round magazine according to the version.

Beretta 92 Series Elite

92 Elite [92 Elite II]

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

9x19mm, .40 S&W

Operation: Short Recoil

Action: Double/Single

Safety: Ambidextrous w/ decocker, slide-mounted

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 4.7" (120mm)

Weight: 2.08 lbs. (945 g)

Magazine Capacity:
11-15 rounds, double stacked

Modes of fire:
Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
92G Elite	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.95**	**4/7 days**	**775 ¥**
96G Elite	**.40 S&W**	**Medium Pistol**	**6**	**11 clip**	**SA**	**8M**	**0.95**	**4/7 days**	**775 ¥**
92G E2	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.95**	**4/7 days**	**875 ¥**
96G E2	**.40 S&W**	**Medium Pistol**	**6**	**11 clip**	**SA**	**8M**	**0.95**	**4/7 days**	**875 ¥**

Available in G configuration only.

The Elite pistols were developed to meet the specific requirements of action shooting, personal defense, and law enforcement agencies. Elite pistols feature the recountoured slide and removable front sight of the Brigadier. The barrel is stainless steel and slightly shorter (4.7") for compactness. The beveled magazine well facilitates rapid reloading while the rubber magazine base protects the magazine if it is dropped. Front and rear slide serrations provide a sure grip for fast, easy cycling of the slide, and the skeletonized hammer reduces lock time.

Beretta Elite models are available only in the "Gendarmerie" configuration. The G models differ from FS models in that the decocking lever does not function as a traditional safety. When the lever is released, after having been activated to lower the hammer, spring pressure automatically returns it to the ready-to-fire position.

The Elite II has a stainless steel slide and barrel, front and backstrap checkering and low profile Novak sights.

Some information provided by otomik.

Beretta 92 Series Vertec

Fabbrica d'Armi Pietro Beretta Gardone, Val Trompia, Italy

9x19mm, .40 S&W

Operation: Short Recoil

Action: Double/Single

Safety: Ambidextrous w/ decocker, slide-mounted

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 4.7" (120mm)

Weight: 2.0 lbs. (907 g)

Magazine Capacity: 11-15 rounds, double stacked

Modes of fire: Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
92FS Vertec	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.90**	**2/24 days**	**715 ¥**
96FS Vertec	**.40 S&W**	**Medium Pistol**	**6**	**11 clip**	**SA**	**8M**	**0.90**	**2/24 days**	**715 ¥**

- +50¥ for matte stainless (Inox) finish.

Take the world's most tested and trusted pistol, the Beretta 92/96 series. Add new capabilities in response to the demanding needs of our law enforcement and military customers without compromising the quality, reliability, and safety for which the Beretta pistol is already famous. The result is the revolutionary new Beretta Vertec.

The new vertical grip design, combined with a special short reach trigger and thin, innovative dual-textured grip panels, guarantee a sure grip and maximum controllability during rapid fire, even for small handed shooters. An integral accessory rail is built into the frame to attach a variety of popular white light and laser devices. The front sight is removable for the easy installation of tritium or other specialty sights. The magazine well has been aggressively beveled for faster, more positive reloads.

The Beretta Vertec...the next step in a long tradition of pistol excellence.

Some information provided by otomik.

Galil Assault Rifles

Micro Galil [Galil AR] [Galil SAR]

Israeli Military Industries
Ramat Ha Sharon, Israel

5.56x45mm NATO

Operation: Gas, Piston

Safety: Ambidextrous selector switch, 0-1-30

Sights: Flip aperture rear, hooded post front + tritium

Barrel: Varies

Weight: Varies

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, Semi-automatic, fully automatic

Cyclic Rate: 650-750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AR	**5.56mm NATO**	**Assault Rifle**	**2**	**35 clip**	**SA/FA**	**9M**	**3.95**	**4/9 days**	**1,500 ¥**
SAR	**5.56mm NATO**	**Assault Rifle**	**3**	**35 clip**	**SA/FA**	**9M**	**3.75**	**4/9 days**	**1,450 ¥**
MAR	**5.56mm NATO**	**Assault Rifle**	**3**	**35 clip**	**SA/FA**	**8M**	**3**	**4/9 days**	**1,000 ¥**

All Galil rifles include a side-folding stock. +1 Conceal when stock is folded.

The Galil rifle is a phoenix, risen from the ashes; a result of lessons learned by Israeli desert fighters in the 1967 Six-Day War. Very much the progeny of Israel Galili, chief weapons designer for IMI (Israeli Military Industries), and Yaacov Lior, the Galil is a somewhat successful attempt at Candide's "best of all possible worlds."

Dissatisfied with the 7.62mm NATO FN FAL with which the Israeli Army was largely equipped, as it has always been a poor performer in high sand and dust environments, Galili went directly into the field to investigate the problem. He was told by everyone that the Kalashnikov was the "tiger of the desert."

Taking what he needed from the AK-47 (and its variants; Finland's Valmet 62 provided the receiver for the initial run of rifles), Galili placed his rifle in competition with the M16A1, the Stoner 63, the AK-47, the HK 33 and a design by Uziel Gal. The test's greatest emphasis revolved around performance under arid-region conditions. The Galil emerged as the clear winner and won the Israeli Defense Award. It was officially adopted by the Israeli Defense Forces (IDF) in 1972. Although also produced in caliber 7.62mm NATO to increase its sales on the world market, the Galil rifle as issued to the IDF is chambered for the 5.56mm NATO M193 ball ammunition.

There are three basic configurations of the 5.56mm Galil. The AR is equipped with a high-impact-plastic handguard without a bipod or carrying handle. The barrel length is 18.1 inches (460mm) with the flash suppressor. The SAR is a short-barreled version of the AR model. It has a barrel length of only 13 inches (332mm). Its gas tube and piston are 1 1/8 inches shorter than the other models. The 5.56mm NATO Galils all have six-groove barrels with a right-hand 1:7-inch twist for the M855 ball projectile.

Israel Military Industries has by no means decided that their Galil is beyond modification or improvement. For example, they came to realize that, by nature of its length, the Galil was not well-suited for close quarters engagements. Of course, the 9mm Uzi functions well in this arena, but there is quite a disparity between the Uzi's inherent firepower and that of the .223 Galil. One solution that IMI has advanced to reduce size without losing firepower is an ultra-compact version of the Galil.

Known as the Micro Galil, this sub-gun and the Uzi are both roughly equivilent in size whether their stocks are folded or extended. IMI has shortened its barrel to 7.67 inches (195mm) in length, and it consequently requires a shorter gas tube. A special set of handguards were designed with lips at the front and rear to prevent the user's hand from slipping either way. The sights are arranged like those on the Uzi: front post adjustable for elevation, rear flip-type adjustable for windage and protective ears surrounding both. From a logistics standpoint, the Micro Galil has obvious advantages over the Uzi in that its bolt, fire control components and magazines are interchangeable with those of the larger .223 Galils.

All three models are normally issued with a folding stock, although a wooden buttstock is an available option.

Text abbreviated from SOF Magazine, written by Peter G. Kokalis

Galil Battle Rifles

Israeli Military Industries
Ramat Ha Sharon, Israel

7.62x51mm NATO

Operation: Gas, Piston

Safety: Ambidextrous selector switch, 0-1-30

Sights: Flip aperture rear, hooded post front + tritium

Barrel: Varies

Weight: Varies

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, Semi-automatic, fully automatic

Cyclic Rate: 750-900 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
ARM	**7.62mm NATO**	**Assault Rifle**	**2**	**25 clip**	**SA/FA**	**9S**	**4.35**	**4/9 days**	**1,750 ¥**
AR	**7.62mm NATO**	**Assault Rifle**	**2**	**25 clip**	**SA/FA**	**9S**	**3.95**	**4/9 days**	**1,500 ¥**
SAR	**7.62mm NATO**	**Assault Rifle**	**3**	**25 clip**	**SA/FA**	**8S**	**3.75**	**4/9 days**	**1,450 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- All Galil rifles include a side-folding stock. +1 Conceal when stock is folded.

The Galil rifle is a phoenix, risen from the ashes; a result of lessons learned by Israeli desert fighters in the 1967 Six-Day War. Very much the progeny of Israel Galili, chief weapons designer for IMI (Israeli Military Industries), and Yaacov Lior, the Galil is a somewhat successful attempt at Candide's "best of all possible worlds."

Dissatisfied with the 7.62mm NATO FN FAL with which the Israeli Army was largely equipped, as it has always been a poor performer in high sand and dust environments, Galili went directly into the field to investigate the problem. He was told by everyone that the Kalashnikov was the "tiger of the desert."

Taking what he needed from the AK-47 (and its variants; Finland's Valmet 62 provided the receiver for the initial run of rifles), Galili placed his rifle in competition with the M16A1, the Stoner 63, the AK-47, the HK 33 and a design by Uziel Gal. The test's greatest emphasis revolved around performance under arid-region conditions. The Galil emerged as the clear winner and won the Israeli Defense Award. It was officially adopted by the Israeli Defense Forces (IDF) in 1972.

There are three basic configurations of the 7.62mm Galil. The ARM is equipped with a bipod, wooden handguard and carrying handle. It is intended for use as an assault rifle and squad automatic weapon. The AR is equipped with a high-impact-plastic handguard without a bipod or carrying handle. The barrel length for both models is 20 inches (508mm). The SAR is a short-barreled version of the AR model. It has a barrel length of only 15.75 inches (400mm). Its gas tube and piston are 1 1/8 inches shorter than the other models. The 5.56mm NATO Galils all have six-groove barrels with a right-hand 1:7-inch twist for the M855 ball projectile. All three are normally issued with a folding stock, although a wooden buttstock is an available option.

Text abbreviated from SOF Magazine, written by Peter G. Kokalis

Beretta Model 93 Raffica

[93R, stock attached] [93R, compact]

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

9x19mm Parabellum

Operation: Short Recoil

Safety: Frame-mounted left side, behind fire selector

Sights: Fixed 3-Dot, Fixed Tritium

Barrel: 6.14" (156mm)

Weight: 2.57 lbs. (1.17 g)

Magazine Capacity:
20 rounds, double stack

Modes of fire:
Safe, semi-auto, 3 round burst

Cyclic Rate: 1100 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
93R	**9mm Para**	**Medium Pistol**	**5**	**20 clip**	**SA/BF**	**7M**	**1.17**	**6/7 days**	**1,100 ¥**

- Includes an extended barrel with the eqivalent of Gas Vent 2.
- Retractable forward handgrip provides an additional 1 point of recoil compensation when used.
- Detachable folding stock included. Provides an additional 1 point of recoil compensation. -2 Conceal when attached.
- Standard 92 or Brigadier-length barrels and magazines can be used. +1 Conceal.

The Beretta 93R is a heavy duty variant of the Beretta 92 series pistol, developed for special forces use. It includes a burst fire mechanism, and is selectable between semi-automatic and 3 round burst modes of fire. Unlike the standard 92, the 93R incorporates a single action trigger mechanism and a heavy slide.

The Beretta 93R includes an extended 6.14 inch (156mm) barrel with an integral compensator machined into it. Also included is a folding front grip attached to the enlarged trigger guard. When used in tandem with the detachable folding shoulder stock (+0.27 kg), these systems make the 93R a very controllable, compact automatic weapon system.

Standard 92 series 15-round magazines can be used along with standard or Brigadier-length barrels, if compactness is of utmost priority (pictured above). 30-round extended magazines are also available.

Ceská Zbrojovka Models 75 and 85 (CZ75, CZ85)

[CZ85 Combat]

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: Double/Single or DAO

Safety: Frame-mounted, left side OR ambidextrous (CZ85)

Sights:
Fixed 3-Dot

Barrel: 4.7" (120mm)

Weight: 2.2 lbs. (1.0 kg)

Magazine Capacity:
10-16 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ75/85	**9mm Para**	**Medium Pistol**	**6**	**16 clip**	**SA**	**7M**	**1**	**2/24 hrs**	**480 ¥**
CZ75/85	**.40 S&W**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**1**	**2/24 hrs**	**480 ¥**
CZ85C	**9mm Para**	**Medium Pistol**	**6**	**16 clip**	**SA**	**7M**	**1**	**2/24 hrs**	**590 ¥**

- CZ85 models include ambidextrous safety and slide stop levers. +25 ¥.
- Available in standard Black Polycoat finish, Glossy Blue, Satin Nickel, or Dual Tone (nickel frame, blue slide).

The CZ75 pistol is generally considered to be one of the better combat handgun designs of the 20th century. The CZ75 is a tilting barrel locked breech style semi-automatic handgun. The CZ75 is available in many versions and configurations to suit a wide variety of uses. The CZ75/CZ85 can be ordered with a Double Action Only (DAO) trigger mechanism.

The characteristic features of all versions are the following:

- Large capacity double-column magazine
- Comfortable grip in either hand
- All steel
- Dual action mode of operation (double action or single action where applicable)
- Highly accurate
- Long service life
- Highly reliable

Combat tested in inclement weather, desert operations and jungle conditions. The slide stays open after the last cartridge has been fired. The sights are outfitted with three-dot system for better aiming in poor visibility. Suitable for combat shooting.

The CZ85 Combat (CZ85C) features a fully adjustable rear sight, extended magazine release, ambidextrous slide stop and safety catch, free-fall magazine and over travel adjustment on the trigger.

B versions include a passive firing pin block safety for added drop protection.

Ceská Zbrojovka Model 75 (CZ75) Compact

[CZ75D PCR]

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

9mm Parabellum

Operation: Short Recoil

Action: Double/Single or DAO

Safety: Frame-mounted, left side OR ambidextrous (CZ85)

Sights:
Fixed 3-Dot

Barrel: 3.9" (100mm)

Weight: 1.7 lbs. (780 g)

Magazine Capacity:
14 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ75C	**9mm Para**	**Medium Pistol**	**7**	**14 clip**	**SA**	**7M**	**.92**	**2/24 hrs**	**510 ¥**
CZ75D	**9mm Para**	**Medium Pistol**	**7**	**14 clip**	**SA**	**7M**	**.78**	**2/24 hrs**	**525 ¥**

Available in standard Black Polycoat finish, Glossy Blue, Satin Nickel, or Dual Tone (nickel frame, blue slide).

The CZ75 pistol is generally considered to be one of the better combat handgun designs of the 20th century. The CZ75 is a tilting barrel locked breech style semi-automatic handgun. The CZ75 is available in many versions and configurations to suit a wide variety of uses. The CZ75/CZ85 can be ordered with a Double Action Only (DAO) trigger mechanism.

The characteristic features of all versions are the following:

- Large capacity double-column magazine
- Comfortable grip in either hand
- All steel
- Dual action mode of operation (double action or single action where applicable)
- Highly accurate
- Long service life
- Highly reliable

Combat tested in inclement weather, desert operations and jungle conditions. The slide stays open after the last cartridge has been fired. The sights are outfitted with three-dot system for better aiming in poor visibility. Suitable for combat shooting.

The COMPACT offers all the features of the full size CZ75 while reducing weight and bulk for comfortable carry. The compact is 20mm shorter in the slide and 10mm shorter in the grip. All the compacts fire DA/SA, and are equipped with a firing pin block for enhanced safety.

Designed to the specifications of the Czech national police the PCR (Police of Czech Republic) COMPACT is an alloy frame de-cocker. The PCR features an extended magazine release, low profile snag-free sights, loaded chamber indicator, serrated front and back strap for improved handling, rubber grip panels and a lanyard loop in the butt.

Ceská Zbrojovka Model 75 P-01 (CZ P-01)

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

9mm Parabellum

Operation: Short Recoil

Action: Double/Single or DAO

Safety: Frame-mounted, left side OR ambidextrous (CZ85)

Sights:
Fixed 3-Dot

Barrel: 3.8" (96.5mm)

Weight: 1.68 lbs. (765 g)

Magazine Capacity:
14 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ P-01	**9mm Para**	**Medium Pistol**	**7**	**13 clip**	**SA**	**7M**	**.76**	**3/36 hrs**	**550 ¥**

- Available in standard Black Polycoat finish only.
- Under-barrel light not included.

After 3 years of some of the most aggressive small arms testing ever, the CZ P-01 is the successor to the CZ75's currently in use by the Czech National Police. The P-01 is based on the CZ75 design, but with improvements in Metallurgy, quality control, and design. The components of the P-01 are completely interchangeable, this required some very careful re-design so that the reliability and accuracy were not impaired.

The P-01 features:

- A forged aircraft grade aluminum alloy frame for light but reliable day-to-day carry.
- A Hammer forged barrel for accuracy and durability.
- De-cocker action and a firing pin block for maximum safety.
- The P-01 is also equipped with an M3 rail to accept lights or lasers.
- Dual slide serration's for easy slid operation.
- Generous squared triggerguard for gloved hands.
- Re-contoured trigger for smoother, consistent trigger pulls.
- Durable chemical resistant matte polycoat finish.
- Lanyard loop on butt.
- Checkered rubber grips and serrated front and back strap for superior handling.
- Easy disassembly for cleaning.

Ceská Zbrojovka Model 83

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

Various Chamberings

Operation: Blowback

Action: Double/Single

Safety: Frame-mounted, left side

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 3.8" (96.5mm)

Weight: 1.65 lbs. (750 g)

Magazine Capacity:
12-15 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ83	**.32 Auto**	**Light Pistol**	**7**	**15 clip**	**SA**	**6L**	**.75**	**3/36 hrs**	**400 ¥**
CZ83	**9mm Makarov**	**Light Pistol**	**7**	**12 clip**	**SA**	**5M**	**.80**	**3/36 hrs**	**400 ¥**
CZ83	**.380 Auto**	**Light Pistol**	**7**	**12 clip**	**SA**	**5M**	**.80**	**3/36 hrs**	**400 ¥**

Available in Glossy Blue (shown) or Satin Nickel finish.

The CZ 83 is a compact all-steel semi-automatic handgun, designed on the blowback breech principle. They are produced with a classic rifled barrel in calibers 7.65mm Browning (.32 Auto), and 9mm Browning Short (.380 ACP, 9mm Kurz), and with polygonal bore for the 9 mm Makarov. The trigger mechanism is of a DA/SA type.

The CZ 83 features an ambidextrous manual safety, magazine catch and slide stop on one side. When the last cartridge from the magazine has been fired, the slide is locked in its rear position. The magazine is of a double-column type with a single cartridge outlet. Due to its favorable caliber to weight ratio, reliability and compactness helps to facilitate the concealed carry of this pistol, thus predisposing it to become a popular sought-after handgun for personal defense. The pistol is supplied with 3 dot sights; tritium sights are available by special order.

Ceská Zbrojovka Model 97 (CZ97)

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

.45 ACP

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted, left side

Sights:
Fixed 3-Dot

Barrel: 4.8" (123mm)

Weight: 2.5 lbs. (1.15 kg)

Magazine Capacity:
10 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ97	**.45 ACP**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**1.15**	**2/24 hrs**	**625 ¥**

The CZ97 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

The CZ97 is based on the CZ75 design, generally considered to be one of the better combat handgun designs of the 20th century. The CZ97 is a tilting barrel locked breech style semi-automatic handgun.

The characteristic features of all versions are the following:

- Large capacity double-column magazine
- Comfortable grip in either hand
- All steel (except PCR model)
- Dual action mode of operation (double action or single action where applicable)
- Highly accurate
- Long service life
- Highly reliable

Combat tested in inclement weather, desert operations and jungle conditions The slide stays open after the last cartridge has been fired The sights are outfitted with three-dot system for better aiming in poor visibility. Suitable for combat shooting.

The CZ97B is the big bore brother to the CZ75. The CZ97 differs from the CZ75 in that the grip and the slide were increased in size to accommodate the popular .45 ACP cartridge. The CZ97 also uses a SIG-type locking block around the chamber that engages the slide's ejection port. Other features include: Screw in barrel bushing, Loaded chamber indicator.

B version includes a passive firing pin block safety for added drop protection.

Ceská Zbrojovka Model 100 (CZ100)

Ceská Zbrojovka (CZUB)
Uhersky Brod, Czech Republic

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: DAO, Double/Single

Safety: Frame-mounted, left side OR ambidextrous (CZ85)

Sights:
Adjustable 3-Dot

Barrel: 4.7" (98mm)

Weight: 1.5 lbs. (665 g)

Magazine Capacity:
10-13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CZ100	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.67**	**2/24 hrs**	**425 ¥**
CZ100	**.40 S&W**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**0.67**	**2/24 hrs**	**425 ¥**
CZ110	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.67**	**2/24 hrs**	**450 ¥**
CZ110	**.40 S&W**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**0.67**	**2/24 hrs**	**450 ¥**

The CZ100 pistol belongs to the new breed of high capacity semi-automatic pistols incorporating polymer frame technology. The combination of the polymer frame and steel slide reduced weight significantly enhancing the comfort of day-to-day carry. The trigger mechanism is a DAO type, incorporating a firing pin block safety. Its elegant shape and design facilitates shooting in gloved hands.

CZ110 model includes a double action/single action trigger mechanism. As there is no external hammer present, the striker gets to the cocked position either by manual retracting of the slide (pulled back approx. 10mm), or is cocked by the slide movement cycle resulting from previous discharge. Trigger travel is short, and pull weight is low. In the course of consecutive discharges, the firing pin automatically re-cocks and remains in this position.

Ruger GP100

GP161 [GPF331] [KGP141]

Sturm, Ruger & Co., Inc. Southport, CT UCAS

.357 Magnum/.38 Special

Operation: Revolver

Action: Double Action

Safety: Transfer Bar

Sights: Adjustable rear notch or fixed notch, front post

Barrel: Varies

Weight: Varies

Magazine Capacity: 5 rounds, cylinder

Modes of fire: Double Action, Single Action

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
GP141	.357 Mag	Medium Pistol	6	6 cyl	SA	9M	1.2	2/24 hrs	500 ¥
GP160	.357 Mag	Heavy Pistol	5	6 cyl	SA	9M	1.2	2/24 hrs	500 ¥
GP161	.357 Mag	Heavy Pistol	5	6 cyl	SA	9M	1.3	2/24 hrs	500 ¥
GPF331	.357 Mag	Medium Pistol	6	6 cyl	SA	8M	1	2/24 hrs	490 ¥
GPF340	.357 Mag	Medium Pistol	6	6 cyl	SA	9M	1	2/24 hrs	490 ¥
GPF341	.357 Mag	Medium Pistol	6	6 cyl	SA	9M	1.1	2/24 hrs	490 ¥

- All models chambered in .357 Magnum may also fire the .38 Special cartridge. When using .38 Special ammunition, drop Damage Code to 5M and range to Light Pistol.
- Available with stainless steel construction. +40¥. (Does not apply to KGPF380.)

The sophisticated engineering in Ruger double-action revolvers is evident not only in how they are put together, but in how quickly they can be disassembled. Composed of a series of integrated subassemblies, the GP100 can be fieldstripped to their basic components in seconds for cleaning without the use of tools. Ruger's philosophy of strength, simplicity, and ease of maintenance has been applied throughout.

The GP100 represents significant improvements over every other double-action revolver available in the world today. Frame widths are increased in critical areas that support the barrel; both frame sidewalls are solid and integral sections of the frame, offering additional strength and rigidity. Cylinder-locking notches are offset and cut into the thick part of the cylinder walls between the centers of the chambers rather than directly over them. In its firing position, the cylinder is securely locked to the frame in two places: at the rear by the traditional cylinder pin, and at the front of the crane by a large, unique spring-loaded latch. This helps ensure proper cylinder and barrel alignment for optimum accuracy.

All Ruger double-action revolvers feature Ruger's Transfer Bar Safety System. The transfer bar, raised into firing position only as the trigger is pulled fully to the rear, transmits the energy of the hammer blow to the firing pin.

Information above courtesy of Ruger Firearms.

Ed Brown Products Class A Limited 1911

Ed Brown Products
Perry, MO UCAS

Various Chamberings

Operation: Short Recoil

Action: Single Action

Safety: Frame-mounted, ambidextrous

Sights:
Fixed 3-Dot, Tritium
Adjustable 3-Dot, Tritium

Barrel: 5.0" (127mm)

Weight: 2.37 lbs. (1.07 kg)

Magazine Capacity:
7 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CAL	**9mm Para**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**7M**	**1**	**4/60 days**	**2250 ¥**
CAL	**.38 Super**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**8M**	**1**	**4/60 days**	**2250 ¥**
CAL	**9x23mm**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**8M**	**1**	**4/60 days**	**2250 ¥**
CAL	**.357 SIG**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**9M**	**1**	**4/60 days**	**2250 ¥**
CAL	**.40 S&W**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**8M**	**1**	**4/60 days**	**2250 ¥**
CAL	**10mm Auto**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**9M**	**1**	**4/60 days**	**2250 ¥**
CAL	**.400 Cor-Bon**	**Heavy Pistol**	**6**	**7 clip**	**SA**	**9M**	**1**	**4/60 days**	**2250 ¥**
CAL	**.45 ACP**	**Heavy Pistol**	**6**	**7 clip**	**SA**	**8M**	**1**	**4/60 days**	**2250 ¥**

- The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.
- With stainless frame/blued slide, 2,350¥. All stainless, 2,450¥.
- Commander slide (4.25"/108mm barrel) available, except for 10mm and 9x23mm. +1 Conceal, 0.93 kg.
- Bobtail modification on any Commander-size pistol, +30¥.
- 8-round .45 ACP/.400 Cor Bon magazines are available from Wilson Combat. 30¥ each. 2/24 hours Availability.
- Any cartridge suitable for the 1911 frame may be ordered. Cartridges not listed +1/7 days availability.

Undoubtedly the world's finest 1911's. Top of their class in all categories: Accuracy, Fit/Finish, Performance, and Reliability. Built one at a time, custom made to order, by Ed Brown or his two sons. Many options and calibers are available to design the perfect 1911 for you (see the order form for options and prices). All this at an unbelievable delivery of 60-90 days! You've tried the rest, isn't it time you owned the best?

The Class A Limited is our full custom pistol. It is highly customizable, with nearly limitless combinations of options and calibers. You can virtually build whatever you want. This gun can be built for carry use, tactical use, or for practical competition. You can order a Commander (4.25"/108mm slide) Bobtail™ which is great for concealed carry, a no-nonsense "FBI type" practical pistol for IDPA competition or self-defense (as pictured), a full race 40 S&W USPSA Limited competition gun with a bull barrel, or even a hunting handgun with 6" slide. You can also get the SNAKESKIN treatment, identical to the Kobra, for those who want a Kobra type handgun with additional options or in other calibers. Just tell us how you want it, and we built specifically to your order! The slide has rear serrations only, (or can have the SNAKESKIN treatment), and has a rounded, matte finished top sighting surface and matte finished sides for a durable, non glare finish.

Standard equipment includes all Ed Brown premium components including but not limited to:

- Ambidextrous safety (extended safety optional)
- Memory Groove Beavertail grip safety
- Cross dovetail front sight
- 30 LPI checkered forestrap and mainspring housing (or SNAKESKIN)
- 40 LPI checkered magazine catch
- Commander style slotted hammer
- Ed Brown premium match grade barrel 7 round magazine
- Novak LMC fixed rear sight buried deep into the slide(night sights optional)
- Hogue exotic checkered wood grips.
- All Ed Brown premium Hardcore® parts are used where applicable
- All parts are completely hand-fitted to a custom made, exclusive Ed Brown slide and frame.

Ed Brown Products

Ed Brown Products Kobra 1911

Kobra Carry [Kobra]

Ed Brown Products
Perry, MO UCAS

.45 ACP

Operation: Short Recoil

Action: Single Action

Safety: Frame-mounted left side, Ambidextrous optional

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: Varies

Weight: Varies

Magazine Capacity:
7 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
KF450	**.45 ACP**	**Heavy Pistol**	**6**	**7 clip**	**SA**	**8M**	**1**	**4/60 days**	**1795 ¥**
KC450	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**0.93**	**4/60 days**	**1795 ¥**

- The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.
- With stainless frame/blued slide, 1,895¥. All stainless, 1,995¥.
- 8-round .45 ACP/.400 Cor Bon Magazines are available from Wilson Combat. 30¥ each. 2/24 hours Availability.
- Any cartridge suitable for the 1911 frame may be ordered. Cartridges not listed +1/7 days availability.

Undoubtedly the world's finest 1911's. Top of their class in all categories: Accuracy, Fit/Finish, Performance, and Reliability. Built one at a time, custom made to order, by Ed Brown or his two sons. Many options and calibers are available to design the perfect 1911 for you (see the order form for options and prices). All this at an unbelievable delivery of 60-90 days! You've tried the rest, isn't it time you owned the best?

The Ed Brown Kobra tactical pistol (KF450, 5" [127mm] barrel) is the perfect all-round companion for tactical use. The patented Bobtail™ conversion makes the Kobra Carry pistol (KC450) extremely easy to conceal. The full size Government model frame with Bobtail, and the shorter 4.25" [108mm] Commander length slide make this pistol perfect for carry and concealment, without sacrificing reliability or handling.

Both pistols have extra dehorning and a bead blast finish for the ultimate in durability.

Standard equipment includes all Ed Brown premium components including but not limited to:

SNAKESKIN treatment on forestrap, bobtail housing, and slide. A beautiful, unique, and snag free gripping surface.

- Ed Brown premium match grade barrel
- Extended safety
- Memory Groove Beavertail grip safety
- Commander style slotted hammer
- 30 LPI checkered magazine catch
- 7 round magazine
- Novak night sights, LMC low mount rear, dovetail front
- Hogue exotic checkered wood grips.
- All Ed Brown premium Hardcore® parts are used where applicable
- All parts are completely hand-fitted to a custom made, exclusive Ed Brown slide and frame.

Ed Brown Products

IMI Uzi

Israeli Military Industries
Ramat Ha Sharon, Israel

9mm Parabellum

Operation: Blowback

Safety: 0-1-30 trigger group, left side, grip safety

Sights: Flip aperture rear (100/200m), protected post

Barrel: 10.23" (260mm)

Weight: 8.15 lbs. (3.7 kg)

Magazine Capacity: 32 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Uzi	**9mm Para**	**SMG**	**3**	**32 clip**	**SA/FA**	**8M**	**3.7**	**2/24 hrs**	**1,150 ¥**

- 25, 32 and 40 round magazines are available for the Uzi.
- This weapon has a retracting buttstock (+1 Conceal when retracted) that provides 1 point of recoil compensation.

The Uzi sub-machine gun continues to sell well, having proved its dependability and effectiveness. This lightweight IMI product now addresses three distinct markets: military, law-enforcement, and sporting. In the latter case, the Uzi is semiautomatic only, has a longer barrel and a fixed stock.

The Uzi is a compact weapon and makes use of a number of features which have since found their way into other SMG designs. It has a square outline and is made from steel pressings riveted and spot-welded together. It uses a blowback mechanism but has a bolt that actually wraps around the end of the barrel. The bolt face and firing pin are some 95mm (3 3/4 in) back from the front edge of the bolt, the rest of which surrounds the chamber and rear of the barrel. Slots are cut into the bolt to allow empty cases to pass through when being ejected, and by using this wraparound method a sufficiently massive bolt can be made that takes up little space. The return spring sits round a guide rod above the level of the barrel, which extends forward of the chamber.

The Uzi fires from an open bolt in order to allow air to circulate through the barrel, so helping to cool the weapon while it is at rest.

The Uzi is reliable and surprisingly accurate; it has been used by the armed forces of over 20 nations and has also been licence-built by FN in Belgium. Israeli troops have fought numerous battles with this tough little gun, and even though it has been replaced in many formations by the Galil assault rifle it will remain in service for years to come.

Some of the description was exerpted from *The World's Great Small Arms* by Craig Philip

IMI Mini Uzi

Israeli Military Industries Ramat Ha Sharon, Israel	
9mm Parabellum	
Operation: Blowback	
Safety: 0-1-30 trigger group, left side, grip safety	
Sights: Flip aperture rear (100/200m), protected post	
Barrel: 7.75" (197mm)	
Weight: 5.95 lbs. (2.7 kg)	
Magazine Capacity: 25 rounds, detachable box	
Modes of fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 950 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Mini Uzi	**9mm Para**	**SMG**	**4**	**25 clip**	**SA/FA**	**7M**	**2.7**	**3/36 hrs**	**950 ¥**

- 20, 25 and 32 (pictured) round magazines are available for the Mini Uzi.
- This weapon has a side folding buttstock (+1 Conceal when folded) that provides 1 point of recoil compensation.

The Uzi sub-machine gun continues to sell well, having proved its dependability and effectiveness. This lightweight IMI product now addresses three distinct markets: military, law-enforcement, and sporting. In the latter case, the Uzi is semiautomatic only, has a longer barrel and a fixed stock.

The Uzi is a compact weapon and makes use of a number of features which have since found their way into other SMG designs. It has a square outline and is made from steel pressings riveted and spot-welded together. It uses a blowback mechanism but has a bolt that actually wraps around the end of the barrel. The bolt face and firing pin are some 95mm (3 3/4 in) back from the front edge of the bolt, the rest of which surrounds the chamber and rear of the barrel. Slots are cut into the bolt to allow empty cases to pass through when being ejected, and by using this wraparound method a sufficiently massive bolt can be made that takes up little space. The return spring sits round a guide rod above the level of the barrel, which extends forward of the chamber.

The mini-Uzi is some 95mm (3 3/4 in) shorter than the standard model, has a much simpler wire folding stock, and has compensating slots cut into the top of the muzzle. In virtually all other respects it is identical to the basic model. The Mini Uzi can be made to fire from either an open bolt or a closed bolt.

The Mini Uzi design is the basis for Fabrique Nationale's Uzi III. The Uzi III differs only in the greater use of polymers for construction and uses a simplified, burst-only trigger mechanism.

Some of the description was exerpted from *The World's Great Small Arms* by Craig Philip

IMI Micro Uzi

Israeli Military Industries
Ramat Ha Sharon, Israel

9mm Parabellum

Operation: Blowback

Safety: 0-1-30 trigger group, left side, grip safety

Sights: Aperture rear, protected post front

Barrel: 4.61" (117mm)

Weight: 4.3 lbs. (1.95 kg)

Magazine Capacity: 20 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 1250 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Micro Uzi	**9mm Para**	**Medium Pistol**	**5**	**20 clip**	**SA/FA**	**7M**	**2**	**4/48 hrs**	**680 ¥**
Micro Uzi	**.45 ACP**	**Medium Pistol**	**5**	**16 clip**	**SA/FA**	**8M**	**2.2**	**4/48 hrs**	**680 ¥**

- 20, 25 and 32 (pictured, -1 Conceal) round magazines are available for the Micro Uzi.
- This weapon has a side folding buttstock (+1 Conceal when folded) that provides 1 point of recoil compensation.

The Uzi sub-machine gun continues to sell well, having proved its dependability and effectiveness. This lightweight IMI product now addresses three distinct markets: military, law-enforcement, and sporting. In the latter case, the Uzi is semiautomatic only, has a longer barrel and a fixed stock.

The Uzi is a compact weapon and makes use of a number of features which have since found their way into other SMG designs. It has a square outline and is made from steel pressings riveted and spot-welded together. It uses a blowback mechanism but has a bolt that actually wraps around the end of the barrel. The bolt face and firing pin are some 95mm (3 3/4 in) back from the front edge of the bolt, the rest of which surrounds the chamber and rear of the barrel. Slots are cut into the bolt to allow empty cases to pass through when being ejected, and by using this wraparound method a sufficiently massive bolt can be made that takes up little space. The return spring sits round a guide rod above the level of the barrel, which extends forward of the chamber.

The micro-Uzi, which at 250mm (10 in) in length is almost the same size as a large handgun. It retains a wire folding stock, and the bolt has a heavy tungsten insert to slow the rate of fire to a reasonable level. The micro-Uzi is too small and short-ranged for the battlefield, but it makes for an effective, easily concealed bodyguard and personal defence weapon.

Some of the description was exerpted from *The World's Great Small Arms* by Craig Philip

Steyr Armee Universal Gewehr (AUG) 9 Para

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

9mm Parabellum

Operation: Blowback

Safety: Crossbolt, safe/fire; Semi/full select with trigger

Sights: 1.5x Optical wind/elev adjustable, backup iron sights

Barrel: 16.5" (420mm)

Weight: 7.2 lbs (3.3 kg)

Magazine Capacity: 25 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AUG 9	**9mm Para**	**Light Carbine**	**4**	**25 clip**	**SA/FA**	**8M**	**3.3**	**6/7 days**	**700 ¥**

- Available with OD Green or Black polymer parts.
- 1.5x optical sight provides no Target Number bonuses when used.
- Stock and forward handgrip each provide 1 point of recoil compensation.

Designed for operations where calibre 9mm is the best choice. No other 9mm weapon gives such accuracy with high hit probability as the AUG 9mm carbine. High accuracy is achieved by 420mm barrel which gives a higher muzzle energy. With an optional muzzle device CS and CN rifle grenades may be launched. A bayonet holder is also available. The closed bolt firing system gives the extra edge in accuracy and safety. The barrel is threaded to accept various silencers.

The rifle can easily be changed from right to left hand ejection, simply by flipping the ejection port lid to the other side and installing a left hand bolt (no tools required).

The AUG uses Steyr's "pull-through" trigger system. Fires semi-automatic when pulled halfway to a clearly felt point, fires fully automatic when pulled fully back.

Operating parts for the AUG A1/A2 can be interchanged into the same stock as the AUG 9 Para. This means that an assault rifle can be changed into a submachine gun or vice versa in a matter of a few minutes.

FAMAE SAF

FAMAE
Santiago, Chile

9mm Parabellum, .40 S&W

Operation: Blowback

Safety: 0-1-3-30 trigger group

Sights: Rotary diopter rear (three apertures), post front

Barrel: 7.87" (200mm)

Weight: 5.95 lbs (2.7 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of fire: Safe, semi-automatic, 3-round burst, fully automatic

Cyclic Rate: 1200 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SAF	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**7M**	**2.7**	**3/48 hrs**	**780 ¥**
SAF	**.40 S&W**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**2.7**	**3/48 hrs**	**800 ¥**

- SAF available with folding stock, +1 Conceal when folded.
- Fixed and folding buttstocks provide 1 point of recoil compensation.

Like the Steyr submachine gun [AUG 9 Para], the SAF is based upon an assault rifle design, though in this case with much more modification. In the 1980s the FAMAE factory (the Chilean government small arms factory) obtained a license to manufacture the Swiss SIG 540 assault rifle. This is a 5.56mm locked-breech weapon of fairly conventional pattern, and is the standard Chilean service rifle. Having setup the machinery to make this rifle, FAMAE looked at the design and decided to adapt what they could of the rifle to a submachine gun.

The general design, the receiver stock and fore-end, is that of the rifle, though shortened. The rotating bolt breech closing system was modified to a simple blowback bolt, but the rifle's hammer mechanism was retained, so that, like the AUG 9 Para, this weapon fires from a closed bolt. The actual mechanism was altered, however, to allow for single shots, automatic fire or three-round bursts, the latter being somewhat unusual on submachine guns.

A new 9mm barrel was designed and fitted. The magazine was made in translucent plastic so that the contents can be seen at any time; it is also fitted with protruding lugs on one side and keyhole-like slots on the other, so that two or three magazines can be clipped together. One can be inserted into the magazine housing on the weapon, leaving the others exposed. When the first magazine is empty, it is simple to slip it out, shift the lot sideways and slip a fresh magazine into position far quicker than withdrawing a fresh magazine from a pouch and fitting it in place, then having to pick up the old magazine.

Three models of the SAF are made; the standard model with a fixed plastic butt; standard with a side-folding tubular metal butt; and a silenced model with an integral silencer and folding butt. There is also the 'Mini-SAF' with a much shorter barrel, no shoulder stock and a forward handgrip. It can use the standard 30-round magazine but a special 20-round magazine gives additional compactness. The whole weapon is only 12 inches long and is ideal for stealth work like bodyguard and covert operations.

Weapon description exerpted from *Modern Small Arms* by Ian Hogg.

FAMAE Mini SAF

FAMAE
Santiago, Chile

9mm Parabellum

Operation: Blowback

Safety: 0-1-3-30 trigger group

Sights: Rotary diopter rear (three apertures), post front

Barrel: 4.52" (115mm)

Weight: 5.07 lbs (2.3 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of fire: Safe, semi-automatic, 3-round burst, fully automatic

Cyclic Rate: 980 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Mini SAF	**9mm Para**	**Medium Pistol**	**4**	**30 clip**	**SA/BF/FA**	**7M**	**2.3**	**5/72 hrs**	**700 ¥**

Mini SAF has no stock but includes a forward handgrip that provides 1 point of recoil compensation.

Like the Steyr submachine gun [AUG 9 Para], the SAF is based upon an assault rifle design, though in this case with much more modification. In the 1980s the FAMAE factory (the Chilean government small arms factory) obtained a license to manufacture the Swiss SIG 540 assault rifle. This is a 5.56mm locked-breech weapon of fairly conventional pattern, and is the standard Chilean service rifle. Having setup the machinery to make this rifle, FAMAE looked at the design and decided to adapt what they could of the rifle to a submachine gun.

The general design, the receiver stock and fore-end, is that of the rifle, though shortened. The rotating bolt breech closing system was modified to a simple blowback bolt, but the rifle's hammer mechanism was retained, so that, like the AUG 9 Para, this weapon fires from a closed bolt. The actual mechanism was altered, however, to allow for single shots, automatic fire or three-round bursts, the latter being somewhat unusual on submachine guns.

A new 9mm barrel was designed and fitted. The magazine was made in translucent plastic so that the contents can be seen at any time; it is also fitted with protruding lugs on one side and keyhole-like slots on the other, so that two or three magazines can be clipped together. One can be inserted into the magazine housing on the weapon, leaving the others exposed. When the first magazine is empty, it is simple to slip it out, shift the lot sideways and slip a fresh magazine into position far quicker than withdrawing a fresh magazine from a pouch and fitting it in place, then having to pick up the old magazine.

Three models of the SAF are made; the standard model with a fixed plastic butt; standard with a side-folding tubular metal butt; and a silenced model with an integral silencer and folding butt. There is also the 'Mini-SAF' with a much shorter barrel, no shoulder stock and a forward handgrip. It can use the standard 30-round magazine but a special 20-round magazine gives additional compactness. The whole weapon is only 12 inches long and is ideal for stealth work like bodyguard and covert operations.

Weapon description exerpted from *Modern Small Arms* by Ian Hogg.

FAMAE SAF Silenciada

FAMAE Santiago, Chile	
9mm Parabellum	
Operation: Blowback	
Safety: 0-1-3-30 trigger group	
Sights: Rotary diopter rear (three apertures), post front	
Barrel: 7.87" (200mm)	
Weight: 6.61 lbs (3.0 kg)	
Magazine Capacity: 30 rounds, detachable box	
Modes of fire: Safe, semi-automatic, 3-round burst, fully automatic	
Cyclic Rate: 980 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SAF-SD	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**6M**	**3.2**	**5/72 hrs**	**1,150 ¥**

- SAF-SD available with folding stock, +1 Conceal when folded.
- Fixed and folding buttstocks provide 1 point of recoil compensation.
- See rules for suppression.

Like the Steyr submachine gun [AUG 9 Para], the SAF is based upon an assault rifle design, though in this case with much more modification. In the 1980s the FAMAE factory (the Chilean government small arms factory) obtained a license to manufacture the Swiss SIG 540 assault rifle. This is a 5.56mm locked-breech weapon of fairly conventional pattern, and is the standard Chilean service rifle. Having setup the machinery to make this rifle, FAMAE looked at the design and decided to adapt what they could of the rifle to a submachine gun.

The general design, the receiver stock and fore-end, is that of the rifle, though shortened. The rotating bolt breech closing system was modified to a simple blowback bolt, but the rifle's hammer mechanism was retained, so that, like the AUG 9 Para, this weapon fires from a closed bolt. The actual mechanism was altered, however, to allow for single shots, automatic fire or three-round bursts, the latter being somewhat unusual on submachine guns.

A new 9mm barrel was designed and fitted. The magazine was made in translucent plastic so that the contents can be seen at any time; it is also fitted with protruding lugs on one side and keyhole-like slots on the other, so that two or three magazines can be clipped together. One can be inserted into the magazine housing on the weapon, leaving the others exposed. When the first magazine is empty, it is simple to slip it out, shift the lot sideways and slip a fresh magazine into position far quicker than withdrawing a fresh magazine from a pouch and fitting it in place, then having to pick up the old magazine.

Three models of the SAF are made; the standard model with a fixed plastic butt; standard with a side-folding tubular metal butt; and a silenced model with an integral silencer and folding butt. There is also the 'Mini-SAF' with a much shorter barrel, no shoulder stock and a forward handgrip. It can use the standard 30-round magazine but a special 20-round magazine gives additional compactness. The whole weapon is only 12 inches long and is ideal for stealth work like bodyguard and covert operations.

Weapon description exerpted from *Modern Small Arms* by Ian Hogg.

AET Neostead Combat Shotgun

Armaments Éireann-Tír
Armagh, Ulster, Tír na nÓg

12 Gauge, 3" Chamber

Operation: Reversed Slide

Safety: Ambidextrous two position, safe/fire

Sights: Ghost ring rear, post front on carrying handle

Barrel: 22.5" (571mm)

Weight: 8.6 lbs (3.9 kg)

Magazine Capacity: 12 rounds, 2 tubular magazines

Modes of fire: Safe, fire

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
NS	**12**	**Shotgun**	**3**	**12 mag***	**SS**	**10S**	**3.9**	**2/24 hrs**	**650 ¥**

This weapon includes two (2) over-barrel, six-round tubular magazines. Each magazine can store a particular type of ammunition. For instance, one magazine could have buckshot while the other stores slugs. One Simple Action is required to switch feeding between magazines.

The NEOSTEAD is a 12 gauge pump action shotgun with bottom case ejection developed in South Africa over six years. Many of its features are not offered by any competitors, including ammunition selection and large magazine capacity in a small envelope.

Neostead Features

- Selectable twin tube magazine
- 13 shot capacity (six 2¾ inch cartridges in each magazine, plus one cartridge chambered)
- Overall length is 27 inches with full length barrel of 22.5 inches
- Totally ambidextrous as all controls are centrally mounted
- Pump action is reversed
- Straight line stock with magazines above barrel
- Negligible muzzle lift
- Intergral carry handle houses ghost ring sights
- High stength polymers for main external components
- Boltless design
- Sling swivels on top

Safety Features

- Trigger safety locks trigger positively
- Pump handle operates trigger disconnector
- Pump lock
- Firing pin positive return
- Out of battery firing prevention

Originally a South African design, Armaments Éireann-Tír has resurrected this unusual yet potent design and is now producing the Neostead shotgun in mass numbers.

FABARM Tactical Shotgun

Fabbrica Bresciana Armi Travagliato, Italy

12 Gauge, 3" Chamber

Operation: Gas

Safety: Crossbolt sear block

Sights: Fixed notch rear, flip post front; Picatinny rail

Barrel: 20" (508mm)

Weight: 6.6 lbs. (3.0 kg)

Magazine Capacity: 5 rounds, tubular magazine

Modes of fire: Safe, semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Tactical	**12**	**Shotgun**	**2**	**5 magazine**	**SA**	**10S**	**3**	**2/24 hrs**	**520 ¥**

- With folding pistol grip stock, +30¥. +1 Conceal when stock is folded.

Leading the class in utility shotgun design, the Tactical semi-auto functions reliably with all standard 12-gauge shells without adjustment. The Tactical semi uses a gas operating system. The 20-inch barrel is threaded for a variety of chokes and comes with a Picatinny rail and flip-up front sight. The Tactical semi can also be fitted with an optional magazine extension for a seven shot capacity.

Franchi SPAS-15

Luigi Franchi SpA
Fornaci, Italy

12 Gauge, 2.75" Chamber

Operation: Gas or Slide

Safety: Left side, two position; grip

Sights: Adjustable notch rear, protected post front

Barrel: 17.7" (450mm)

Weight: 8.6 lbs. (3.9 kg)

Magazine Capacity:
6 rounds, detachable box

Modes of fire: Safe, single shot/semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SPAS-15	**12**	**Shotgun**	**2**	**6 clip**	**SS/SA**	**10S**	**3.9**	**4/36 hrs**	**1,150 ¥**

- Changing the SPAS-15 from semi-automatic to pump action mode or vice versa requires one Simple Action.
- Folding stock provides +1 Conceal when folded.

Designed specifically for military use, the Franchi SPAS 15 is a semi-automatic gas-operated shotgun that can be converted to pump-action merely by pressing a button on the forend. The SPAS 15 also comes with an exclusive interchangeable prismatic magazine holding 6 cartridges allowing high-speed reloading, and with a three-lug rotating-bolt locking system. This shotgun is NATO qualified and used by the police, customs and army in Italy and other countries. Dual-mode operation, a replaceable magazine, a short barrel, special Variomix interchangeable chokes, a folding technopolymer stock and a complete safety system all make this weapon exceptionally versatile, safe to use and ideal for special purposes and tactical operations.

Stoeger Coach Gun

IGA
Veranópolis, Amazonia

12 Gauge, 3" Chamber

Operation: breech loader

Safety: Two-position tang

Sights: brass bead front sight

Barrel: 20" (508mm)

Weight: 6.5 lbs. (2.9 kg)

Ammunition Capacity:
2 rounds, breech loaded

Modes of fire:
Safe, Single shot

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Coach Gun	**12**	**Shotgun**	**3**	**2 breech**	**SS**	**10S**	**2.9**	**2/24 hrs**	**250 ¥**
Coach Gun	**20**	**Shotgun**	**3**	**2 breech**	**SS**	**8S**	**2.9**	**2/24 hrs**	**250 ¥**
Coach Gun	**.410 Bore**	**Shotgun**	**3**	**2 breech**	**SS**	**9M**	**2.9**	**2/24 hrs**	**250 ¥**

- Being a breech-loaded shotgun, it takes one Complex Action to chamber two rounds, then another Simple Action to fire. Only one round may be fired per Simple Action. Both barrels *cannot* be fired simultaneously.
- Sawed-off version receives -1 Power Rating, +1 Conceal. Use Hold Out ranges.
- +50¥ for satin or polished nickel finish.

The amazing success of cowboy competition has brought back the classic short, fast-handling side-by-side double gun. The Stoeger Coach Gun fills the bill, whether for the fast action at a cowboy match or for close-range personal security work.

It is available in 12- or 20-ga., and .410 bore, and all models handle 3" shells. Its 20" barrels are proofed for steel shot, and the shooter's hand is well protected from barrel heat by a husky beavertail fore-end.

For those who like a distinctive appearance, the Coach Gun is available with nickel-plated frame and barrels and black Brazilian hardwood stock. This gun makes a big impression at a cowboy shoot, and is suitable for maritime use. Like the standard version, it has reliable double triggers and an automatic safety for secure field handling. Both Coach Gun versions have fixed improved cylinder and modified chokes.

The Coach Gun is manufactured by IGA of Amazonia and imported into North America by Stoeger Industries, Inc. Pocomoke, MD UCAS. A subsidiary of Ares Arms, Inc. Detroit, MI UCAS.

Steyr Armee Universal Gewehr (AUG)

AUG A1 [AUG A2] [AUG A3] [AUG HBAR]

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Crossbolt, safe/fire; Semi/full select with trigger

Sights: 1.5x Optical wind/elev adjustable, backup iron sights

Barrel: 20" (508mm)

Weight: 7.93 lbs (3.6 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AUG A1	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.6**	**6/7 days**	**950 ¥**
AUG A2	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.6**	**6/7 days**	**900 ¥**
AUG A3	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.7**	**6/7 days**	**1,250 ¥**

- Forward handgrip provides 1 point of recoil compensation.
- 1.5x optical sight provides no Target Number bonuses when used.
- +1 Conceal when optional 14" (355mm) or 16" (407mm) barrel is used. +200¥ each (A1 and A2 only).
- A 24" heavy barrel with bipod (HBAR) is available. It is used for light support or precision rifle operations. +300¥.
- 10 and 42 round magazines are also available. 35 ¥.

At a time when most arms manufacturers were changing pace to develop rifles to fire the new 5.56x45mm cartridge, Steyr engineer Ulrich Zedrosser took his design a step further and began developing a modular rifle in bullpup layout. It would eventually be considered one of the world's best assault rifle designs, accepted for use by numerous militaries and police agencies worldwide: the Armee Universal Gewehr (AUG).

While the AUG was not the only bullpup to be developed during this time period (the French FAMAS was also developed in the mid 1970s), it does have the distinction of being the first bullpup accepted for military service, replacing the StG58 (FN FAL) in the Austrian military as the StG77 in 1977. It was later accepted for service in the militaries of Djibouti, Ireland, Luxemborg, Morocco, Oman, Saudi Arabia, and Tunisia. In the late 1980s the Australian and Malaysian governments purchased manufacturing licenses from Steyr for local production of the AUG. The Australian F88 rifle, produced at ADI Lithgow, is often referred to as the "Austeyr". New Zealand also uses the F88.

The Steyr AUG was designed around the concepts of compactness, light weight, and modularity. For these reasons, the AUG is configured in a bullpup layout, with the action located behind the grip. It is constructed mostly of lightweight aluminum alloys (receiver) and polymers (stocks are available in Gray, OD Green, Black, White, and Tan colors). Even the majority of the hammer pack parts are made of plastic. However, high-stress parts such as the barrel, bolt, piston, guide rods, springs, and other sundry parts are made of steel.

The rifle is comprised of modular subassemblies that can be broken down for cleaning or mantenance: the polymer stock, hammer pack, receiver/carrying handle/scope, magazine and barrel. Barrels are quick-changeable at the user level, allowing soldiers the ability to swap hot barrels or to use barrels of different lengths (14", 16" 18", 20" or 24"; all cold hammer forged and chrome plated with 1/9" right-hand rifling twist) to suit mission requirements. Barrels are topped by a flash suppressor. The 24" heavy barrel includes a folding bipod and muzzle brake.

The AUG is gas operated with breech locking performed by a rotating bolt similar to that of the AR15/M16. With attention to compactness, the bolt carrier is of a very unconventional shape, with a hollow shaft protruding from each flank and extending forward several inches. Each shaft contains a captive recoil spring assembly. These assemblies interface with two guide rods attached to the interior of the stock, upon which the bolt carrier assembly travels during recoil. As well as containing the recoil springs, each shaft performs other operational functions. The right-hand shaft acts as the operating rod, interfacing with a spring-loaded short stroke gas piston located in the barrel assembly. The left-hand shaft interfaces with a non-reciprocating charging handle. A spring-loaded button on the charging handle positively locks the handle to the shaft when depressed, allowing the charging handle to be used as a forward assist in case the bolt cannot return to battery under its own power. Additionally, the charging handle can be retracted and locked in the rearward position by engaging a notch in the receiver.

Operating controls consist of the aforementioned charging handle, the gas regulator, a crossbolt safety, magazine release lever, barrel lock, and takedown lock pin.

The gas regulator consists of a plug located on the barrel group, to the right of the forward grip and at the end of the cylinder housing the captive, spring-loaded short stroke piston. Rotating the regulator to one of three marked positions allows the rifle to be adjusted for use under normal or adverse conditions, or turned off for use with rifle grenades. The plug may also be removed in order to allow access to the cylinder and piston for cleaning purposes.

The crossbolt safety is located directly above the pistol grip. When pressed to the right, it blocks rearward movement of the trigger by intercepting the tandem rods which connect the trigger to the aft-located hammer pack. There is no conventional fire selector on the Steyr AUG. Semi- and fully-automatic fire are controlled by the trigger, known as a "pull-through" trigger system. Pulling the trigger rearward halfway will fire one round. Pulling the trigger beyond this point allows the weapon to fire in fully automatic mode.

Translucent plastic 10, 30, or 42 round magazines are attached via the "rock and lock" method and are released by manipulation of a spring-loaded lever located centerline and behind the magazine well. Pressing the lever up releases the magazine.

The barrel is removed by first pulling the charging handle rearward and locking it in the rearward position (removing the operating rod from the barrel assembly), then pressing up on the barrel locking latch, located just behind and to the left of the forward grip, then rotating the barrel approximately 60 degrees clockwise and pushing it forward, away from the receiver. The barrel is replaced by simply sliding it into the receiver and rotating the forward grip back to vertical until the barrel locking latch clicks into place.

Disassembly is performed by a large, rectangular crossbolt pin located just forward of the magazine well. After the weapon is cleared, the magazine and barrel are removed and the bolt carrier is released into battery. The takedown pin is pressed left to right, releasing the receiver and bolt carrier group from the front of the stock assembly as a unit. The bolt carrier assembly can then be separated from the receiver. The hammer pack can now be removed from the rear of the stock by pressing a dimple in the center of the butt pad, then removing the rear sling swivel. This releases the butt pad, hammer pack and cleaning kit through the rear of the stock. The AUG is now field stripped and ready to be cleaned.

AUG A1: The AUG A1 includes an integral 1.5x scope developed by Swarovski, fully adjustable for windage and elevation. The reticle is a black range-finding ring, representing the average height of a human male at a distance of 300 meters. Backup iron sights are machined into the top of the receiver in cased the scope is somehow damaged, fogged, or otherwise unusable. The scope housing also acts as a carrying handle. A cleaning kit is stored in the stock.

AUG A2: The AUG A2 includes a receiver in which the scope is detachable. Alternately, a M1913 Picatinny rail can be installed in place of the scope, allowing a greater range of optics to be installed on the rifle. A cleaning kit is stored in the stock.

AUG A3: The AUG A3 inclues a new receiver with a full-length upper M1913 Picatinny rail for mounting optics, including flip-up iron sights, as well as a forward 3-position rail area ahead of the receiver. While significantly expanding the utility of the rifle by allowing the attachment of gear to suit mission requirements, the forward rails unfortunately prevent quick and easy removal of the barrel. An optional stock group designed to utilize NATO STANAG (M16-type) magazines is available as an option. Additionally, a bolt hold open device can be installed on either stock as an option.

Steyr Mannlicher, ADI Limited. Relevant US Patents are 4191089, 4555860, 4702144

Singapore Technologies Kinetics SAR 21

[SAR MMS]

Singapore Technologies Singapore

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Crossbolt safe/fire; separate semi/full selector

Sights: 1.5x Optical wind/elev adjustable, backup iron sights

Barrel: 20" (508mm)

Weight: 8.8 lbs (3.98 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 450-650 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SAR 21	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**4**	**5/7 days**	**1,395 ¥**
SAR MMS	**5.56mm NATO**	**Assault Rifle**	**3**	**30 clip**	**SA/FA**	**9M**	**3.6**	**5/7 days**	**1,295 ¥**

- 1.5x optical sight provides no Target Number bonuses when used. 3x scope optional (level 1 magnification) +30¥.
- Laser aiming device provides a -1 Target Number modifier. Visible or Infrared.
- The SAR 21 rifle has two fire selector switches; one inside the handguard to select between safe and fire, the other (located behind the magazine well) switches the mode from semi-automatic to fully automatic. The latter switch cannot be wired to any Smartlink system.

The SAR 21 ranks among the world's most advanced assault rifles. The rifle's 1.5x optical scope and laser-aiming device enhances accuracy, making it the ideal weapon for quick target engagement. Its bullpup design allows for easy operations in tight space situations, while its low recoil and patented features enable better protection and control during firing.

The SAR 21 is a 5.56mm calibre, gas-operated bullpup rifle. Extensive use of high strength engineering plastics and composites makes the SAR 21 compact, light weight and rugged.

To provide added protection, the SAR 21 has incorporated a patented high pressure vent hole at the chamber and a composite plate at the cheek rest. Ergonomically designed, perfectly balanced with high accuracy and low recoil, the SAR 21 is ideally suited for the modern combat rifleman.

A Modular Mounting System is available for the SAR 21. This system replaces the entire barrel group and forearm (including the laser aiming device) with a three-sided M1913 Picatinny Rail system. With the ambidextrous charging handle moved to the left side of the rifle, another M1913 mount replaces the standard optical sight. These mounts cater to the use of a wider array of optical sights and accessories to suit different mission profiles.

More information about the SAR 21 can be found at ST Kinetics.

Vektor CR21 and CR21 Carbine

[CR21 Carbine]

Vektor Division, Denel Corp.
Pretoria, South Africa

5.56x45mm NATO

Operation: Gas, Piston

Safety: Crossbolt safe/fire; separate semi/full selector

Sights: Reflex sight, wind/elev adjustable, backup iron sights

Barrel: 18.1" (460mm)

Weight: 8.37 lbs. (3.8 kg)

Magazine Capacity: 35 rounds, detachable box

Modes of Fire: Safe, Semi-automatic, fully automatic

Cyclic Rate: 600-750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CR21	**5.56mm NATO**	**Assault Rifle**	**3**	**35 clip**	**SA/FA**	**9M**	**3.8**	**5/7 days**	**1,185 ¥**
CR21C	**5.56mm NATO**	**Assault Rifle**	**4**	**20 clip**	**SA/FA**	**8M**	**3.5**	**5/7 days**	**1,050 ¥**

Reflex sight provides a -1 Target Number modifier. Sight mounts to Picatinny rail.

The CR21 rifle has two fire selector switches; one inside the handguard to select between safe and fire, the other (located behind the magazine well) switches the mode from semi-automatic to fully automatic. The latter switch cannot be wired to any Smartlink system.

The CR21 is a well balanced, light weight bullpup design assault rifle which makes use of the latest state of the art synthetic materials to complete the ergonomic looks of the weapon. But under the skin, the CR21 is based heavily on the tried-and-true Kalashnikov gas operation system.

- The weapon is balanced around the pistol grip to improve handling.
- The 1:1 reflex optical sight makes allowance to fire with both eyes open and improving the "first round hit" probability.
- The 1:9" twist barrel enables the soldier to fire M855 (SS109) and M193 ammunition to obtain a better accuracy over longer distances.
- The weapon can use 20 or 35-round detachable magazines.
- The cleaning kit is stored inside the weapon.
- Ergonomically the weapon is a user friendly, state of the art, robust design.
- The weapon is capable of firing rifle grenades.
- Carbine version available, shortened body, 12.5" (318mm) barrel.
- Internal Smartlink systems are available.

AMP Defensive Sniper Rifle 1 (DSR-1)

AMP Technical Services
Oberndorf/Neckar, Germany

Various Chamberings

Operation: Bolt Action

Safety: Ambidextrous selector switch, safe/loading/fire

Sights: None provided; M1913 Picatinny rail mount for scope

Barrel: 25.6" (650mm)

Weight: 13 lbs. (5.9 kg)

Magazine Capacity:
4-5 rounds, detachable box

Modes of Fire: Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
DSR-1	**.243 Win**	**Sport Rifle**	**2**	**5 clip**	**SS**	**7S**	**5.9**	**9/7 days**	**7,795 ¥**
DSR-1	**.308 Subsonic**	**Assault Rifle**	**2**	**5 clip**	**SS**	**9M**	**5.9**	**9/7 days**	**7,795 ¥**
DSR-1	**7.62mm NATO**	**Sniper Rifle**	**2**	**5 clip**	**SS**	**9S**	**5.9**	**9/7 days**	**7,795 ¥**
DSR-1	**.300 Win Mag**	**MMG**	**2**	**4 clip**	**SS**	**12S**	**5.9**	**9/7 days**	**7,895 ¥**
DSR-1	**.338 Lapua**	**HSR**	**2**	**4 clip**	**SS**	**14S**	**5.9**	**9/7 days**	**8,095 ¥**

- An extra loaded magazine can be stored in a slot ahead of the trigger guard.
- Muzzle brake negates recoil penalties in all calibers.
- Includes bipod.
- 29.53" (750mm) barrel available for .338 Lapua DSR-1. Use Heavy Sniper Rifle ranges. +300¥.

The AMP Technical Services' DSR-1 Rifle is "The most sophisticated and technologically advanced tactical precision rifle in the world." Designed from the ground up by AMP's technical team, this rifle meets or exceeds all mission requirements for a tactical precision rifle. One of the key designers for the DSR-1, Mr. K. G. Kirnstaetter, was also responsible for the design of Erma's SR-100 rifle. Now no longer produced, the SR-100 was known to be extremely accurate: giving sub 0.20 MOA groups (sub 0.20" at 100 yards).

The DSR-1 is the next generation and evolution of Erma's SR-100. Like the SR-100, the DSR-1 is phenomenally accurate. Factory representatives have consistently achieved 0.17" groups. Part of this accuracy is due to ultra rigid barrel support system. The Lothar Walther barrel is free floating and locked into the receiver via THREE locking screws. In addition, the bolt of the rifle has SIX locking lugs, which cam directly into the barrel. This system provides for a supremely consistent, strong, and tight lock up.

The DSR-1 also offers true and complete caliber interchangeability. The operator can change calibers within seconds by changing the bolt and the barrel. Significantly, no accuracy is lost, no matter how many times the barrel or bolt are changed. In addition, "wildcat" cartridges (with a maximum cartridge diameter of 0.590", and a maximum overall cartridge length of 3.810"), can easily be accommodated. Currently, the DSR-1 has caliber conversion kits available for .243, .308, .300 Win Mag, and .338 Lapua Mag.

Another advanced feature of the DSR-1 is its Bullpup design. This configuration offers several advantages, not seen in traditional rifle designs. First, since the chamber of the barrel is located behind the trigger, the bullpup design allows for the use of a full length barrel (25.6" in all calibers), while maintaining a short and compact overall rifle length (39"). Further, this design allows a straight, in-line barrel. Recoil forces are directed along a straight line, minimizing muzzle rise.

Several other unique features of the DSR-1 Rifle are its full length hard mounted scope rail (which allows for use of accessories such as night vision devices to be mounted in front of the rifle scope), suspension bipod system (offering full 3 axis rotation and greater stability), quick access spare magazine located on the rifle in front of the trigger, fully adjustable butt stock, maximum efficiency dual chamber muzzle brake (reducing recoil to minimal levels in all calibers), ambidextrous three position safety, adjustable 2-stage trigger, and adjustable cheek piece. All of these feature are standard.

When you compare these standard features, the quality, the durability, and the accuracy of the DSR-1 with any other rifle, you will come to the same conclusion that we did. The DSR-1 is the most sophisticated and technologically advanced tactical precision rifle in the world. It is no wonder that special forces such as the German GSG-9 have purchased the DSR-1.

AMP Technical Services

Suppressors

◂ back

Overview | Suppression

- Advanced Armament Corp.
- AWC Systems Technology
- DVC Armaments
- Knight's Armament Company

On the way...

- Brügger & Thomet
- BR-Toute Ky
- Gemtech
- OPS Inc.
- SWR Manufacturing
- Tactical Ordnance (TacOrd)
- TLG Technologies

Suppressors

Overview

While easy to use, the canon rules for silencers and sound suppressors may leave something to be desired. For example, there are several different types of suppressors out there, some may be very inexpensive to make yet don't perform all that well, while others are very expensive and produce state-of-the-art performance. Some may be very small, providing just enough of a reduction in sound pressure to keep the operator from incurring any hearing damage, while others may be designed to sustain the abuse of fully automatic fire.

Suppressors are sorted here by weapon class. Several different types may be available per weapon class. While the names belong to real suppressors, they are used here in an incidental fashion and are only meant to reflect a class standard and to give players a name to refer to them by.

For more detailed information on how firearm sound suppression works, please refer to the Suppression file located in the Basics section of this site.

The following stats may need some explanation.

Recoil Booster (RB): Some suppressors are too heavy to allow some recoil-operated pistols (particularly those using the extremely popular Browning tipping barrel form of short recoil operation) to cycle reliably without what is known as a "Recoil Booster", aka "Recoil Regulator", "Nielsen Device" or "Linear Inertial Decoupler". Suppressors listed with an (RB) include this device. When engaged, the Recoil Booster counteracts the weight of the suppressor during recoil, temporarily relieving the barrel of the extra mass attached to it. This allows the pistol to cycle reliably. However, if the recoil booster is used on a pistol that does not need it (read: any fixed-barrel form of operation), damage to the firearm and/or suppressor could result. Recoil Boosters can be turned on or off through the use of a Simple Action.

Caliber: This value represents the caliber of bullet the suppressor is designed to work with. More specifically, it represents the cartridge with which a given suppressor is designed to be used and consequently, the volume of propellant gas the suppressor is designed to neutralize.

> Less powerful cartridges of the same or smaller caliber may be used with these suppressors without penalty as long as the base Power Rating. For example, any "9mm P" suppressor can be used with any 9mm pistol cartridge (9mm Para, .380 Auto, 9mm Makarov, 9x21mm, 9x23mm, .357 SIG, etc...). Suppressors marked ".40 S&W" can be used with .357 SIG, 10mm Auto ammunition and so on.
>
> For pistol suppressors, if the cartridge used exceeds the base caliber's Power Rating by more than +1, apply a -1 penalty to the suppressor's effect. For example, using a "9mm P" suppressor (base Power Rating is 7) with a pistol chambered in .357 SIG or 9x23mm Winchester (base Power Rating is 9) results in a maximum effectiveness of +2/+3. This rule does not apply to increased Power Ratings derived from specialized bullet types such as Hollowpoint.
>
> For all other suppressors, if the cartridge used exceeds the base caliber's Power Rating by more than +3, apply a -1 penalty to the suppressor's effect.
>
> In either case, the suppressor's service life will be reduced if continually used in this manner.

Method: There are four basic suppressor design methods.

> A **Dry** suppressor uses a series of expansion chambers and permanent metal baffles that reduce gas volume, expansion and forward motion. Simply attach the can to the weapon's muzzle and you're good to go.
>
> The Wipe and Mesh (**WM**) system is an inexpensive design. It uses a series of expansion chambers filled with a wire mesh, designed to disrupt the motion of gases. Wipes work like baffles and are made of a flexible material such as polyurethane or neoprene through which the bullet passes. These elements degrade as the suppressor is used (-1 every 20 shots) and need to be replaced after about 50 rounds. Because the bullet comes in physical contact with the wipes, this type of suppressor cannot be used in conjunction with expanding ammunition. Reduce range 35% (x0.65).
>
> A Wet Technology (**Wet**) suppressor is mechanically similar to a dry suppressor, the difference being that it is also designed to house a few CCs of water. Water helps absorb heat energy from the propellant gases, making the suppressor quieter. However, a wet suppressor will cause a visual signature when water is vaporized and pushed through the muzzle. Performance degrades as water is forced from the suppressor (-1 every 30 shots, max -1). Gas-operated firearms do not work well with wet suppressors as the water tends to mix with powder residue and clog the weapon's gas system (GM discretion). Water may be added on the fly (even saliva may be used), through the suppressor's muzzle.
>
> An Artificial Environment (**AE**) suppressor includes a chamber near the barrel's muzzle filled with a light lubricating grease. The grease functions in a manner similar to the water in a wet suppressor, absorbing the heat of propellant gases. No visual signature occurs. Performance degrades slightly as the grease evaporates (-1 every 50 shots, max -2). The suppressor must be detached before grease can be added.

Mount: There are two basic ways to mount a suppressor to a weapon. Most require an extended barrel that has mounting surfaces machined directly into it. However, some weapons include a barrel shroud onto which the suppressor is designed to mount (the MP9 for example). Most pistols will require a new barrel that includes a mount.

> A **Thread** mount is the most common type of suppressor mount. It is used to screw the suppressor onto the weapon's barrel. If the threads twist in the same direction as the barrel's rifling, the suppressor will eventually come loose as the mount absorbs heat and expands while the barrel torques as a bullet moves through its rifling. Counter-threading cures this problem. Most pistols will use this type of mount because it does not interfere with their disassembly procedures. **MAC** and **UZI** mounts are particular types of thread mounts that are only found on those weapons (MAC mount will work on the Ingram Smartgun and Warrior 10). A thread mount requires one Complex Action to attach or detach the suppressor from the weapon.
>
> The **Quick Detach** or **Fast Attach** mount is a mount that is designed to allow very fast attachment or detachment from the host weapon. All QD mounts require one Simple Action to attach or detach the suppressor from the weapon. The following are examples of Quick Detach mounts.
>
> > A **Snap** mount is a type of quick detach mount consisting of two vertical divets cut into the weapon's extended barrel, onto which the suppressor locks. The suppressor simply slides over the barrel and is locked on by a lever. This type of mount is one of the sturdiest, but is almost exclusive to pistols because it does not interefere with their disassembly procedures.
> >
> > The **3-Lug** mount was developed by SCRC for the Heckler & Koch MP5 submachine gun. The suppressor is pushed over three sequential lugs and rotated 60 degrees. A spring inside the suppressor then pushes the suppressor forward, locking it onto the lugs.
> >
> > Other types of Quick Detach (**QD**) mounts exist, mostly for use on assault rifles. These mounts are usually designed to interface with a specially designed flash suppressor or other mounting interface attached to a barrel's muzzle.

Effect: Displays the value of the modifier that should be applied to Perception Tests when the suppressor is attached to a weapon of the class it is designed for. The effectiveness of some suppressors degrades as elements within the suppressor decompose. (See Method.) An entry with two values (+3/+4) indicates that the suppressor is a "wet technology" design. The first value represents its effectiveness while dry, the second represents its effectiveness when water is added.

See the Rules for Suppression for more information.

Pistol	Caliber	DC	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
WM-22	.22 LR	5L	WM	Thread	-2	+2	0.4	2/24 hrs	50
SOTA-22	.22 LR	5L	Dry	Thread	-2	+4	0.18	6/72 hrs	325
WM-38	.380 Auto	6L	WM	Thread	-2	+2	0.4	2/24 hrs	50
SOTA-38	.380 Auto	6L	Wet	Thread	-2	+4/+5	0.06	6/72 hrs	550
SOTA-38S	.380 Auto	6L	Wet	Snap	-2	+4/+5	0.2	6/72 hrs	700
WM-945	9P/40/45	8M	Wet	Thread	-2	+3/+4	0.28	6/72 hrs	695
SOTA-9S	9mm P		Wet	Snap	-2	+3/+4	0.2	6/72 hrs	695
Entry	.40 S&W		Wet	Thread	-2	+3/+4	0.2	6/72 hrs	595
Eclipse	.45 ACP		Wet	Thread	-2	+3/+4	0.3	6/72 hrs	595
SOTA-45	.45 ACP		Wet	Thread	-2	+3/+4	0.3	6/72 hrs	1,470

SMG	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Avenger	9mm P	Wet	Uzi	-2	+2/+3	0.39	6/36 hrs	595
CAC9	9mm P	Wet	MAC	-2	+2/+3	0.56	6/36 hrs	300
Defender (UMP)	9P/40/45	Wet	QD	-1	+2/+4	0.34	6/36 hrs	695
Navy	9mm P	Wet	Thread	-1	+2/+4	0.21	6/36 hrs	595
Raptor	40/10mm	Wet	3-Lug	-1	+2/+4	0.34	6/36 hrs	495
Striker 2	9mm P	Wet	3-Lug	-1	+2/+4	0.23	6/36 hrs	650

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Cyclone	7.62x51mm	Wet	Thread	-1	+3/+4	0.89	6/36 hrs	650
G36-SD	5.56mm	Dry	Thread	-1	+3	0.54	6/36 hrs	700
M4-2000	5.56mm	Dry	QD	-1	+3	0.66	6/36 hrs	650
M47-2000	7.62x39mm	Dry	QD	-1	+3	0.66	6/36 hrs	650
Ranger	5.56mm	Dry	Thread	-1	+3	0.52	6/36 hrs	550

Manufacturers

There are several firearm suppressor manufacturers to be found around the world. The following is a somewhat abbreviated list of those manufacturers. This information may prove useful for availability purposes depending on where your team is running.

Company	Location
Advanced Armament Corporation (AAC)	Lilburn, Georgia CAS
Arms Tech	Phoenix, PCC
AWC Systems Technology (Special Technologies Group, Inc)	New River, PCC
Brügger & Thomet AG	Thun, Switzerland
BR-Toute (Reflex Suppressors)	Joensuu, Finland
Capital City Firearms (CCF)	Richmond, Virginia CAS
DVC Armaments (GG&G, Inc)	Tucson, PCC
Gemtech (Gemini Technologies, Inc)	Boise, Sioux Nation
Knight's Armament Company (KAC)	Vero Beach, Florida CAS
LaFrance Specialties	San Diego, Aztlan
OPS Inc.	Shingletown, CFS
Percy Engineering Services Ltd. (PES)	Auckland, New Zealand
Sound Technology (Soundtech)	Pelham, Alabama CAS
SRT Arms	Tempe, PCC
Surefire Suppressors	Fountain Valley, CFS
Southeastern Weaponry Research (SWR)	Evans, Georgia CAS

Ammunition

Ammunition in General
Cartridges and Damages Codes
SR Firearm/Cartridge Table
Regular Ammunition

Advanced Ammunition Rules
Ammunition by Caliber

Specialized Ammunition
APDU/APDSDU
Duplex Ammunition
Expanding Bullets
Explosive Ammunition
Frangible Ammunition
Incendiary/API
Match Ammunition
Reverse Ogive/APRO
SLAP/APDS
Subsonic Ammunition

Shotgun Ammunition
Dragon's Breath
Flare
Flechette
Lockbuster
Mini-Grenade

Grenades
Air-Timed Grenades
Grenade Launcher Adapters

Ammunition in General

Ammunition is one part of a firearm that Shadowrun writers have gone pretty far overboard with, in my opinion. Good enough for fun I suppose, but not enough to satisfy my sense of reality. Weapon caliber, functionality, and range of the ammunition itself have all been disregarded in the interest of simplicity. Understandable. But as far as I'm concerned, I'd like a better, more realistic explanation for some of the ammunition produced for the system.

Disspelling and Explaining

From page 276 of Shadowrun, Third Edition: ***"Many weapons offer two versions, for standard loads or for caseless ammunition."*** This is not a very well researched statement. Offering a wide variety of weapons using both principles would not be very cost-effective for the manufacturer of the weapon. The entire system of operation between the two principles is very different. Not to mention the implied politics involved with allowing the general public to have access to such weapons. For more information on caseless ammunition, please click here.

Another disagreeable statement occurs on page 279: ***"...each kind of gun can trade ammunition with another of its class."*** If you're a GM and want to let your players get away with that purely for simplicity's sake, that's fine. But it has no basis in reality and nullifies a great way for gamemasters to screw their players! Firearms are designed for different uses. Even firearms of a specific class are designed for different things. For instance, it wouldn't be a good idea to use a rifle chambered in .243 Winchester for hunting elk. There simply isn't enough bullet there to affect the animal reliably and quickly. A .338 Winchester Magnum would be a much better choice. These cartridges, both found in rifles of the Sport Rifle class, cannot be interchanged.

There are far more choices for ammunition than just APDS, Flechette, Explosive, Gel, Tracer, and "Regular". There are shaped bullets that use air pressure to produce more stopping power (such reverse ogive), there are bullets designed to destabilize and tumble after they hit a certain medium (read: flesh) in order to cause more damage (such as the 5.45x39mm Soviet's bullet), and bullets designed soley to disrupt tissue while causing the least amount of collateral damage (such as the Glaser Safety Slug).

Most of FASA's published ammunition for small arms is based off of ammunition which is used on a much larger scale, such as anti-materiel, anti-tank and artillery ammunition. Some of these types of ammunition would be rather useless on a small arms scale simply because there isn't enough space to fit the active materials into such a small bullet. Regardless, I'm going to try and explain these ammunition types.

A Brief Explanation of Ammunition Types

APDS stands for **Armor Piercing Discarding Sabot.** (That's *say-bow*, French for "shoe".) **The term "Armor Piercing" is not synonymous with APDS.** APDS was orginally designed as an anti-tank or anti-armor munition. It is used today in the Phalanx Close-In Weapons Systems (CIWS) for ship-based missile defense, and in the smallest form that I'm aware of, the 7.62mm Saboted Light Armor Penetrator, or SLAP round (US M948), very similar to the .50 caliber BMG SLAP round (US M903) used in the US M2 heavy machine gun.

An interesting fact for people who would use ballistic forensics to match a bullet to its gun, *a discarding sabot bullet does not show any rifling characteristics*. The sabot itself is what comes in contact with the barrel, and it discards from the bullet prior to impact.

For more information, click the SLAP/APDS link to your left.

Flechette is a broad term. Literally translated, it means "little arrow". It could mean a single, smaller projectile is used in a larger casing (as in a discarding sabot load), or it could mean numerous small projectiles in a single casing (similar to shot used in shotguns). It always means that one end of the projectile is pointed and meant to pierce the target.

As flechettes are explained in Shadowrun, the ammunition would be nearly useless beyond a few meters.

There are two ideas which we can use to explain **Explosive** ammunition. The first is **Explosive-tipped bullets**. Explosive-tipped bullets are essentially hollowpoint bullets with an explosive element designed to dramatically and rapidly enhance bullet expansion upon impact. (I would say this covers standard explosive ammo per Shadowrun rules.) The second are **Explosive bullets**. Explosive bullets are are traditional micro-grenades that cause the whole bullet to be blown apart on impact. (EX explosive per Shadowrun rules.)

Like most ammunition in Shadowrun, explosive ammunition is based off of real ammunition of a larger scale than most small arms cartridges. The smallest caliber explosive round I'm aware of is the .50 caliber (BMG) MK211 MOD 0 High Explosive Incendiary Armor Piercing (HEIAP) round used in the USMC M82A1A Special Application Scoped Rifle. Explosive ammunition should only be available in large diameter small arms bullets, such as .45-.50 caliber. The larger the bullet, the more explosive can be packed into it, giving that load a greater explosive effect. In smaller caliber bullets, the overall wounding effect would be no greater than using a much cheaper hollowpoint or frangible bullet, or a larger caliber round.

Incendiary ammunition is designed to ignite flammable materials after impact. The immense heat created by friction at impact will ignite a slow-burning chemical incased inside of the bullet. The bullet itself does not explode.

Gel rounds have a lot more potential to kill a person than is let on, as does anything coming out of the business end of a gun. The gel is lighter than a bullet, so wind resistance slows it down considerably. This also flattens it out, allowing it to smack against its target with relatively low kinetic energy.

These types of loads aren't usually available for anything but shotgun or grenade launcher-sized cartridges due to the fact that range and power would be severely limited with a conventional-sized bullet load. Range should be reduced by half for gel rounds.

Tracers are available for all kinds of ammuntion and are usually reserved for machine guns for the purpose of aiming. Tracers are an exclusive category of ammunition. There are such things as Armor Piercing Tracer munitions, Incendiary Tracer munitions, and Armor Piercing Incendiary Tracer munitions.

Rifle Velocity and Armor Penetration

Rifles are designed to fire a bullet over a much longer range than pistols. This is accomplished by a higher powder weight to bullet weight ratio, with the end result being that the bullet leaves the rifle at a much higher velocity. Rifle bullets are also shaped to better cut through the air, meaning that air resistance doesn't affect a them as much it does a pistol bullet. This helps rifle bullets retain velocity. In addition to providing a much longer effective range, these attributes also help in penetrating body armor.

When a bullet is fired at body armor, the armor attempts to catch the bullet in a web of very strong synthetic fibers, causing the bullet to deform and displace its energy over a much larger area than it would have otherwise. Compared to rifle bullets, pistol bullets are relatively slow, heavy, bluntly shaped, and most often are designed to expand on impact with the target in the interest of producing a larger wound cavity. These properties work against the bullet when it impacts body armor, allowing the armor more surface area to catch the bullet and displace its energy.

When a rifle bullet impacts body armor, a relatively large amount of kinetic energy, derived through velocity, is focused on a very small area at the point of the bullet. Focusing that energy on such a small area helps the bullet defeat the individual fibers of the body armor material, causing it to tear, allowing the bullet to pass through it. This effect is only magnified when the bullet is of a non-expanding type, or even worse, an armor-piercing type.

For this reason, as a very simple rule, I recommend applying a flat **x0.5 armor penetration modifier** to all rifle cartridges firing non-deforming bullets at a velocity above 2300 feet per second. The effects of AP bullets are added to this modifier. More in-depth rules can be found in the Ammunition By Caliber section.

Adding Structure

I have devised a table used to determine ammunition "swappability" in current Shadowrun firearms. You can check it out by following the link below, or clicking the link to your left. I also have a table designed to show applicable Damage Codes per cartridge, instead of the weapon itself having its own Damage Code. While this makes sense for melee weapons, it does not carry over well to firearms.

- Ammunition By Caliber (Advanced Rules)
- Cartridges and Damage Codes
- Current Shadowrun Firearm Cartridge Table

Additionally, here is a picture of a few pistol cartridges, shown as a size comparison.

Bang Bang, You're Dead. Hole In Your Head.

This section is designed to provide very in-depth information and advanced damage rules for the Shadowrun game system. The Damage Codes represented here will supercede those posted in the Cased Cartridges and Damage Codes file.

An effort has been made to keep the rules in this section as close as possible to the current Shadowrun system. I did not intend to make the Shadowrun damage system any more realistic by introducing these rules (obviously, that is impossible), I merely intend to bring a more practical level of leathality to firearms within the system, and to give you an idea of where certain cartridges fit in the real world, if you're not very firearm-savvy. I don't expect many people to use these rules, but information is provided that may be useful beyond the damage codes. You can always swap the posted damage codes with your own. Proceed with that in mind.

If you haven't yet, for the love of whatever you consider to be of the highest order in your life at this moment, read Basics of Suppression and the Suppression and Velocity Control rules before you get any further in this section. Go. Now. Take a few minutes and read both of them. They will make this section a bit easier to comprehend.

Cartridge Tables

Each cartridge has its own table which displays a wealth of information, including:

- The cartridge's name, plus any alternate names it might be known by.
- A short description and notes on the cartridge's development history and/or modern uses.
- Weapon Classes the cartridge can be used in, along with Base Damage Codes for each Weapon Class. Weapon classes are considered a function of range rather than a specific Damage Code. You can click the following link to review my revised Weapon Class Ranges.
- Primary bullet type.
- Range of bullet mass commonly used in the cartridge, from lightest to heaviest, expressed in *grains* (gr).
- Range of muzzle velocities the cartridge is commonly loaded to, from fastest to slowest, expressed in *feet per second* (fps).
- Type of case used.
- Overall length of the cartridge, expressed in both *inches* (in) and *millimeters* (mm).
- Maximum diameter of the cartridge, expressed in both *inches* (in) and *millimeters* (mm).
- Whether or not it is possible to reload the cartridge.
- In what quantity the cartridge is commonly sold at retail, per box.
- Conceal Rating per box of ammunition.
- Effects of suppression on the cartridge. (I wasn't kidding. Read this and this.)
- Additional notes regarding the cartridge's use. Most rifle cartridges include an automatic armor penetration modifier depending on their velocity and the type of bullet they fire. Basically, rifle cartridges tend to penetrate armor much better than handgun cartridges. See below.
- A list of bullet or payload types available for the cartridge, with adjustments to the weapon's Base Damage Code and general performance.
- And finally, how much each loading costs, per box.

Modifiers and Penalties

- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive +1 Power if barrel length exceeds 8" (203mm). This bonus is reflected under "Submachine Gun" weapon type entries because it is assumed that submachine guns have barrels greater than 8" (203mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing pistol and revolver cartridges (light, medium or heavy) receive -1 Power if barrel length is 2.5" (63mm) or less. This penalty is reflected under "Hold Out" weapon type entries because it is assumed that hold out pistols have barrels less than 2.5" (63mm) in length. (Occasionally -2 Power is applied if velocity is particularly important to a cartridge's ballistics.) This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing intermediate power rifle cartridges (e.g., .223 Remington) receive -1 Power if barrel length is less than 12" (304mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels less than 12" (304mm) in length. This may not always be the case, so pay attention when designing your own weapons.
- Weapons firing full power rifle cartridges (e.g., .308 Winchester) receive -1 Power if barrel length is less than 16" (406mm). This penalty is reflected under "Carbine" weapon type entries because it is assumed that carbines in these calibers have barrels lengths of 16" (406mm) or less. This may not always be the case, so pay attention when designing your own weapons.

Rifle Velocity and Armor Penetration

As explained on the main page of the ammunition section, I generally recommend applying a flat **x0.5 armor penetration modifier** to all rifle cartridges firing non-deforming bullets at a velocity above 2300 feet per second. The effects of AP bullets are added to this modifier.

In the near future, I will be adding an armor penetration modifier to each rifle cartridge entry in order to make these rules more realistic.

I probably shouldn't let you see this stuff without mentioning that a lot of the information was gathered from ***Cartridges of the World*** by Frank C. Barnes and M. L. McPherson (8th and 9th Editions).

As always, your input is appreciated. If you have any ideas about adding certain cartridges, real or fictional, drop me a line. Send mail to raygun2112@hotmail.com.

Ammo By Class

Bang Bang | Suppression

Light Pistol
Medium Pistol
Heavy Pistol
Revolver
Submachine Gun
Carbine
Assault Rifle
Sport Rifle
Sniper Rifle
Suppressed Rifle
Anti-Matériel Rifle
Machine Gun

Caseless Cartridges

Weapon Class Ranges

Pistol Cartridges

Rifle Cartridges

◀ back

- 5.45x39mm Soviet
- .22 Long Rifle
- .22 Hornet
- .223 Remington (5.56x45mm)
- .22-250 Remington
- 5.8x42mm Chinese Type 95
- 6x48mm Optimum
- .243 Winchester
- 25-06 Remington
- 6.5x55mm Swedish Mauser
- .260 Remington
- 6.8x43mm SPC
- .270 Winchester
- 7x57mm Mauser
- 7mm-08 Remington
- 7mm Remington Magnum
- 7.62x39mm Soviet M43
- 30-30 Winchester
- .303 British
- .308 Winchester (7.62x51mm)
- 7.62x53Rmm Russian
- 30-06 Springfield
- .300 Winchester Short Magnum
- .300 Winchester Magnum
- 8x57mm Mauser (7.92mm)
- .338 Winchester Magnum
- .338 Lapua Magnum
- 9x90mm MEN
- 9.3x64mm Brenneke
- .375 Holland & Holland
- .376 Steyr
- .404 Jeffrey
- .408 Cheyenne Tactical
- .416 Rigby
- .416 Remington Magnum
- .444 Marlin
- .45-70 Government
- .450 Marlin
- .458 Winchester Magnum
- .470 Nitro Express
- .50 Browning Machine Gun
- 12.7x108mm Soviet
- 14.5x114mm Soviet
- .585 Nyati
- .600 Nitro Express
- .700 Nitro Express

Anti-Matériel Rifle

20x83mm MG151

Weapon Type	Base Damage Code
Assault Cannon/AMR	20D

Primary Bullet: HEDP	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 1,700 grains	Case Length: 83mm	Count/Box: 100
Typical Velocity: 2,360 fps	Primer: Centerfire	Conceal/Box: 3

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 100
Armor Piercing Discarding Sabot	APDS	3,600 ¥
High Explosive (Dual Purpose, Fuzed)	See Below	3,800 ¥
High Explosive Armor Piercing (PIE)	See Below	3,500 ¥
Incendiary	Incendiary Rules	+200 ¥
Tracer	Tracer rules	+100 ¥

Description

Originally an anti-aircraft munition used in German attack aircraft during WWII, the MG151 cartridge made waves in the 1990's in a new series man-portable of anti-matériel rifles.

20mm (.787") is widely considered to be the smallest caliber which can deliver a useful chemical payload to lightly armored targets.

20x83mm High Explosive Dual Purpose (HEDP) Rules

This is an anti-vehicle munition.

+4 Power Rating. **Non-hardened body armor has absolutely no effect against this ammunition**.

Fuse can be set to *avoid* detonation on impact, in which case the +4 Power Rating is not in effect, and only kinetic energy is used to damage the target. Use the weapon's base Damage Code. As an additional rule, the GM may roll 2D6. On a result of 2, the round explodes on impact, regardless of whether it was set to or not.

Incendiary and/or tracer effects can be added.

20x83mm High Explosive Armor Piercing (HEAP) Rules

This is an anti-vehicle munition.

+4 Power. Treat as APDS (x0.5 Armor) against hardened armor targets, including vehicle armor. **Non-hardened body armor has absolutely no effect against this ammunition**.

Incendiary and/or tracer effects can be added.

Caseless Ammo

Please don't send me any e-mail about these rules. I know everyone had their own house rules for Shadowrun, and that's exactly what these are. These are the rules that work best for me and my gaming group. Maybe you'll like them too.

Hit Location

When a character is hit by any attack that is not a Called Shot, his player or the game master can determine the location at which contact occurs by rolling 2D6. This will allow a more accurate representation of possible Armor Code modifiers for different armor types. (Obviously, this rule is designed to simulate damage by allowing body armor modifiers to be bypassed, as the part of the body that is hit may not be covered by armor.

Below is a table explaining what the number rolled means.

Number Rolled (2D6)	General Location
2	Head
3	Left Arm
4	Left Leg
5	Chest/upper back, right side
6	Chest/upper back, left side
7	Abdomen/lower back, right side
8	Abdomen/lower back, left side
9	Right Leg
10	Right Arm
11	Groin/Buttocks
12	Roll Again

A more detailed set of rules involving hit locations and armor can be found here. These pages were hijacked from tricade.de (Andy's Shadowrun Page), which no longer hosts them.

Physiological Shock

This rule was created to reflect the fact that a character might freeze up and not be able to react in a rational manner as fast as normal due to the phenomena known as shock. *A potentially fatal physiological reaction to a variety of conditions, including illness, injury, hemorrhage, and dehydration, usually characterized by marked loss of blood pressure, diminished blood circulation, and inadequate blood flow to the tissues.*

In game terms, shock can occur only after receiving a physical wound. This test should be rolled after **each wound** received **above Moderate** that has **already been resisted**.

The character rolls his Willpower Attribute against a Target Number of 3, plus Wound Penalties (+2 for Moderate, +3 for Serious, etc...). Applying this rule to a Light Wound is the GM's option. Obviously, this rule does not apply to Deadly Wounds because after you take the damage, your character is, at the very least, unconscious.

If no successes are generated, the character is not allowed to act on her next Action because of overwhelming shock. (Also see Knockdown, SR3 p.124.) She can, however, react on her Action on the next Initiative Pass. Only one success is needed to bypass Sudden Shock.

Tailchaser, a Feathered Serpent shaman, gets smashed in the face with a chain by Tango, a Street Samurai. She resists the attack normally. Unfortunately for Tailchaser, Tango rolled really well, and Tailchaser's player, well, she didn't. Tailchaser takes a Moderate Wound.

Tailchaser's player then rolls Tailchaser's Willpower (6) against a Target Number of 5 (3, plus her Moderate Wound Penalty). She comes up with 2, 3, 3, 4, 5, and 6. 2 successes. Now Tailchaser is so bad ass, the chain to the noggin doesn't phase her one bit. She prepares to cast Slay Punk Bitch at poor Tango on her next Action.

However, Tango's buddy, Ram, goes before she does. He also decides to lay down the smack on Tailchaser, with a lead pipe. She again resists the attack normally. Ram didn't roll quite as good, inflicting only a Light Wound, kicking up Tailchaser's damage straight to Moderate, with a Wound filled.

Parlez vous "ass whoopin"? Tailchaser's player again rolls Tailchaser's Willpower against a Target Number of 5. This time she gets 1, 1, 2, 3, 4, and 5. No successes. Uh oh. Tailchaser feels the brunt of the lead pipe, and the attack dazes her momentarily. She can't snap out of it quick enough to act on her next Action. Good thing Tailchaser's got Jan a-coming to avenge her with her HK227!

Certain Powers, such as Damage Compensators and Trauma Dampers can reduce if not completely bypass the Wound Penalties, dependent on their level. Pain Editors bypass Wound Penalties entirely. (See the Shadowtech Sourcebook, pages 24, 26, and 29 respectively for more information and rules on these Bioware enhancements.)

Also, characters may purchase a new Edge called **Combat Experience**. This edge was created to demonstrate a character's uncanny combativeness and ability to think things through under extreme fire. It also balances the fact that someone who has been trained to deal with being physically attacked or shot at may react better to being injured.

Dodging with Reaction

Dodging a bullet should be almost impossible. No matter what your Quickness Attribute is, or how much cyberware you have, a bullet will always be faster than you, no matter what.

First, in order for a character to dodge a ranged ballistic attack, he must fit two criteria. He must be aware that the attack is coming, and he must have space available to dodge into.

A Perception Test should be applied if the attack is not apparent. If he fails the Perception Test, he is not allowed to dodge. If there is no space available to dodge, the character is obviously not allowed to dodge at all.

If he has passed the Perception Test and has space to dodge into, his Reaction Attribute is used to apply modifiers to the attacker's Success Test. Use the table below to apply the appropriate modifier.

Dodging Character's Reaction Attribute	Attacker's Target Number Modifier
1-3	+2
4-6	+3
7-12	+4
12+	+5

-1 per 3 rounds fired from a burst-fire or fully-automatic weapon.
-1 per meter of shotgun spread at the target's position (see Shotguns, SR3 p.117).
-The target's Damage Modifiers.

Jan looks around the corner on her Action, and sees Tango and Ram beating up on her friend, Tailchaser. She decides to pump a burst into each of them. Her first target is Ram, who doesn't notice a thing except that he just beaded pipe Tailchaser on the head with a lead pipe. Jan looks around the corner, and Ram doesn't stand much of a chance, being unarmored and all. Vaya con Dios, Ram.

Considering that Jan just whacked Ram, the GM decides to allow Tango to make a Perception Test. Tango rolls his Intelligence Attribute (5) against a Target Number of 4. (Base of 4, +2 because it distracted (his buddy just got shot a lot), -2 Jan is partially hidden, -4 he hears the burst-fire). He comes up with 4, 4, and 5. Boy does he ever notice! He decides to jam the hell out of the way.

Jan decides to shoot him for doing that. He has space to dodge into (behind a pillar), and a Reaction Attribute of 5, giving Jan a +3 Target Number modifier in order to hit Tango. Tango is 10 meters away from Jan. Short Range for her HK227 (Base Target Number of 4). It's not particularly well-lit in here (Partial Light, +2), but that just makes it easier for Jan to see the strobe red dot from her laser Sight (-1). However, Tango is trying really hard to get out of the way (+3 for his Reaction Attribute), but she's firing a burst on her 227's trigger, firing a 3-rd burst and 3 (Burst fire, -1, no TN modifiers due to gas venting). So, the Target Number ends up being 7. Jan's player rolls 6 dice (4 for her SMG Skill, plus 4 from her Combat Pool), getting 2,4,4,5,5,6,6, and 6. Three successes, making the Damage Code 10D. Ouch.

Tango then rolls 8 dice for his Body Resistance Test (Body of 5, plus 3 from his Combat Pool) normally, subtracting his Ballistic Armor Code (Armored Jacket, 5) from the Power of the attack, making the Target Number to resist damage 5, and needing 6 successes to stage it down to nothing. He gets 1,2,3,3,5,5,6, and 6. Four successes. Tango takes a Moderate Wound.

New Weapon Class Ranges

Type	Short (4)	Medium (5)	Long (6)	Extreme (9)
Hold-out	0-2	3-10	11-20	21-25
Medium Pistol	0-5	6-20	21-40	41-60
Heavy Pistol	0-10	11-20	21-50	50-100
Light Carbine	0-20	21-50	51-100	101-250
Carbine	0-50	51-150	151-250	251-350
Heavy Sniper Rifle	0-150	151-350	351-800	801-1500
Anti-Materiel Rifle	0-100	101-300	301-900	901-2400

Click here to view complete range tables.

Suppression and Velocity Control

Please follow this link to Rules for Suppression.

Conceal Ratings

The Conceal Rating system in Shadowrun is a bit screwy. Here's some general guidelines you can use to clear things up.

Value	Base Conceal Rating for weapon type	Additional weapons covered
2	Full-sized rifles or shotguns with non-folding or open folding stocks.	Compact machine guns.
3	Submachine guns and carbines with open stocks.	Combat shotguns with stock folded.
4	Compact carbines and submachine guns, very large pistols.	Submachine guns and carbines with stocks folded.
5	Large-frame heavy pistols and machine pistols.	Competition pistols.
6	Most heavy, medium, and light pistols.	Some not-so-compact pistols.
7	Compact pistols.	Some subcompact pistols.
8	Low-capacity subcompact pistols.	Clip or magazine-fed Hold-Outs.
9	Light-caliber Hold-Outs.	Breech-loaded Hold-Outs.

Overpenetration (By Rain, edited by Raygun)

The desired effect for any small arm bullet hitting a living target is for the bullet itself to stop inside of the target, thereby expending all of its energy disrupting tissue, and inflicting the most possible amount of damage. If a bullet is moving too fast, friction may not slow it fast enough, or the bullet may not yaw or fragment substantially inside of the target giving it time to expend that energy. If the bullet doesn't stop inside of the body, it **overpenetrates**, meaning it moves *through* the target until something else causes it to stop. On to the rule...

Anytime a character receives a **Serious wound** (but not Light, Moderate or Deadly) from a single firearm attack, they must roll a D6. On a roll of 3 or less, the round overpenetrates.

Anytime a weapon's Power Rating exceeds the defender's **Body + Ballistic Armor Rating** (or **Body x 2** if the target is unarmored), the bullet **automatically overpenetrates**. This rule only applies if the projectile is of a type capable of overpenetrating the target, i.e. regular, hollowpoint, explosive, armor piercing, or armor piercing discarding sabot bullets. Gel rounds would be exempt, as would arrows and shot rounds. (Alternately, this rule could be modified so that any 1's rolled by the attacker would be added to the weapon's Power Rating for determining overpenetration.)

For simplicity's sake, when a round overpenetrates, it is considered to exit the defender's body in the same direction it was travelling originally. Anyone or anything standing within a meter of the defender and directly in the bullet's path will automatically be hit. Reduce the Power Rating of the second attack by half the weapon's unmodified Damage Code (rounded down), and reduce the Damage Level by 1 (For instance, 9M becomes 4L after overpenetration), -1 each additional meter.

If the target is not wearing armor and the attacker rolls beyond Deadly damage (which would normally serve to ignore 1 point or Armor Rating), each staging level (two successes) beyond Deadly adds 1 point to the power of the second attack.

Ralfie the Lizard is a member of the Halloweeners who has recently pissed off a rival gang leader by having some rather intimate relations with said gang leader's girlfriend. Vinnie, the leader of the Stillettos, has decided to have one of his boys take out Ralfie real sneaky-like. (To Ralfie, that is.)

Vinnie's boy Klack is the guy for the job. He's found out that Ralfie is at a local club, so Klack grabs his Remington 900 and finds a spot to snipe from across the street. Ralfie comes swaggering out of the front door with... with Vinnie's girl, Sheila! Damn shame. This is gonna hurt, Ralfie.

Klack is about 200 meters away, which is Medium Range (base Target Number of 5) for Klack's Remington 900. But he's got a scope (range drops to Short, TN = 4), and he decides to spend a little time aiming at Ralfie's chest (Simple Action, -1 TN, final Target Number is 3). Klack rolls 6 dice (3 for his Skill Rating, plus 3 for Combat Pool) getting 2, 3, 5, 5, 5 and 11. 5 successes, staging damage up to 9D, and ignoring a point of armor.

Ralfie, being the stud that he is, has opted to go armor-less on tonight's outing. Too bad for Ralfie. Ralfie's player rolls 3 dice (for his Body Attribute, but since Ralfie won't be aware of the attack, he gets no help from his Combat Pool). He rolls 4, 5, and 11! Ralfie takes a Deadly wound. Good bye, Ralfie. The bullet has a Power Rating of 9, which is 3 times Ralfie's body rating. The round automatically overpenetrates. Uh oh.

Klack was a little too intent on whacking Ralfie that he didn't think at all about the bullet actually going through *him. The bullet passes through Ralfie, and hits Sheila with a Damage Code of 5M (half the Remington 900's Power Rating rounded down, -1 Damage Level because the bullet passed through an unarmored Ralfie first, +1 power because Klack rolled beyond Deadly).*

Boy is Vinnie gonna be pissed. He sure does love that Sheila...

Extended Rules for Overpenetration

Rules for angle of deflection. Drawing a blank here. Anyone interested in helping? Talk to me.

Explosive Ammunition Through Barriers

Firing explosive ammunition through barriers is not something you'd really want to do, but there could be occasions where this is unavoidable. Generally, explosive ammunition for small arms is pyrotechnically initiated. This means that when the bullet impacts a medium of a specific rigidity, heat caused by the friction of impact causes the explosive mixture to ignite.

As a general rule, if the barrier's rating is equal to half the weapon's base Power Level, the bullet explodes on impact with the barrier.

Extended Rules

Pistols, submachine guns, and light rifle bullets aren't going to be able to contain a fuse to selectively ignite the explosive. In this case the explosion will be initiated by the friction of impact with the target. (This is called PIE; Pyrotechnically Initiated Explosive.) Use the above rule for explosive and EX explosive ammunition in all pistols, submachine guns, assault rifles, sport rifles sniper rifles, light machine guns and medium machine guns.

Heavy ammunition such as the kind fired by heavy machine guns, heavy sniper rifles and assault cannons would fire a projectile large enough to have a fuse attached to a highly stable explosive which can be set (either at manufacture, or user-adjustable in the case of assault cannon shells) to explode in pretty much any fashion you want. The fuse could be set to initate the explosion slightly after impact, or at graze... In which case that barrier you're firing through has less of a chance of causing the explosive to ignite.

In this case, if the barrier's rating is equal to the weapon's base Power Level, the round explodes on impact with the barrier.

Rate of Fire (ROF)

Rate of fire for automatic weapons are pretty generalized in Shadowrun canon rules. Here's how you can make them a little more realistic.

Since characters must expend a Complex Action to fire in fully automatic mode, take an average weapon of type, use it's average full-auto rate of fire (usually expressed in rounds-per-minute), divide that by 60, then multiply that number by however long you think a Complex Action should be, in seconds. What's left is the rate of fire, in rounds per Complex Action.

In the firearms section of this site, there is an entry labeled **Cyclic Rate** for weapons that have a fully automatic mode. You can use this number to determine ROF for similar weapons in your campaign. If you don't want to go to the trouble, there are some averaged suggestions in the table below.

Weapon Type	Rate of Fire	Complex Action = 1.5 seconds	Complex Action = 2 seconds	Complex Action = 3 seconds
Assault Rifles	800	20	27	40
Machine Guns	850	21	28	42
Submachine Guns	700	17	23	35
Automatic Shotguns	240	6	8	12
Miniguns	2000-6000	50-150	66-200	100-300
	Rounds per Minute	Rounds per Complex Action		

Don't forget about recoil...

Movement Modifiers and Scopes

Using a scope to aim at a target is generally not too difficult if the target is stationary. When the target is moving, it's a completely different story. Especially at long and extreme ranges.

To simulate the difficulty in acquiring and shooting a moving target at close range while using a scoped rifle, **reverse scope bonuses per level of magnification (+2 modifier with a level 2 scope) and add it to the movement modifier if the target is less than 20 meters from the attacker.**

Apply **x3 modifier at long range** and a **x4 modifier at extreme range**. There is no additional modifier from 21 meters to medium range. Apply scope bonuses normally at these ranges.

Manual Operation

All forms of manually operated firearms are Single Shot Mode within the scope of the game, meaning that they can only be fired once per Combat Phase. This is because the weapon must be cocked before it can be fired, so requiring a "ready weapon" Simple Action. Thus, one Simple Action is required to cock the weapon and another Simple Action is required to fire it. Most manual actions cock the weapon while chambering a fresh round.

Single action revolvers such as the Ruger Super Warhawk and the Colt Single Action Army also fall under this definition. Alterately, some single action revolver designs can be fired rapidly through the use of a technique called "fanning." In this technique, the trigger is held down while the hammer is swiped with the free hand. **Fanning** requires a Complex Action. A character may fan a number of rounds equal to their Quickness rating. Apply recoil modifiers normally. Obviously, handling a gun like this does nothing for accuracy. Apply an additional +2 modifier per shot to simulate the effects of slapping the top of the revolver. This can technique can be used as suppressive fire.

Single action pistols such as the M1911 must be cocked manually before the first shot can be fired. The reciprocation of the slide automatically cocks the hammer for successive shots. Alternately, the M1911 can be carried "cocked and locked", meaning that the hammer is cocked and the safety is on. Because of the position of the safety in relation to the natural firing position of the hands, disengaging the safety on the M1911 prior to firing is a Free Action.

Recoil and Reaction

This rule is essentially the same as the Recoil and Strength rule found in FOF.83, but the more appropriate Reaction attribute is applied to the rule.

Quick reflexes far more important than strength when it comes to controlling recoil. Quickness is required to control the recoiling pistol and realign the sights for the next shot as fast as possible. Intelligence is required to keep from over-cor
recting. Thus, Reaction is the ideal attribute to apply to this rule.

Another advantage in controlling recoil is the sheer mass of the person pulling the trigger. People with heavier bodies can absorb more energy from recoil with the benefit of less motion. **Add both the Body and Reaction attribute ratings together, then divide them by two.** Take the total and apply it to the table below.

Reaction	Recoil Reduction
1-4	None
5-6	-1
7-8	-2
9-10	-3
11-12+	-4

As we all know, gun bunnies in Shadowrun tend to be loaded to the gills with reaction-enhancing cyberware like Wired Reflexes and Reaction Enhancers. This gives them a distinct advantage over other types of characters when it comes to using firearms. Trolls, with their rather large Body attribute ratings, will also benefit from this rule, as they should.

Shotguns and Chokes

Most shotguns are designed to fire multiple-projectile loads, commonly known as *shot*. After exiting the muzzle, the shot spreads, creating a cone of lead or steel balls extending outward from the shotgun's muzzle. this allows shot to hit multiple targets, but with reduced effectiveness. The mechanism that controls this spread is called the *choke*.

A choke works like a nozzle on a wter hose; it constricts the shot column as it leaves the barrel, squeezing the column into a tighter group that desperses slowly. The tighter the constriction, the tighter the group at a given range. Canon Shadowrun rules allow for an unrealistic level of spread. No shotgun load spreads to cover an area of one meter at a distance of two meters no matter how short the barrel or how open the choke. It just doesn't happen. Therefore, the rules below are designed to make the choke rules a bit more realistic.

Most defensive shotguns employ a fixed choke that really isn't a choke at all. This is known as a *cylinder bore*, meaning that there is absolutely no constriction at the muzzle. Because of this, a shotgun with a cylinder bore barrel makes for the most versatile kind of shotgun, capable of firing all kinds of loads, from slugs to the smallest shot. The downside is that the shot column is allowed to expand at its maximum rate.

Other than cylinder bore, there are several levels of choke constriction available, depensing on the user's needs. These levels are listed below.

Choke	Rating	Spread @ 20m	Spread @ 50m	Spread @ 100m
Cylinder	1	0.6	1.5	3
Skeet	1.2	0.5	1.25	2.5
Improved Cylinder	1.2	0.5	1.25	2.5
Modified	1.5	0.4	1	2
Improved Modified	1.5	0.4	1	2
Full	2	0.3	0.75	1.5
Extra Full (Lead Only)	2	0.3	0.75	1.5

The rating number listed above determines how quickly the shot spreads. For every number of meters equal to the choke setting that the shot travels, it will spread 0.03 meters (3 centimeters). Spread can be calculated using this simple formula: **Range/Rating*0.03=Spread in meters**. For example, at a distance of 20 meters, shot fired from a cylinder bore shotgun will spread to 0.6 meters (20/1*0.03=0.6). At a distance of 50 meters, shot fired from a modified choke shotgun will spread to 1 meter (50/1.5*0.03=0.75). At a distance of 100 meters, shot fired from a full choke shotgun will spread to 1.5 meters (100/2*0.03=1.5).

When a shot round exceeds its Choke Rating * 20 in range, it loses one point of power. Also at this point, subtract -1 from the attacker's target number. This applies at every interval until the shotgun's maximum range is reached. For example, a character firing a cylinder bore shotgun at a target 40 meters away would receive -2 power/-2 target number modifiers. Likewise, a character firing a full choke shotgun at a target 80 meters away would receive -2 power/-2 target number modifiers.

Some loads cannot be used with a choke. Slug, buckshot and heavy flechette loads fall into this category. If a choke is set to a rating higher than its base rating when used with either of these types of loads, damage to the choke will occur, possibly destroying it and injuring the shooter. In this case, apply an additional +2 recoil modifier.

The Physics of Sound

Hiram P. Maxim patented the first truly successful sound suppressor for firearms in March 1909 (US916885). The physics of sound remains the same today as at the beginning of the 20th century. Elastic (longitudinal or compressional) waves though a gas are, of course, responsible for sounds that reach the ear.

The sound produced by a firearm is principally comprised of three components. They are: (1) the muzzle blast created by shock waves generated from the sudden expansion of hot propellant gases as they encounter the atmosphere at the muzzle end of the gun barrel; (2) the miniature sonic boom, or *crack*, produces by a bullet traveling downrange at a velocity above the speed of sound (1,087.5 fps at 32 degrees Fahrenheit at sea level - the speed of sound through an ideal gas varies directly as the square root of the absolute temperature, and inversely as the square root of the atomic weight. However, since the medium is air, which has an almost constant molecular weight, that factor in the equation is really not relevant. Further, neither humidity nor altitude affect the speed of sound); and (3) in the case of a semiautomatic or full-auto weapon, there is the mechanical noise produced by the action. If the projectile travels downrange at subsonic velocity, it will not produce a sonic boom as it passes stationary objects. There is little that can be done about the sound produced by the firearm's reciprocating parts, although some have installed slide locks on sound-suppressed pistols, with only moderate success and, in effect, turning the handgun into a single-shot firearm.

It is the muzzle blast to which all sound suppressors, successful or not, address themselves. They do so by use of a single formula from physics known as the general gas law. Applicable to all ideal gases, the equation states that pressure equals temperature multiplied by a constant divided by volume. As muzzle blast is a consequence of relatively high-pressure gases exiting the barrel, reduction of the pressure immediately before exit, by either increasing the volume or decreasing the temperature (cooling), or both, will reduce the sound. Modern, relatively small, dry-type sound suppressors sometimes exhibit other phenomena. First, they often generate extreme turbulence that delays exit of the propellant gases. Secondly, some designs now use gas energy to generate a high frequency sound in that portion of the audio spectrum where the human ear is not very sensitive. These so called *fequency shift units* make the suppressor sound more quiet, although this is not usually reflected by a sound meter reading.

Sound suppressors are usually evaluated and compared by a logarithmic ratio called the decibel (dB). The logarithmic nature of the dB is important to keep in mind, as a 3 dB drop in sound is 1/10 of the original sound pressure level, while a 20 dB decrease is 1/100 the original level. However, because the sensitivity curve of the ear is also logarithmic, decreasing the sound energy to one-hundredth of its original value halves the apparent sound. For comparison purposes, quiet conversation is about 55 dB, a handclap 65dB, a jackhammer about 120 dB, and an M16 rifle 165 dB.

Sound levels also diminish as the observer moves further from the sound source. The sound level drops according to the inverse square law (i.e., the sound decreases with the square of the distance from the source). A sound suppressor that is perceived to be fairly loud within the confines of a small room, may not even be heard by an observer when fired from a distance of 25 feet outdoors, or from behind cover and concealment.

Metal Storm

^

The Metal Storm firearm concept was invented by Australian J. Michael O'Dwyer. The concept involves very simple mechanical elements used in conjunction with an electronic firing system.

Ammunition is stored directly in the barrel, in linear "stacks" of multiple rounds. Each round contains a bullet, propellant powder, and primer. Rounds are ignited through the use of a programmable electronic system, fired sequentially with the second bullet acting as a breech block for the first. Because there is no cartridge case to eject and firing is controlled electronically, the rate of fire can be programmed to suit mission requirements. Per pull of the trigger, single shots, all the way up to the full stack of ammunition at a rate of approximately 60,000 rounds per minute, can be fired.

For more information, visit metalstorm.com.

Firearms

Guns. Lots of Guns.

- Handguns
- Submachine Guns
- Shotguns
- Assault Rifles
- Sport Rifles
- Sniper Rifles
- Anti-Matériel Rifles
- Machine Guns
- Grenade Launchers

Ares Predator III ERASe

Ares Arms, Inc. Detroit, MI UCAS
10x24mm Caseless M309LP
Operation: Gas
Action: Double/Single, DAO
Safety: Frame-mounted with decocker
Sights: Fixed 3-Dot, Fixed Tritium
Barrel: 5.51" (140mm)
Weight: 4.18 lbs. (1.9 kg)
Magazine Capacity: 15 rounds, double stacked
Modes of fire: Safe, semi-automatic, 3-round burst

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P3 ERASe	**10x24mm**	**Heavy Pistol**	**5**	**15 clip**	**SA/BF**	**9M**	**1.9**	**12/18 days**	**3,000 ¥**

- Integral Smartlink 2.
- Chamber-based recoil adjuster provides up to 5 points of recoil compensation.

Ares Arms has done it once again with the new Predator III! Designed as a companion release for the Ares Smartlink II System, this new model is also available in a select-fire variant with the Electronic Recoil Adjustment System, or *ERASe*. The *ERASe* works by arresting the bolt for a fraction of a second to slow the rate of fire to the weapon's natural frequency (about 450 rounds a minute), thus keeping the pistol steady, virtually *erasing* recoil!

This pistol is sure to turn the heads of our many users of the Predator II that suggested a reply to Savalette's Guardian and it's notoriously faulty Smartlink system.

Using caseless ammunition exclusively, the Predator III weighs in at almost a full pound less than its counterpart, and boasts many of the same features. With the options like the Smartlink II system, and a stunning blued or stainless steel finish, you can't lose!

Don't give fate a chance at losing your signal. Overcome it with the Predator III by Ares Arms!

Firearms Creation Guide Design, Predator III ERASe

Description	DC	Wt	Con	Totals
Heavy Pistol	35	2	5	Weapon Type: Machine Pistol
10x24mm Caseless (M309LP)	20	-20%		Conceal: 5
Alloy Construction				Ammunition Capacity: 15
15 Clip				Firing Mode: SA/BF (SA/FA +20 DC)
Burst Fire	10			Damage: 9M
Gas Operated	10			Weight: 1.9kg
Standard Feed				Spaces: Under, Barrel
Electronic Recoil Adjustment	100	0.15		Grade: Military
Smartlink II	25	0.25		Technology Rating: SOTA
				Design Cost: 200
				Availability: 12/18 days
Totals	**200**	**1.9**	**5**	Cost (¥): 3,000 ¥

Beretta 81 Series "Cheetah"

84FS / 85FS [87 Target]

Fabbrica d'Armi Pietro Beretta Gardone, Val Trompia, Italy

.380 Auto (9mm Kurz) or .22LR

Operation: Blowback

Action: Double/Single

Safety: Ambidextrous w/ decocker, slide-mounted

Sights: Fixed 3-Dot

Barrel: Varies

Weight: Varies

Magazine Capacity: 7-13 rounds, double stacked

Modes of fire: Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
81FS	.32 ACP	Light Pistol	6	12 clip	SA	6L	0.68	3/36 hrs	545 ¥
83FS	.380 Auto	Light Pistol	6	7 clip	SA	5M	0.62	3/36 hrs	545 ¥
84FS	.380 Auto	Light Pistol	6	13 clip	SA	5M	0.66	2/24 hrs	580 ¥
85FS	.380 Auto	Light Pistol	6	8 clip	SA	5M	0.62	2/24 hrs	545 ¥
87S	.22 LR	Light Pistol	6	8 clip	SA	4L	0.60	3/36 hrs	580 ¥
87T	.22 LR	Medium Pistol	5	10 clip	SA	4L	0.83	2/24 hrs	670 ¥

With nickel finish, wood grips +70¥.

These medium frame pistols deliver .380 power in a personal-size package and maintain the reliability, safety and performance features of Beretta’s legendary 92FS. The semi-automatic Cheetah comes in an array of models to match your shooting needs (including one that features Beretta’s unique, tip-up barrel for easy, direct chamber loading). The Cheetah pistols feature an open slide design that increases reliability and virtually eliminates jams and stovepiping. The frame is made from and aluminum alloy with the strength and durability of steel. Safety is assured through the firing pin block (FS models) and trigger bar disconnect that disengages the trigger from the sear mechanism when the safety is on. Features such as these, and the built-in reliability and quality that come standard with every Beretta, make the Cheetah a natural for personal defense and an ideal back-up gun for law enforcement professionals.

84FS Cheetah

> A .380 caliber double-action pistol with staggered magazine and manual safety with hammer decocking device. The magazine release is reversible, and the enlarged combat trigger guard provides support for a two-handed hold or use with gloves. The 84FS Cheetah features a corrosion-resistant anodized alloy frame with matte black finish and chromium-plated bore. A nickel-finished version is available with plastic or wood grips.

85FS Cheetah

> With its straight-line, 8-round magazine, the pistol has a slimmer profile for those with smaller hands. The 85FS Cheetah is available with a nickel finish and plastic or wood grips. The **83FS** is similar, with a 4" (101mm) barrel and 7-round magazine.

87 Cheetah

> The 87 Cheetah is a .22LR version that’s perfect for plinking and inexpensive target practice. It has a single-action, blow-back design offering unsurpassed reliability and accuracy in a .22 caliber pistol.

87 Target

> The 87 Target is a .22LR single-action pistol designed for practical shooting and training. The 6” (150mm) long barrel is covered by a lightweight alloy sleeve that accepts optical sighting systems (Weaver interface). The sights are adjustable, and the magazine features a sturdy rubber pad. Standard grips are plastic, however walnut grips are available on request. Trigger pull is very light and crisp. The pistol is designed to remain upright when when set down on a flat surface, ready to be quickly gripped, magazine loaded an raised to the target (.22LR Practical Shooting).

Some information provided by otomik.

Beretta 8000 Series "Cougar"

8000D/8040F [8000F Inox]

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

Various Chamberings

Operation: Short Recoil

Action: Double/Single, DAO

Safety: Ambidextrous w/ decocker, slide-mounted

Sights:
Fixed 3-Dot

Barrel: 3.6" (92mm)

Weight: 2.06 lbs. (935 g)

Magazine Capacity:
8-15 rounds, double stacked

Modes of fire:
Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
8000	9mm Para	Medium Pistol	6	15 clip	SA	7M	0.94	2/24 hrs	710 ¥
8040	.40 S&W	Medium Pistol	6	11 clip	SA	8M	0.94	2/24 hrs	710 ¥
8357	.357 SIG	Heavy Pistol	6	11 clip	SA	9M	0.94	2/24 hrs	710 ¥
8045	.45 ACP	Medium Pistol	6	8 clip	SA	8M	0.94	2/24 hrs	765 ¥

- With stainless (INOX) finish, +65¥.

The Beretta Cougar 8000 Series semi-auto has developed a formidable reputation as a reliable, potent pistol. First designed primarily as an undercover gun, the Beretta Cougar 8000 is now carried by growing numbers of police officers as their official duty sidearm because of its superior ergonomic design, low recoil and inherent accuracy. The Beretta Cougar boasts an incredible life of more than 30,000 shots. Beretta has been able to develop an ergonomically advanced pistol, compact but capable of handling high-power cartridges like the 9mm Parabellum, .357 Sig, .40 S.&W, or the .45 ACP, with great fire capacity and extraordinary long life. This has been possible thanks to a brilliant adaptation of a proven locked breech system with rotating barrel.

By channeling part of the recoil energy into barrel rotation, and by partially absorbing the barrel and slide recoil shock through the central block before it is transferred to the frame, the cougar achieves unusually low felt recoil. When the Cougar is in battery, the positive lock-up of barrel to slide assures perfect alignment of barrel and sights. Upon firing, the barrel travels and rotates with axial movement. The result is superior accuracy and quicker recovery for second shots.

The Cougar is one of the most ergonomically advanced pistols in its class. The user-friendly, contoured frame and grips make the Cougar exceptionally easy to control during firing. By taking hand anatomy and instinctive hold into account, the Cougar accommodates smaller hands and also protects larger hands from being pinched by the slide. All edges are rounded or beveled and carefully finished to make the Cougar virtually snag-proof and exceptionally easy to draw and conceal.

Beretta offers a choice of two operating systems, each with specific safety options:

> **F Models** - Double/single action, external ambidextrous manual safety/decocking lever, trigger bar disconnect, rotating firing pin striker, firing pin block device.
>
> **D Models** - Double action only with no safety lever or hammer spur, firing pin block device.

Both models feature a "chamber loaded" indicator.

Some information provided by otomik.

Beretta 92 Series

92FS INOX / 92FS [92D] [Brigadier] [Centurion]

Fabbrica d'Armi Pietro Beretta Gardone, Val Trompia, Italy	
9x19mm, 9x21mm, .40 S&W	
Operation: Short Recoil	
Action: Double/Single, DAO	
Safety: Ambidextrous w/ decocker, slide-mounted	
Sights: Fixed 3-Dot, Fixed Tritium, Adjustable 3-Dot	
Barrel: 4.9" (125mm)	
Weight: 2.08 lbs. (945 g)	
Magazine Capacity: 11-15 rounds, double stacked	
Modes of fire: Safe, Semi-automatic	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
92	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.95**	**2/24 hrs**	**670 ¥**
96	**.40 S&W**	**Medium Pistol**	**6**	**11 clip**	**SA**	**8M**	**0.95**	**2/24 hrs**	**670 ¥**
98	**9x21mm IMI**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.95**	**4/48 hrs**	**670 ¥**
22LR Kit	**.22 LR**	**Medium Pistol**	**6**	**10 clip**	**SA**	**5L**	**-**	**2/24 hrs**	**200 ¥**

- With matte stainless (INOX) finish, +70¥.
- Brigadier model (heavy slide, dovetailed sights), +50¥.
- With matte golden stainless finish, +100¥. Available only for models 92 and 98. +2 availability.
- With walnut grips and gold accents (EL), +500¥. Available only for model 92. +2/48 hrs availability.
- Deluxe variant (features gold plating, fine walnut grips and ingraving), +5,000¥. Available only for models 92 and 98. 6/7 days availability.

It's not an official title, but "the ultimate pistol" perfectly describes the Beretta 92FS. Selected by a multi-national roster of defense and law enforcement organizations, tested and proven through a demanding quality control regimen before leaving the factory, and proven in the field in countless defensive confrontations, the 92FS is in all respects the "ultimate."

Beretta 92 Series Pistols are semi-automatics and operate on the short recoil, delayed locking block system, which yields a faster cycle time and delivers exceptional accuracy and reliability. Each features a lightweight, forged frame made form aircraft-quality aluminum alloy. All 92 series pistols feature unique safety refinements. On FS models, the manual safety also functions as a decocking lever. A firing pin block secures the firing pin. The chamber loaded indicator is visible or can be felt by touch.

Beretta offers a choice of four operating systems, each with specific safety options:

> **FS Models** - Double/single action, external ambidextrous manual safety/decocking lever, trigger bar disconnect, rotating firing pin striker, firing pin block device.
>
> **G Models** - Developed for the French Gendarmerie Nationale, the G models differ from FS models in that the decocking lever *does not* function as a traditional safety. When the lever is released, after having been activated to lower the hammer, it automatically returns to the ready-to-fire position. Trigger bar disconnect, rotating firing pin striker, firing pin block device.
>
> **D Models** - Double action only with no safety lever or hammer spur, firing pin block device.
>
> **DS Models** - Double action only, external ambidextrous manual safety, trigger bar disconnect, rotating firing pin striker, firing pin block device.

All models feature a "chamber loaded" indicator.

The "Brigadier" model was designed to meet the special needs of the United States INS who wanted an accurate, reliable and durable .40 caliber pistol with removable front and rear sights. The Brigadier's slide is heavier and recontoured. This design accommodates a removable front sight and provides shooters with an important advantage. Because of the heavier slide, the gun's balance is enhanced and felt recoil is reduced, improving accuracy for follow-up shots. The Brigadier is available, on request, with wrap around, stippled rubber grips and socket head grip screws. (4.9" barrel, 8.5" overall length)

The "Centurion" model is distinguished by reduced barrel and slide length, for a slightly more compact design. The Centurion pistol is based on the same reliable frame as the 92FS pistols, with identical firepower, safety and performance features. (4.29" barrel, 7.75" overall length)

Perfect for practice shooting the pistol with which you're already familiar, the 92 Series Practice Kit includes a steel .22 Long Rifle barrel, aluminum slide with FS manual safety and firing pin block device, recoil spring guide, recoil spring and 10-round polymer magazine. The slide features a fixed front sight, fully adjustable rear sight. The finish is matte black. Blowback operated.

Some information provided by otomik.

Beretta 92 Series Combat and Stock

Combat [Stock]

Fabbrica d'Armi Pietro Beretta
Gardone, Val Trompia, Italy

9x19mm, 9x21mm, .40 S&W

Operation: Short Recoil

Action: Single Action

Safety: Ambidextrous, frame-mounted

Sights: Adjustable 3-Dot, adjustable tritium

Barrel: 5.9" (150mm)

Weight: 2.5 lbs. (1.1 g)

Magazine Capacity:
11-15 rounds, double stacked

Modes of fire:
Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
92 Combat	9mm Para	Medium Pistol	5	15 clip	SA	7M	1.1	6/72 hrs	1,735 ¥
96 Combat	.40 S&W	Medium Pistol	5	11 clip	SA	8M	1.1	6/72 hrs	1,735 ¥
98 Combat	9x21mm IMI	Medium Pistol	5	15 clip	SA	7M	1.1	6/72 hrs	1,735 ¥
92 Stock	9mm Para	Medium Pistol	6	15 clip	SA	7M	1	4/48 hrs	950 ¥
96 Stock	.40 S&W	Medium Pistol	6	11 clip	SA	8M	1	4/48 hrs	950 ¥

- Counterweight provides 1 point of recoil compensation.

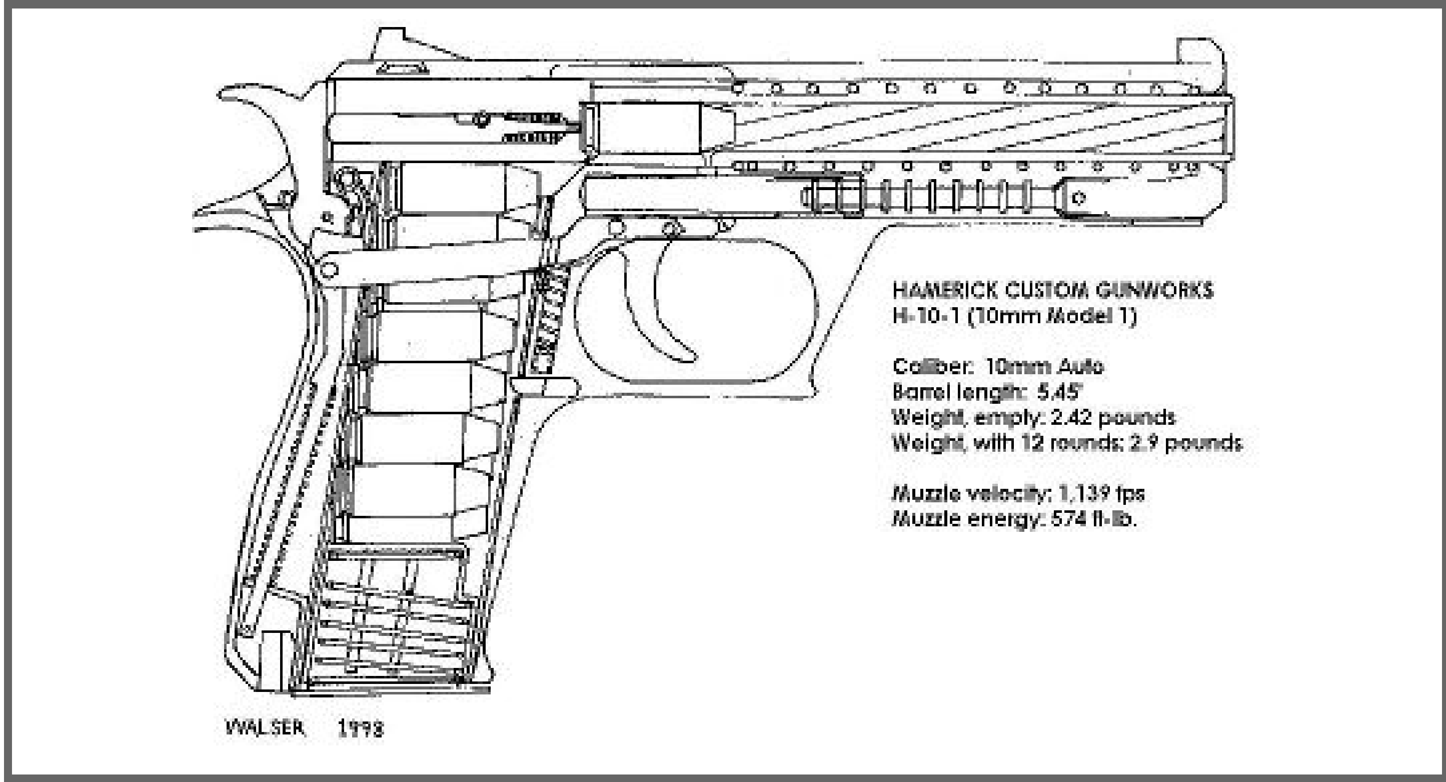
Built to incorporate all the features and superior accuracy demanded by shooters competing in IPSC (International Practical Shooting Confederation) events, the outstanding technical detail on the 92 Combat series ensures a formidable competitive edge. To withstand the rigors of competition, and for improved balance and recoil absorption, Beretta Combat pistols employ a special recontoured slide found on the Brigadier model. In competition the manual safety makes the firearm "combat-ready" – hammer cocked and with the safety on. The single action makes for crisp trigger pull, micrometrically regulated for creep and overtravel.

The pistol comes complete with a 6" (150mm) barrel with counterweight sleeve and an interchangeable 4.9" (125mm) barrel that enables shooters to compete in the "Standard" category. Tools and components to change the barrels are included in the sturdy carrying case.

The "Stock" model includes features of both the standard 92 series and the Combat model. The pistol begins with standard 92 series frame with double action trigger, lanyard loop and standard grip panels. It includes a frame-mounted ambidextrous safety lever for cocked and locked carry, 4.9" (125mm) barrel with accurizing bushing system, a Brigadier slide with forward serrations and dovetailed front and rear fixed sights.

Some information provided by otomik.

Browning H10



Browning North America, Inc.
Tacoma, SEATAC, UCAS

10mm Automatic

Operation: Delayed Blowback

Action: Double/Single

Safety:
Frame-mounted

Sights:
Fixed 3-Dot, Fixed Fiber Optic

Barrel: 5.45" (138mm)

Weight: 2.42 lbs. (1.1 kg)

Magazine Capacity:
12 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
H10	**10mm Auto**	**Heavy Pistol**	**5**	**12 clip**	**SA**	**9M**	**1.1**	**4/48 hrs**	**950 ¥**

Does not include a Smartlink system but can accept one at x0.75 cost.

Over our one hundred and eighty-three years of business, we at Browning have noticed demand for high-quality custom pistol designs from time to time. And every once in a while, we see a really nice one come along. They've even become hallmarks of our business, like our popular Max Power and Ultra Power pistols.

That's why Browning North America is proud to announce another custom design that will be making full production soon, the Hamerick Custom Gunworks H-10-1, now known as the Browning H10.

Designed as the first large-scale production piece by the Tacoma-based custom pistolsmith Peter Hamerick, the H10 is a 10mm semi-automatic design. Its fixed barrel provides excellent bench test accuracy, and the advanced chamber design coupled with a gas-operated recoil mechanism make it a rather comfortable weapon to fire.

Although it does not come equipped with Smartlink technology, the weapon frame is already designed to accept it, should the user desire. Fully adjustable iron sights are standard, with colored-rod light gathering inserts for low-visibility shooting.

The already powerful 10mm Auto cartridge generates even more respectable levels of energy and velocity from the H10's 5.45-inch barrel. The trigger set is fully adjustable by the end-user through manipulation of an adjustment screw at the base of the trigger guard. Safety features include an internal pin-block safety and an external, frame mounted (left side) trigger disconnect safety. Also, a wide de-burred ejection port and positive chamber vent extraction process combined with a smoothly polished feed ramp and chamber throat virtually eliminates mechanical stoppages, making the H10 one of the most reliable combat pistol designs yet.

If you haven't started on your way up to Peter's shop just yet, we suggest you line up a visit soon. Tell him we sent you.

Designed by Stillman

Fabrique Nationale BDA9 and BDAO

BDA9 [BDA9 Compact]

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

9mm Parabellum

Operation: Short Recoil

Action: Double/Single, DAO

Safety: Ambidextrous decocking lever (NA on DAO)

Sights: Fixed 3-Dot, Adjustable 3-Dot

Barrel: 4.75" (120mm)

Weight: 1.9 lbs. (875 g)

Magazine Capacity:
13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
BDA9	9mm Para	Medium Pistol	6	14 clip	SA	7M	0.88	2/24 hrs	550 ¥
BDA9C	9mm Para	Medium Pistol	7	10 clip	SA	7M	0.86	2/24 hrs	525 ¥
BDAO	9mm Para	Medium Pistol	6	14 clip	SA	7M	0.88	2/24 hrs	550 ¥
BDAOC	9mm Para	Medium Pistol	7	10 clip	SA	7M	0.86	2/24 hrs	525 ¥

The BDA9 (Browning Double Action, 9mm) and BDAO (Browning Double Action Only) pistols have a lot in common. They share the same reliable mechanism, offer the same superb egronomics and are both manufactured to FN HERSTAL's stringent quality standards. At the same time, they are different in function as they are each intended to satisfy different basic mission requirements. The BDA9 was conceived for military applications while the BDAO is perfectly suitable for law enforcement use.

The BDA9 is a double/single action, high-capacity, semi-automatic pistol that operates by a conventional and reliable short recoil of the barrel. It uses a classic double action trigger which cocks and then releases the hammer. The recoil of the slide recocks the hammer, and all consective shots are fired from the single action mode.

The BDA9's visable and accessible hammer can be cocked manually if the user wishes to fire the first shot in the single action without first cycling the slide (i.e. after the pistol has been decocked). The BDA9 features an ambidextrous decocking lever and a reversible magazine catch.

The BDAO is a double-action-only, high-capacity semi-automatic pistol that, like the BDA9, operates by a short recoil of the barrel. The rearward pull of the trigger cocks and then releases the hammer which is automatically decocked following each shot. The BDAO's magazine catch is reversible for left- or right-handed use.

The BDA9 and the BDAO both feature a firing pin safety which automatically blocks the firing pin and is released only when the trigger is pulled to fire. Immediately after a round is fired, the safety reengages itself even if the trigger is not released. When the hammer is released from the cocked position either by actuating the decocking lever (BDA9) or when the slide closes (BDAO), it is caught in the safety notch by the decocking safety before it reaches the firing pin.

Both pistols are double-action versions of John Browning's last design, the GP35 High Power. They are also the predecessors of the more powerful, polymer-framed Max Power and Ultra Power pistols.

Compact versions are available for both BDA9 and BDAO pistols.

Fabrique Nationale P35 Hi Power

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: Single Action

Safety: Frame-mounted, Ambidextrous, magazine

Sights:
Fixed 3-Dot

Barrel: 4.6" (118mm)

Weight: 2 lbs. (930 g)

Magazine Capacity:
13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HP-SA	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.88**	**2/24 hrs**	**550 ¥**
HP-SA	**.40 S&W**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**0.88**	**2/24 hrs**	**550 ¥**

One of the most prolific combat handguns ever produced, the FN *Grand Puissance* or *Hi Power*, is often noted as being the last invention of American firearm designer John Moses Browning. The genesis for this design appears to have been a post-WWI French military request for a high-capacity semi-automatic pistol intended to replace revolvers then in service. Browning began development of the design in the early 1920s, filing a US patent application in 1923. However, Browning died in 1926, several years before the project was completed. The design was then passed into the hands of FN engineer Dieudonne Saive (designer of the SAFN-49 and FN FAL rifles), who then refined the design into a production-worthy firearm. FN then began production n 1935.

The Hi Power (also known as the GP or P35) is a single action pistol, notable in that is was the first handgun to include a high-capacity, double-stacked magazine. This effectively doubled the available firepower from a handgun and brought about an evolution in combat handgun design; most combat handguns developed after the Hi Power include such a magazine. Another notable feature involves the locking system. Utilizing Browning's tipping barrel form of short recoil operation, the Hi Power was the first pistol to use an open lug cam below the chamber to affect unlocking of the barrel from the slide. This is another feature that is found almost universally on modern combat handguns. Yet one more notable feature of the Hi Power is its magazine safety, which prevents the weapon from being fired while the magazine is removed. Some users consider this an undesirable feature and choose to remove this safety under the rationale that they might need to fire the weapon during a tactical reload. It also prevents magazines from dropping free.

The Hi Power was not in production long before WWII intervined. German forces captured the Fabrique Nationale factory and began producing the Hi Power under the designation *Pistole 640(b)*. However, before the factory was overrun, blueprints for the pistol were taken to England, then delivered to Canada where production began at the John Inglis Company of Toronto. Inglis provided Hi Power pistols to British Commonwealth militaries as well as China. Therefore, the Hi Power was in separate production and service by both Axis and Allied forces during WWII. Some pistols manufactured during this time included rear sights that were elevation-adjustable to 500 meters (extremely optimistic) and a slot in the backstrap for attaching a wooden shoulder stock/holster. These features were not very popular and were subsequently dropped from production.

The Hi Power became very popular post-war and was eventually adopted for service by more than 50 countries including the UK (as the L9A1), where it is still the standard service sidearm. The Hi Power and variations of it have been manufactured in Argentina, Belgium, Brazil, Bulgaria, Hungary and the Philippines.

The Hi Power has been improved in several steps over the last 70 years. The MKII version appeared in the early 1980s and includes an improved ambidextrous safety lever as well as an external extractor for improved relability, and improved sights. The MKIII version (also marketed as the HP-SA) includes the features of the MKII as well as an internal firing pin safety and ergonomic grip panels. In the early 1990s, the High Power was again re-designed with a heavier slide in order to accept the popular .40 S&W cartridge. Also, a version of the Hi Power with a double action trigger (BDA) was also developed around this time.

The Hi Power is a notable "first" and continues to be a viable option 70 years after its introduction.

US Patent 1618510

Glock Full Size Pistols

Glock GmbH
Deutsch-Wagram, Austria

Various Chamberings

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Fixed 3-Dot, Fixed Tritium, Adjustable 3-Dot

Barrel: 4.49" (114mm)
4.6" (117mm) Models 20/21

Weight: Varies

Magazine Capacity:
13-17 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
17	**9mm Para**	**Medium Pistol**	**6**	**17 clip**	**SA**	**7M**	**0.62**	**2/24 hrs**	**550 ¥**
20	**10mm Auto**	**Heavy Pistol**	**6**	**15 clip**	**SA**	**9M**	**0.78**	**2/48 hrs**	**550 ¥**
21	**.45 ACP**	**Medium Pistol**	**6**	**13 clip**	**SA**	**8M**	**0.75**	**2/24 hrs**	**550 ¥**
22	**.40 S&W**	**Medium Pistol**	**6**	**15 clip**	**SA**	**8M**	**0.65**	**2/24 hrs**	**550 ¥**
31	**.357 SIG**	**Heavy Pistol**	**6**	**15 clip**	**SA**	**9M**	**0.66**	**2/24 hrs**	**550 ¥**
37	**.45 GAP**	**Heavy Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.75**	**2/24 hrs**	**550 ¥**

Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The original Glock pistol, the Model 17, is available only in 9mm Parabellum. Other chamberings for full-sized pistols are available. All full-sized Glock pistols are available in the "C", or compensated variant (17C, 20C, 21C, etc...), which includes a ported slide and vented barrel to reduce muzzle climb.

Glock Compact Pistols

Glock GmbH
Deutsch-Wagram, Austria

Various Chamberings

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Fixed 3-Dot, Fixed Tritium, Adjustable 3-Dot

Barrel: 4.02" (102mm)

Weight: Varies

Magazine Capacity:
13-17 rounds, double stk.

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
19	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.60**	**2/24 hrs**	**520 ¥**
23	**.40 S&W**	**Medium Pistol**	**6**	**13 clip**	**SA**	**8M**	**0.60**	**2/24 hrs**	**520 ¥**
25	**.380 Auto**	**Medium Pistol**	**6**	**15 clip**	**SA**	**5M**	**0.57**	**2/24 hrs**	**520 ¥**
32	**.357 SIG**	**Heavy Pistol**	**6**	**13 clip**	**SA**	**9M**	**0.61**	**224 hrs**	**520 ¥**
38	**.45 GAP**	**Heavy Pistol**	**6**	**8 clip**	**SA**	**8M**	**0.61**	**224 hrs**	**520 ¥**

Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The compact variant of the original Glock pistol, the Model 19, is available only in 9mm Parabellum. Other chamberings for compact pistols are available. All compact Glock pistols are available in the "C", or compensated variant (19C, 23C, 32C, etc...), which includes a ported slide and vented barrel to reduce muzzle climb. The Glock 25 uses straight blowback operation.

Glock Subcompact Pistols

Glock GmbH
Deutsch-Wagram, Austria

Various Chamberings

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Fixed 3-Dot, Fixed Tritium, Adjustable 3-Dot

Barrel: 3.46" (88mm)
3.78" (96mm) Models 29/30

Weight: 1.5 lbs. (700 g)

Magazine Capacity:
9-12 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
26	**9mm Para**	**Medium Pistol**	**8**	**12 clip**	**SA**	**7M**	**0.56**	**2/24 hrs**	**520 ¥**
27	**.40 S&W**	**Medium Pistol**	**8**	**11 clip**	**SA**	**8M**	**0.56**	**2/24 hrs**	**520 ¥**
28	**.380 Auto**	**Light Pistol**	**8**	**12 clip**	**SA**	**5M**	**0.53**	**2/24 hrs**	**520 ¥**
29	**10mm Auto**	**Medium Pistol**	**8**	**10 clip**	**SA**	**9M**	**0.7**	**2/24 hrs**	**520 ¥**
30	**.45 Auto**	**Medium Pistol**	**8**	**9 clip**	**SA**	**8M**	**0.68**	**2/24 hrs**	**520 ¥**
33	**.357 SIG**	**Medium Pistol**	**8**	**11 clip**	**SA**	**9M**	**0.56**	**2/24 hrs**	**520 ¥**
39	**.45 GAP**	**Medium Pistol**	**8**	**6 clip**	**SA**	**8M**	**0.56**	**2/24 hrs**	**520 ¥**

Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The subcompact variant of the Glock pistol is available in seven popular chamberings to suit the needs of the user. The Glock 28 uses straight blowback operation.

Glock Practical / Tactical Pistols

Glock GmbH
Deutsch-Wagram, Austria

Various Chamberings

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Adjustable 3-Dot, Adjustable Tritium

Barrel: 5.32" (135mm)

Weight: 1.5 lbs. (680 g)

Magazine Capacity:
17/15 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
34	**9mm Para**	**Heavy Pistol**	**5**	**17 clip**	**SA**	**7M**	**0.68**	**4/48 hrs**	**680 ¥**
35	**.40 S&W**	**Heavy Pistol**	**5**	**15 clip**	**SA**	**8M**	**0.68**	**4/48 hrs**	**680 ¥**

Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The Practical/Tactical variants of the Glock pistol, Models 34 and 35, include a longer barrel with a lightened slide and adjustable iron sights. When the first shot is the only one that counts, the Practical/Tactical is there with unparalleled reliability, accuracy, and funtionality.

Glock 18

Glock GmbH
Deutsch-Wagram, Austria

9mm Parabellum

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Fixed 3-Dot or Tritium

Barrel: 4.49" (114mm)

Weight: 1.43 lbs. (650 g)

Magazine Capacity:
17 rounds, double stacked
31 rounds, extended

Modes of fire:
Safe, semi-automatic, fully automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
18	9mm Para	Medium Pistol	6	17 clip	SA/ FA	7M	0.65	6/72 hrs	750 ¥

- This weapon has no Burst-Fire facility.
- "C" variant available (+150¥). Provides 1 point of Gas Vent recoil compensation.
- Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The Model 18 is a select-fire variant of the original Model 17, which can fire in semi or full automatic modes. The "C", or compensated variant, houses a standard-length vented barrel inside of a ported slide.

Available only in 9x19mm Parabellum caliber, the Model 18 is a powerful solution for anyone needing advanced firepower in a compact package. A 31-round extended magazine is also available for this weapon.

Glock 36

Glock GmbH
Deutsch-Wagram, Austria

.45 ACP

Operation: Short Recoil

Action: Safe Action

Safety: No manual safety

Sights: Fixed 3-Dot, Fixed Tritium, Adjustable 3-Dot

Barrel: 3.78" (96mm)

Weight: 1.25 lbs. (570 g)

Magazine Capacity:
6 rounds, single stacked
10 rounds, extended

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
36	**.45 ACP**	**Medium Pistol**	**7**	**6 clip**	**SA**	**8M**	**0.57**	**2/24 hrs**	**510 ¥**

Glock accessories.

Introduced to the Austrian Army as a bid for a military service pistol, longshot newcomer Gaston Glock won the contract in 1983 over the long established firm of Steyr and their GB pistol design. Since then, Glock's design has taken off like a rocket and never looked back. Stylish and effective, the Glock pistol has become an icon.

Using Glock's exclusive "Safe Action" DAO trigger mechanism which unlocks three separate passive safety devices during the trigger pull, the Glock pistol has been accepted by police departments worldwide and is renowned for its inherent safety. Accidental discharges are nearly impossible with the Glock pistol.

The Glock 36 is the the slimline subcompact variant of the Glock pistol in .45 ACP caliber. Its single-stacked magazine separates it from other Glock pistols and also allows it to slim down to a svelte 1.13 inches (28.5mm) in width.

Heckler & Koch Mark 23 (MK23 MOD O SOCOM)

[MK23 with Suppressor & LAM]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

.45 ACP

Operation: Short Recoil

Action: Double/Single

Safety: Ambidextrous, separate decocker

Sights: Adjustable 3-Dot

Barrel: 5.87" (149mm)

Weight: 2.24 lbs. (1.1 kg)

Magazine Capacity:
12 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Mark 23	**.45 ACP**	**Heavy Pistol**	**5**	**12 clip**	**SA**	**8M**	**1.1**	**8/72 hrs**	**2,415 ¥**
MK23 MOD 0	**.45 ACP**	**Heavy Pistol**	**4***	**12 clip**	**SA**	**8M**	**1.1**	**8/14 days**	**4,210 ¥**

This weapon comes standard with a threaded barrel making it less expensive to mount barrel-mounted accessories. Multiply final costs x0.75 per barrel-mounted accessory.

MK23 MOD 0 comes with KAC OHG suppressor (+4 to Perception Tests) and a Laser Aiming Module (LAM) that includes visible ambient light (flashlight), visible laser and infrared laser sights (-1 TN). Infrared sights can be used with low light vision systems.

The HK Mark 23 Caliber.45 ACP pistol gives shooters match grade accuracy equal to that of the finest custom made handguns, yet they exceed the most stringent operational requirements ever demanded of a combat handgun.

The Mark 23 provides this accuracy without the need for hand-fitted parts common in custom-built match pistols costing thousands of dollars more. One of the most thoroughly tested handguns in history, the MK23/Mark 23 project originated in 1991 when HK began development for the U.S. Special Operations Command, the unit that directs the activities of America's most elite military units, including the Navy SEALs and the Army Special Forces.

On May 1, 1996, the first MK23 MOD 0 pistols were delivered to the U.S. Special Operations Command for operational deployment, making the MK 23 the first caliber .45 ACP pistol to enter U.S. military service since the venerable Government Model 1911A1. The MK23 MOD 0 package includes a detachable white light (flashlight), visible and infrared Laser Aiming Module (LAM) and Knight's OHG detachable suppressor (+4 to Perception Tests).

Heckler & Koch P7 Series

[P7K3] [P7M7] **P7M8** [P7M10] [P7M13]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

Various Chamberings

Operation: Delayed Blowback

Action: Special Single Action

Safety: Squeeze Cocker

Sights: Fixed 3-Dot

Barrel: Varies

Weight: Varies

Magazine Capacity: Varies

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P7K3	**.380 Auto**	**Light Pistol**	**7**	**8 clip**	**SA**	**6L**	**0.75**	**6/14 days**	**700 ¥**
P7M8	**9mm Para**	**Medium Pistol**	**6**	**8 clip**	**SA**	**7M**	**0.78**	**4/48 hrs**	**750 ¥**
P7M10	**.40 S&W**	**Medium Pistol**	**6**	**10 clip**	**SA**	**8M**	**0.9**	**8/7 days**	**900 ¥**
P7M13	**9mm Para**	**Medium Pistol**	**6**	**13 clip**	**SA**	**7M**	**0.84**	**4/48 hrs**	**900 ¥**

- Cocking lever feature makes readying any P7 for fire a Free Action, as long as a round is chambered.
- Due to design restrictions, P7 pistols cannot mount any internal accessories.
- Converting the P7K3 from one cartridge to another requires four Complex Actions.
- P7 Accessories.

The P7 line of pistols can be drawn, cocked, and fired accurately faster than any other pistol. The unique HK cocking lever allows the P7 to be carried safely with a round in the chamber, yet it is ready to fire by the intentional tightening of the fingers around the grip. Releasing the cocking lever decocks the P7 immediately and renders it completely safe.

The unique P7 gas system retards the movement of the recoiling slide during firing and eliminates the need for a conventional locking mechanism. The diverted chamber gasses are used to extract the spent casing, regardless of weapon orientation, and even with a broken extractor. As a result, the spent casings bear a distinctive scorch pattern, as do the casings from almost every H&K weapon.

A low profile slide contributes to the balanced center of gravity and overall compact size of the P7. Constructed of a tough, scratch-resistant alloy, the low profile keeps the recoiling mass to a minimum. Combined with the optimal grip angle of 110 degrees, the result is an accurate, low recoil pistol; well suited for military and law enforcement users.

The P7 Line comes in five different models:

> The **P7M8** is the basic model. It fires the 9mm Parabellum cartridge and incorporates a single-stacked 8-round magazine. Barrel length is 4.13" (105mm) and weight is 1.72 lbs. (780 g).
>
> The **P7M13** differs from the P7M8 by incorporating a slightly wider frame to house a double-stacked 13-round magazine. Weight is 1.87 lbs. (848 g).
>
> The **P7M10** is somewhat similar to the P7M13, though it is chambered for the more powerful .40 S&W cartridge and incorporates double-stacked 10-round magazine. It also has a slightly heavier slide in order to offset the heavier recoil of the .40 S&W round. Weight is 1.96 lbs. (820 g).
>
> The **P7M7** is slightly larger than the P7M8 and fires the heavy .45 ACP cartridge from a single-stacked 7-round magazine. Instead of using the usual P7 gas system to delay the recoiling slide, the P7M7 uses a oil-filled cylinder inside of which a piston must pass, thereby delaying the recoil movement of the slide. This system eliminates the need for a conventional locking mechanism, and keeps felt recoil to a minimum. Barrel length is 5" (127mm) and weight is 2.2 lbs. (1 kg). The P7M7 never entered production. There are 6 examples in the world, all of which are in possession of HK.
>
> The **P7K3** is the compact version in the P7 series. Available in .380 ACP caliber, with conversion kits for .22 Long Rifle and .32 ACP*. Unlike the other pistols in the P7 series, the P7K3 uses simple blowback operation; no delay is necessary with these light calibers. Barrel length is 3.8" (96.5mm) and weight is 1.65 lbs. (750 g).

Heckler & Koch USP

USP45 [USP9] [USP40 w/UTL]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .40 S&W, .45 ACP

Operation: Short Recoil

Action: Double/Single, DAO

Safety: Frame-mounted with decocker, left or right side

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 4.25" (108mm)

Weight: 1.65 lbs. (748 g)

Magazine Capacity:
13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9	**9mm Para**	**Medium Pistol**	**6**	**15 clip**	**SA**	**7M**	**0.75**	**2/24 hrs**	**770 ¥**
USP40	**.40 S&W**	**Medium Pistol**	**6**	**13 clip**	**SA**	**8M**	**0.75**	**2/24 hrs**	**770 ¥**
USP45	**.45 ACP**	**Medium Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.79**	**2/24 hrs**	**840 ¥**

- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.
- USP Accessories.

The USP (Universal Self-loading Pistol) was designed specifically for an American market some years ago. Features favored by United States law enforcement and military users provided the design criteria for the USP. Its controls were uniquely American, influenced by such famous designs as the Government Model 1911 pistol.

The control lever, a combination safety and decocking lever, is frame mounted and quickly accessible, unlike the slide mounted safeties common on many semi-automatic pistols. Of course, on the SL2 model, these functions can be controlled cybernetically.

Using a modified Browning-type action with a special patented recoil reduction system, the USP is built to take the punishment of powerful +P and +P+ loads. The recoil reduction system reduces recoil effects on pistol components and also lowers the recoil forces felt by the shooter. The USP recoil reduction system is insensitive to ammunition types and requires no special adjustment or maintenance. It functions effectively in all USP models.

All USPs use a fiber-reinforced polymer frame stiffened by stainless steel inserts at areas subject to stress and friction. HK pioneered the use of polymer materials in production handguns more than ninety years ago with the development of the VP70Z and P9S pistols. Molded into the polymer frame of USPs, universal mounting grooves allow a variety of accessories like the HK Universal Tactical Light to be quickly installed or removed. The Universal Tactical Light is a compact, high intensity light developed exclusively for HK.

By using a modular approach to the internal components, the control lever function of the USP can be switched from the left to the right side of the pistol for left-handed shooters. The USP can also be converted from one type of trigger firing mode to another. This includes combination double-action and single-action (DA/SA) modes and double action only (DAO) modes.

The USP is available in nine trigger/firing mode configurations and three calibers—.45 ACP, .40 S&W, and 9mm. Two finishes are currently available; stainless steel and HK’s proprietary "Hostile Environment" dark blued finish. Both protect the major metal components of the USP from corrosion, including exposure to salt water.

A variant of the USP9 was adopted by the German government as the P8 and has been distributed to every German military branch. This pistol differs from the USP9 in that the safety selector is enlarged and its positions are reversed: up is fire, down is safe. Also, the "S" and "F" lettering appears on the frame ahead of the switch, rather than on the selector switch itself. Rifling is traditional land-and-groove, rather than HK's usual polygonal rifling.

All HK USP pistols are covered by a lifetime warranty for the original retail purchaser.

Heckler & Koch USP Compact

USP9C [USP357C] [USP40C] [USP45C]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .40 S&W, .45 ACP

Operation: Short Recoil

Action: Double/Single, DAO

Safety: Frame-mounted with decocker, left or right side

Sights: Fixed 3-Dot, Fixed tritium

Barrel: 3.58" (90mm)

Weight: 1.47 lbs. (666 g)

Magazine Capacity:
8-13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9	**9mm Para**	**Medium Pistol**	**7**	**15 clip**	**SA**	**7M**	**0.66**	**2/24 hrs**	**800 ¥**
USP40	**.40 S&W**	**Medium Pistol**	**7**	**12 clip**	**SA**	**8M**	**0.69**	**2/24 hrs**	**800 ¥**
USP45	**.45 ACP**	**Medium Pistol**	**7**	**8 clip**	**SA**	**8M**	**0.72**	**2/24 hrs**	**875 ¥**

- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.
- USP Accessories.

The HK USP Compact is a small frame pistol capable of firing the most powerful cartridges in 9mm, .40 S&W, .357 SIG, and .45 ACP. Based on the full-size USP models, these handy pistols combine compact size with optimum effective shooting performance.

USP Compacts are smaller and lighter than large frame USPs. The reduction in trigger reach and grip circumference increases concealability and enhances shooting ergonomics. Unlike some subcompact semiautomatic pistols that use a difficult to shoot “two-finger grip” frame, the USP Compact uses a narrow, full-hand grip frame with a choice of interchangeable extended or flush-fitting magazine floorplates. This makes the pistol easy to shoot without sacrificing concealability.

All variants of the USP Compact have modified contoured slide and frame for effective concealability. Variants 1-7 also have a no snag, bobbed hammer. The extended slide release is contoured to reduce wear and tear on clothing when the pistol is carried concealed.

Using a modified linkless Browning-type action, the USP Compact is built to take the punishment of high energy +P and +P+ loads.

The USP Compact can also be converted from one type of trigger firing mode to another. This includes combination double-action and single-action modes and double action only modes. The USP Compact is currently available in four calibers and nine trigger/firing mode configurations, or virtually any firing mode imaginable.

To reduce the length of the slide and barrel on the USP Compact, the mechanical recoil reduction system found on large frame USPs has been replaced by a specially designed flat compression spring contained in the captive recoil spring assembly by a polymer absorber bushing. Service life is still engineered to exceed 20,000 rounds.

The frame mounted control lever, a combination safety and decocking lever, has a slimline profile for compactness but is still quickly accessible, unlike the slide mounted safeties common on many semiautomatic pistols.

Simple to maintain, the USP Compact is a reliable, safe, accurate, and highly concealable pistol with the performance of a full size handgun.

The USP9 Compact was adopted by several German state police agencies as the P10.

All HK USP pistols are covered by a lifetime warranty for the original retail purchaser.

Heckler & Koch USP Expert

USP45 Expert [USP40 Expert w/UTL]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .40 S&W, .45 ACP

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted with decocker, left or right side

Sights: Adjustable 3-Dot

Barrel: 5.2" (132mm)

Weight: 2.3 lbs. (1 kg)

Magazine Capacity:
12-15 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9EXP	**9mm Para**	**Heavy Pistol**	**5**	**15 clip**	**SA**	**7M**	**0.87**	**4/48 hrs**	**1355 ¥**
USP40EXP	**.40 S&W**	**Heavy Pistol**	**5**	**13 clip**	**SA**	**8M**	**0.88**	**4/48 hrs**	**1355 ¥**
USP45EXP	**.45 ACP**	**Heavy Pistol**	**5**	**12 clip**	**SA**	**8M**	**0.85**	**4/48 hrs**	**1355 ¥**

- With Smartlink 2, +450¥.
- USP Accessories.

Using the common lineage of the USP and developed in conjunction with internationally renowned target shooters, the USP Expert achieves the highest levels of accuracy by combining features of the Match, Tactical, and Mark 23 pistols with a new slide design. The result is a USP ideally suited to IPSC (International Practical Shooting Competition) and other practical target shooting applications.

A long target barrel with an O-ring seal optimizes accuracy. The O-ring is an innovative design feature found on the Mark 23, USP Match, and USP Tactical pistols—the tough rubber O-ring seals and centers the barrel in the slide until the barrel unlocks after firing. The O-ring increases accuracy, lasts more than 20,000 rounds, and can be quickly replaced without tools in seconds.

Other standard features include:

- Ambidextrous control levers located on both sides of the frame
- Long 190mm (7.5 inches) sight radius aids in aiming
- Patented HK USP recoil reduction system
- Match grade single-action and double-action trigger pull with adjustable trigger stop eliminates overtravel
- Low profile target sights with micrometer adjustment for windage and elevation
- Elongated target slide is milled from a single piece of high grade steel. The additional length aids the balance of the USP Expert during target shooting.

A near-perfect .40 S&W tactical pistol, the USP40 Expert has a special jet funnel magazine well extension to speed reloading of the 16-round magazine. Other features include universal mounting grooves for installing accessories like the HK UTL MK II weapons light or a laser aimer. Design also features a high-temperature rubber O-ring. Rear target sight features micrometer adjustment for windage and elevation. Optional tritium adjustable sights also available.

Heckler & Koch USP Match

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Para, .40 S&W, .45 ACP

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted with decocker, left or right side

Sights: Adjustable 3-Dot

Barrel: 6.02" (152mm)

Weight: 2.6 lbs. (1.18 kg)

Magazine Capacity:
12-15 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP9 Match	**9mm Para**	**Heavy Pistol**	**5**	**15 clip**	**SA**	**7M**	**1.2**	**6/72 hrs**	**850 ¥**
USP40 Match	**.40 S&W**	**Heavy Pistol**	**5**	**13 clip**	**SA**	**8M**	**1.2**	**6/72 hrs**	**850 ¥**
USP45 Match	**.45 ACP**	**Heavy Pistol**	**5**	**12 clip**	**SA**	**8M**	**1.2**	**6/72 hrs**	**850 ¥**

- This weapon's underbarrel mounting space is used by the detachable barrel weight system. The weight system offers one point of recoil compensation.
- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.
- USP Accessories.

Based on the functional lines of the USP, the USP Match is designed and manufactured to achieve top class accuracy. The USP Match pistol approches the precision found on the Mark 23 by adding a special barrel weight system, extended target barrel, adjustable trigger, and target sights to the USP .45ACP.

Heckler & Koch USP / MP

Shown with optional UTL light attachment.

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Parabellum

Operation: Short Recoil

Action: Single/Double

Safety: Frame-mounted with decocker, left or right side

Sights: Adjustable 3-Dot

Barrel: 4.92" (125mm)

Weight: 2.64 lbs. (1.2 kg)

Magazine Capacity:
15/30, detachable box

Modes of fire:
Safe, semi-automatic, fully automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
USP/MP	**9mm Para**	**Medium Pistol**	**5**	**15 clip**	**SA/FA**	**7M**	**1.6**	**12/18 days**	**1,400 ¥**

- With matte finish stainless steel slide, +60¥.
- With Smartlink 2, +450¥.
- USP Accessories.

The USP/MP (Universal Self-loading Pistol/Machine Pistol) is a selective-fire variant of the HK USP9. The USP/MP retains all of the features of the USP9, but also includes an additional full-automatic setting on the weapon's control lever and a threaded barrel for mounting suppressors or gas-venting systems.

The control lever, a combination safety and decocking lever, is frame mounted and quickly accessible, unlike the slide mounted safeties common on many semi-automatic pistols. Of course, on the SL2 model, these functions can be controlled cybernetically.

Using a modified Browning-type action with a special patented recoil reduction system, the USP is built to take the punishment of powerful +P and +P+ loads. The recoil reduction system reduces recoil effects on pistol components and also lowers the recoil forces felt by the shooter. The USP recoil reduction system is insensitive to ammunition types and requires no special adjustment or maintenance. It functions effectively in all USP models.

Additionally, HK SL Series ADVAT.328 compliant Smartlink system can be had as an option, making this pistol the choice for many CT operators and Special Forces professionals worldwide.

Firearms Creation Guide Design, USP/MP

	Description	DC	Wt	Con	Totals
Frame	Machine Pistol Frame	85	2	5	Weapon Type: Machine Pistol
Cartridge	9mm Parabellum				Conceal: 5
Construction	Polymer-resin Construction (3)	10	-12%		Ammunition Capacity: 15 Clip
Ammunition Cap	15 Clip	5			Firing Mode: SA/FA
Design Option	Recoil Operated				Damage: 6L
Design Option	Standard Feed				Weight: 1.6kg
Design Option	Weight Modification	2	-0.1		Spaces: Under, Barrel, Grip
Design Option	Recoil Reduction System	15			Grade: Security
Design Option					Technology Rating: SOTA
Design Option					Design Cost: 140
Design Option					Availability: 12/18 days
	Totals	**117**	**1.6**	**5**	Cost (¥): 1,400 ¥

Kahr K Series

Kahr Arms
Worchester, MA UCAS

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: Double Action Only

Safety: None

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: 3.5" (102mm)

Weight: 1.56 lbs. (708 g)

Magazine Capacity:
6-7 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
K9	**9mm Para**	**Light Pistol**	**7**	**7 clip**	**SA**	**7M**	**0.71**	**3/36 hrs**	**650 ¥**
K40	**.40 S&W**	**Light Pistol**	**7**	**6 clip**	**SA**	**8M**	**0.74**	**3/36 hrs**	**650 ¥**

The Kahr K design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

Kahr K Series pistols are available in stainless steel. +60¥.

Big gun performance in a small package.

The Kahr design is original, creating the smallest package possible in two serious defensive calibers - 9mm and .40 S&W. The union of advanced design, quality materials and proper construction makes the Kahr the smallest, thinnest, most reliable full power compact pistol.

Unless the gun is 100% reliable, all else is meaningless. Kahr pistols have proven their reliability in testing by Federal, State and local agencies. Ergonomically, the Kahr pistol excels. The gun is easy to shoot well, and comfortable to carry for extended periods due to its thin profile.

The Kahr K Series pistols are constucted of either 4140 ordnance steel or 416 stainless steel and are available in two attractive finishes: matte black or matte stainless steel.

So when it comes to protecting your life, choose Kahr.

Information above courtesy of Kahr Arms.

Kahr P Series

Kahr Arms
Worchester, MA UCAS

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: Double Action Only

Safety: No external safety

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: 3.5" (102mm)

Weight: 1.05 lbs. (480 g)

Magazine Capacity:
6-7 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
PM9	**9mm Para**	**Light Pistol**	**8**	**6 clip**	**SA**	**7M**	**0.45**	**3/36 hrs**	**660 ¥**
P9	**9mm Para**	**Light Pistol**	**7**	**7 clip**	**SA**	**7M**	**0.50**	**3/36 hrs**	**630 ¥**
P40	**.40 S&W**	**Light Pistol**	**7**	**6 clip**	**SA**	**8M**	**0.53**	**3/36 hrs**	**630 ¥**

The Kahr P design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

Big gun performance in a small package.

The Kahr design is original, creating the smallest package possible in two serious defensive calibers - 9mm and .40 S&W. The union of advanced design, quality materials and proper construction makes the Kahr the smallest, thinnest, most reliable full power compact pistol.

Unless the gun is 100% reliable, all else is meaningless. Kahr pistols have proven their reliability in testing by Federal, State and local agencies. Ergonomically, the Kahr pistol excels. The gun is easy to shoot well, and comfortable to carry for extended periods due to its thin profile.

The Kahr K Series pistols are constucted of either ordnance steel or 4140 stainless steel, and are available in two attractive finishes: matte black or matte stainless steel.

So when it comes to protecting your life, choose Kahr.

Information above courtesy of Kahr Arms.

Kahr MK Series

Kahr Arms
Worchester, MA UCAS

9mm Parabellum, .40 S&W

Operation: Short Recoil

Action: Double Action Only

Safety: No external safety

Sights: Fixed 3-Dot, AO Tritium Big Dot

Barrel: 3.08" (78mm)

Weight: 1.38 lbs. (626 g)

Magazine Capacity:
5-6 rounds, single stack

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MK9	**9mm Para**	**Light Pistol**	**8**	**6 clip**	**SA**	**7M**	**0.68**	**3/36 hrs**	**675 ¥**
MK40	**.40 S&W**	**Light Pistol**	**8**	**5 clip**	**SA**	**8M**	**0.68**	**3/36 hrs**	**675 ¥**

- The Kahr MK design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3.
- Available with a duo-tone finish, stainless steel frame, black finish on 4140 steel slide. +50 ¥.

Big gun performance in a small package.

The Kahr design is original, creating the smallest package possible in two serious defensive calibers - 9mm and .40 S&W. The union of advanced design, quality materials and proper construction makes the Kahr the smallest, thinnest, most reliable full power compact pistol.

Unless the gun is 100% reliable, all else is meaningless. Kahr pistols have proven their reliability in testing by Federal, State and local agencies. Ergonomically, the Kahr pistol excels. The gun is easy to shoot well, and comfortable to carry for extended periods due to its thin profile.

The Kahr MK Series pistols are ultra-compact (5.35"Lx4.0"Hx0.94"W) and constucted of 416 stainless steel with a matte finish.

So when it comes to protecting your life, choose Kahr.

Information above courtesy of Kahr Arms.

Kimber Custom Defense Package 1911

Custom CDP [Other CDP Models]

Kimber Manufacturing, Inc.
Yonkers, NY UCAS

.45 ACP

Operation: Short Recoil

Action: Single

Safety: Frame-mounted, ambidextrous

Sights:
Fixed 3-Dot, Fixed Tritium

Barrel: Varies

Weight: Varies

Magazine Capacity:
7 rounds, single stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Ultra CDP	**.45 ACP**	**Light Pistol**	**7**	**7 clip**	**SA**	**8M**	**0.7**	**4/48 hrs**	**1100 ¥**
Compact CDP	**.45 ACP**	**Medium Pistol**	**7**	**7 clip**	**SA**	**8M**	**0.8**	**4/48 hrs**	**1100 ¥**
Pro CDP	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**0.8**	**4/48 hrs**	**1100 ¥**
Custom CDP	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**0.9**	**4/48 hrs**	**1100 ¥**

The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

8-round .45 ACP magazines are available from Wilson Combat. 30¥ each. 2/24 hours Availability.

Built entirely in the Kimber Custom Shop, the CDP (Custom Defense Package) Series stands alone in the world of no compromise carry pistols. Based on John M. Browning's 1911 design and chambered in the powerful .45 ACP cartridge, they include features found only on custom-made defense pistols from the finest pistolsmiths.

CDP pistols feature a lightweight aluminum frame machined from a 7075-T7 aluminum block and stain-less steel slide. A carry bevel treatment rounds and blends corners and edges so the pistol cannot grab or snag on clothing and holsters. Frames include 30 LPI front strap checkering for a positive grip regardless of the conditions. Flat, checkered mainspring housing and hand-checkered double diamond rosewood grips aid in control.

Meprolight Tritium three dot (green) night sights, extended ambidextrous thumb safety, match grade Premium Aluminum Trigger, beveled magazine well, stainless steel small parts, high ride beavertail grip safety and beveled slide serrations are also standard.

Built for long term carry, CDP pistols weigh between 25 and 31 ounces. At the same time, they are completely dependable, something especially critical in a defensive situation. The proven 1911 platform even makes a CDP the best choice when compared to other semi-automatic designs.

All the Custom CDP features are added at stages during the normal manufacturing process, greatly reducing costs. This allows a savings of over $500 to be passed along. With a Kimber CDP there is no compromise.

All II Series pistols include a passive firing pin block safety.

The CDP is available in four sizes to fit your needs:

> **The Ultra CDP™** is based on the Stainless Ultra Carry and includes CDP features like carry melt treatment for rounded and blended corners, Meprolight Tritium three dot (green) night sights, 30 LPI checkered front strap, extended ambidextrous thumb safety, match grade Premium Aluminum Trigger, hand-checkered double diamond rosewood grips and special Custom Shop markings. Barrel length is 3 inches and weight is just 25 ounces.
>
> **The Compact CDP™** is based on the Compact Aluminum Stainless and has all the features of the Ultra CDP, including stainless steel small parts on the frame. Barrel length is 4 inches and weight is only 28 ounces.
>
> **The Pro CDP™** has all the features of the Compact CDP, including a 4-inch bushingless bull barrel. It also has an aluminum frame with full length grip. Weight is only 28 ounces.
>
> **The Custom CDP™** is based on the Stainless, and is the first full size Kimber with an aluminum frame. It has all the features of the Pro CDP, but has a barrel length of five inches, along with front and rear beveled slide serrations and a stainless steel match grade barrel bushing. Weight is 31 ounces.

Information above courtesy of Kimber America.

Magnum Research Baby Eagle (IMI Jericho)

9400 [9400RS] [9400RB]

Magnum Research, Inc.
Minneapolis, MN UCAS

9mm Para, .40 S&W, .45 ACP

Operation: Short Recoil

Action: Double/Single

Safety: Ambidextrous w/ decocker, slide-mounted

Sights: Fixed 3-Dot

Barrel: 4.72" (120mm)

Weight: 2.2 lbs. (1 kg)

Magazine Capacity:
12-16 rounds, double stacked

Modes of fire:
Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
9900	9mm Para	Med. Pistol	6	16 clip	SA	7M	1	2/24 hrs	500 ¥
9900RS	9mm Para	Med. Pistol	6	16 clip	SA	7M	0.92	2/24 hrs	500 ¥
9900RB	9mm Para	Med. Pistol	7	13 clip	SA	7M	0.87	2/24 hrs	500 ¥
9900BL	9mm Para	Med. Pistol	7	13 clip	SA	7M	0.62	2/24 hrs	500 ¥
9400	.40 S&W	Med. Pistol	6	12 clip	SA	8M	1	2/24 hrs	500 ¥
9400RS	.40 S&W	Med. Pistol	6	12 clip	SA	8M	0.92	2/24 hrs	500 ¥
9400RB	.40 S&W	Med. Pistol	7	9 clip	SA	8M	0.87	2/24 hrs	500 ¥
9400BL	.40 S&W	Med. Pistol	7	9 clip	SA	8M	0.62	2/24 hrs	500 ¥
4500RS	.45 ACP	Med. Pistol	6	10 clip	SA	8M	0.92	2/24 hrs	500 ¥

- Good choice for left-handers.

The baby of the Desert Eagle family offers an excellent handgun value and plenty of firepower. Just like the Desert Eagle, the Baby Eagle features a barrel with polygonal rifling to reduce barrel wear and enhance contact between the bullet and the bore. The grip is exceptionally comfortable and well-liked by shooters.

The Baby Eagle is available in 3 calibers, with variations resulting in a total of 9 different models. The compact RB model (short frame with 3.5"/89mm barrel) and semi-compact RS model (3.7"/94mm barrel) pistols have the same excellent shooting characteristics as the standard Baby Eagle and are ideal for shooters with smaller hands. All Baby Eagles are black and all are made of steel except for the BL models, which have polymer frames.

More information on Baby Eagle pistols can be found at Magnum Research.

Desert Eagle XXVI

DE44 [DE50]

Magnum Research, Inc.
Minneapolis, MN UCAS

Various Chamberings

Operation: Gas

Action: Single Action

Safety: Ambidextrous, slide-mounted

Sights: Fixed 3-Dot

Barrel: 6" (152mm), 10" (254mm)

Weight: 3.96 lbs. (1.8 kg)

Magazine Capacity: 9 rounds, staggered

Modes of fire: Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
DE357	.357 Mag	SMG	5	9 clip	SA	9M	1.8	4/48 hrs	1,150 ¥
DE41	.41 Mag	SMG	5	8 clip	SA	9M	1.9	"	1,150 ¥
DE44	.44 Mag	SMG	5	8 clip	SA	10M	1.9	"	1,150 ¥
DE440	.440 CBM	SMG	5	7 clip	SA	9S	2	"	1,150 ¥
DE50	.50 AE	SMG	5	7 clip	SA	9S	2	"	1,150 ¥
MkXXVI	All	^	NA	^	^	^	14	5/7 days	4,550 ¥

- Double recoil with .440 Cor-Bon and .50AE models.
- 10" barrel available. -1 conceal when used. See ranges for 10" barrels.
- See Desert Eagle accessories.

The Desert Eagle Pistol is a modular, gas-operated, semi-automatic pistol designed for use with magnum cartridges. The barrel is locked in place, assuring a high degree of accuracy. Polygonal rifling reduces barrel wear and enhances the obturation between the bullet and the bore, thus increasing accuracy. Anatomically formed grip, ideal hand seating angle and comfortable grip dimensions permit rapid, accurate, instinctive shooting. The combat-type trigger guard is designed for two-handed shooting.

The **Mark XXVI Component System** package includes the following components in a high quality aluminum carrying case. (.440 Cor-Bon Magnum and .50 Action Express use .44 Magnum bolt)

- 1 Desert Eagle frame/trigger/slide assembly
- .357 Magnum Components: One 6" Barrel, one 10" barrel, one .357 Magnum bolt face, one .357 magazine.
- .41 Magnum Components: One 6" Barrel, one 10" barrel, one .41 Magnum bolt, one .41 magazine.
- .44 Magnum Components: One 6" Barrel, one 10" barrel, one .44 Magnum bolt, one .44 magazine.
- .440 Cor-Bon Magnum Components: One 6" Barrel, one 10" barrel. (Uses .50AE magazine.)
- .50 Action Express Components: One 6" Barrel, one 10" barrel, one .50AE magazine.

All barrels are dovetailed and drilled for a variety of scope mounts. Custom finishes are available (polished/blued, bright nickel, matte chrome, brushed chrome, polished/blued with gold appointments, satin nickel and polished chrome) and can be added to metal parts for an additional charge of just 630¥. 24 karat gold and titanium finishes can be added for 1,610¥.

More information on Desert Eagle pistols can be found at Magnum Research.

Ruger SP101

321XL [331X]

Sturm, Ruger & Co., Inc.
Southport, CT UCAS

Various Chamberings

Operation: Revolver

Action: Double Action

Safety: Transfer Bar

Sights:
Rear notch, front post

Barrel: Varies

Weight: Varies

Magazine Capacity:
5 rounds, cylinder

Modes of fire:
Double Action, Single Action

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
241	.22 LR	Light Pistol	6	6 cyl	SA	4L	0.94	2/24 hrs	480 ¥
3231	.32 H&R Mag	Med. Pistol	7	6 cyl	SA	6L	0.85	2/24 hrs	480 ¥
3241	.32 H&R Mag	Med. Pistol	6	6 cyl	SA	6L	0.94	2/24 hrs	480 ¥
321X	.357 Mag	Med. Pistol	7	5 cyl	SA	9M	0.7	2/24 hrs	480 ¥
331X	.357 Mag	Med. Pistol	7	5 cyl	SA	9M	0.77	2/24 hrs	480 ¥
321XL	.357 Mag	Med. Pistol	7	5 cyl	SA	9M	0.7	2/24 hrs	480 ¥

- All models chambered in .357 Magnum may also fire the .38 Special cartridge. When using .38 Special ammunition, drop Damage Code to 5M and range to Light Pistol.
- Model 321XL has a concealed hammer (DAO). All others have a hammer spur and can be fired single-action.
- .22 LR and .32 H&R models include an adjustable rear sight.

The sophisticated engineering in Ruger double-action revolvers is evident not only in how they are put together, but in how quickly they can be disassembled. Composed of a series of integrated subassemblies, the SP101 can be fieldstripped to their basic components in seconds for cleaning without the use of tools. Ruger's philosophy of strength, simplicity, and ease of maintenance has been applied throughout.

The SP101 represents significant improvements over every other double-action revolver available in the world today. Frame widths are increased in critical areas that support the barrel; both frame sidewalls are solid and integral sections of the frame, offering additional strength and rigidity. Cylinder-locking notches are offset and cut into the thick part of the cylinder walls between the centers of the chambers rather than directly over them. In its firing position, the cylinder is securely locked to the frame in two places: at the rear by the traditional cylinder pin, and at the front of the crane by a large, unique spring-loaded latch. This helps ensure proper cylinder and barrel alignment for optimum accuracy.

All Ruger double-action revolvers feature Ruger's Transfer Bar Safety System. The transfer bar, raised into firing position only as the trigger is pulled fully to the rear, transmits the energy of the hammer blow to the firing pin.

Information above courtesy of Ruger Firearms.

Ruger Super Redhawk

KSRH7454 [KSRH9] [Alaskan]

Sturm, Ruger & Co., Inc.
Southport, CT UCAS

Various Chamberings

Operation: Revolver

Action: Double Action

Safety: Transfer Bar

Sights: Adjustable rear, Ramped post front

Barrel: 7.5", 9.5" (190/241mm)

Weight: Varies

Magazine Capacity: 6 rounds, cylinder

Modes of fire: Double Action, Single Action

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SR44	**.44 Mag**	**SMG**	**5**	**6 cyl**	**SA**	**10M**	**1.5**	**2/24 hrs**	**650 ¥**
SR454	**.454 Casull**	**SMG**	**5**	**6 cyl**	**SA**	**12M/8M**	**1.5**	**2/24 hrs**	**750 ¥**
SR480	**.480 Ruger**	**SMG**	**5**	**6 cyl**	**SA**	**11M**	**1.5**	**2/24 hrs**	**750 ¥**
Alaskan	**.454 Casull**	**Heavy Pistol**	**6**	**6 cyl**	**SA**	**11M/8M**	**1.2**	**2/24 hrs**	**720 ¥**
Alaskan	**.480 Ruger**	**Heavy Pistol**	**6**	**6 cyl**	**SA**	**11M**	**1.2**	**2/24 hrs**	**720 ¥**

- Stats above are for 7" barreled versions. All models except Alaskan are available in 9" barrel version. -1 Conceal.
- Double all uncompensated recoil for .454 Casull and .480 Ruger models.
- Models chambered in .454 Casull may also fire the .45 Colt cartridge, with a Damage Code of 8M. No recoil penalty.
- All models include integral scope mounts and detachable 1" scope rings.

When the Ruger Redhawk was first introduced in 1979, it signaled an important advance in the design of heavy-frame, double-action revolvers. Ruger's patented double-frame cylinder lock was first used in this design. The original Redhawk was also the first double-action revolver specifically designed to handle the powerful .44 Magnum cartridge, and it pioneered the patented Ruger "single spring" mechanism for both hammer and trigger. Now these and other genuinely advanced features are also built into the impressive Super Redhawk and other Ruger revolvers as well. Available in .44 Magnum, .45 Long Colt, .454 Casull, and .480 Ruger calibers, the Super Redhawk is world-renowned for strength, safety, and rugged reliability.

The Super Redhawk design features extra metal in the top strap and in the critical areas below and surrounding the barrel threads. The design includes no sideplate, so both sidewalls remain intact as integral sections of the frame for increased strength and rigidity. This important advance allows these revolvers to withstand the stresses imposed by the powerful calibers.

The Super Redhawk, chambered in .480 Ruger and the powerful .454 Casull, is ideal for sportsmen using a handgun to hunt big game, and is also popular among metallic silhouette shooters. The strong extended frame and use of the Ruger-patented Integral Scope Mounting System on the wide top strap provide a solid scope-mounting surface, making the Super Redhawk perfect for big-game hunting. Patented Ruger cushioned grips help absorb recoil for even more comfortable handling. The .454 also accepts .45 Long Colt cartridges.

The Super Redhawk Alaskan features a six-shot cylinder and is chambered for either .454 Casull and .45 Colt, or .480 Ruger, and is equipped with a Hogue® Monogrip® to help cushion recoil. The Alaskan features a 2 1/2” hammer-forged barrel fitted inside the unique Super Redhawk extended frame and weighs only 42 ounces, making it the most compact revolver ever offered in these calibers. The Alaskan features proprietary Ruger stainless steel and Sturm, Ruger’s famous triple locking cylinder mechanism, which provides legendary reliability and strength.

Information above courtesy of Ruger Firearms.

Ruger Thunderbolt

Sturm, Ruger & Co., Inc.
Southport, CT UCAS

10mm Caseless (Stacked)

Operation: Metalstorm

Action: Double Action Only

Safety: Ambi thumb, SLSS

Sights: Fixed rear notch, front post

Barrels: 6.5" (165mm)

Weight: Varies

Magazine Capacity:
12 (6x2) rounds, breech

Cyclic Rate:
240 to 90,000 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
TBOLT	**10mm**	**Heavy Pistol**	**5**	**12 b**	**SA/BF/FA**	**9M**	**1.25**	**14/12 days**	**1,250 ¥**

- Includes integral laser sight. Smartlink Level 1 +450 ¥. Smartlink Level 2 +900 ¥.
- No recoil penalties apply to the first burst of a Combat Phase.

The Thunderbolt was developed by the Lone Star Corporation for use by tactical officers on their SWAT and FRT teams as a compact automatic assault weapon. Mass production of the Thunderbolt was licensed to Sturm, Ruger & Co. of Southport, CT UCAS. Production began on June 6, 2054.

The Thunderbolt incorporates technology developed by Metalstorm LTD in the 1990s. This technology, also used in shipboard missile defense and land-based area denial systems, allows the Thunderbolt to acheive an incredibly fast rate of fire so that recoil has less of an effect on bullet pattern dispersal. This gives the Thunderbolt and effective range out to 100 meters under ideal conditions.

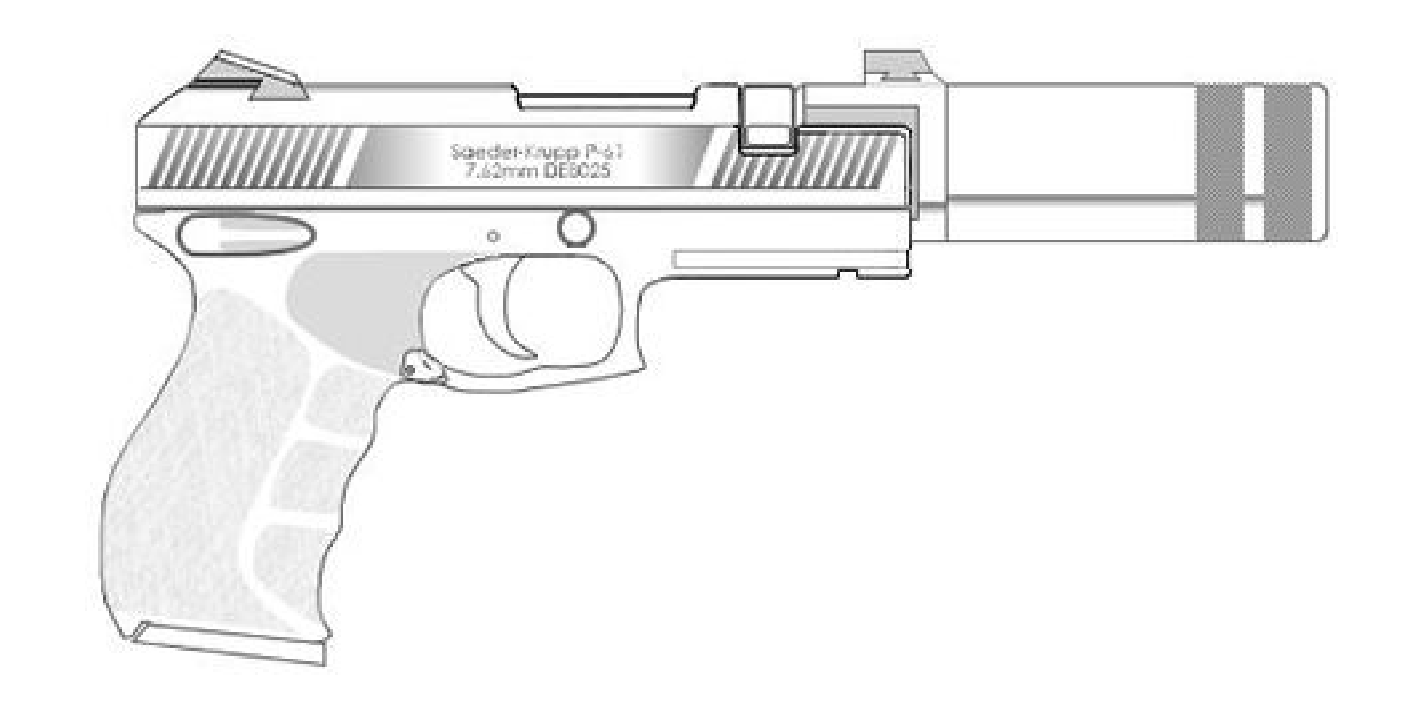
The Metalstorm method of operation differs substantially from conventional forms of automatic firearm operation. Instead of using the conventional cartridge case that is moved mechanically from a magazine and into a chamber, caseless rounds (bullet, propellant, primer) are stored as a linear stack and are placed inside of the barrel itself (the Thunderbolt employs two barrels with a stack of six rounds in each). From there they are ignitied electronically. When the first round is fired, the bullet behind it acts as a breech block. Because there are no loading or extracting cycles, several rounds can be ignited nearly simultaneously. This is how the Thunderbolt achieves the incredible rate of fire of up to 90,000 rounds per minute (in three-round burst mode).

Because the Metalstorm system is totally electronic, the rate of fire can be adjusted anywhere from 240 rpm to 90,000 rpm, either through a portable terminal or on-the-fly through Smartlink cyberware. Certain limitations do apply in the interest of operator safety. If the operator wishes to engage full-auto mode, the rate of fire is limited to 1,000 rounds per minute, with a recommended rate of fire of 450 rounds per minute.

The use of a totally electronic firing system also allows for an unprecidented level of cybernetic integration. Electro-mechanical modifications to conventional firearms that would be impractical to implement are easily integrated into the Thunderbolt's electronic operating system.

On June 6, 2055, the Lone Star Corporation released the exclusive contract binding Ruger's sales of the Thunderbolt only to Lone Star personnel. As of that date, the Thunderbolt has been available to all qualified military and law enforcement users. Check your local laws for availability.

Saeder-Krupp Special Munitions P-61



[P-61 with LAM]

Saeder-Krupp Special Munitions
Essen, Germany

7.62x30mm Caseless DE8025

Operation: Gas

Action: Double Action Only

Safety: Biometric/SLSN

Sights: Guttersnipe, Fixed 3-dot, Adjustable or none

Barrel: 3.5" (88mm)

Weight: 1.56 lbs. (708 g)

Magazine Capacity:
8 rounds, detachable box

Modes of fire:
Single shot, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P61	**7.62x30mm**	**Heavy Pistol**	**5**	**8/9* clip**	**SS/SA**	**7M**	**0.7**	**10/6 days**	**2,145 ¥**
P61HC	**7.62x30mm**	**Heavy Pistol**	**5**	**10/16* clip**	**SS/SA**	**7M**	**0.7**	**10/6 days**	**2,145 ¥**

A whitelight + visible/infrared Laser Aiming Module (LAM) is available, +600¥.

This weapon uses its own specialized ammunition. DE8025.01 armor piercing ammunition (x0.75 Armor Rating) 200¥ per 50 rounds, 6/48 hrs availability. DE8025.04 frangible ammunition (see frangible) 250¥ per 50 rounds, 6/48 hrs availability.

An additional +1 modifier may be applied to Perception Tests at Short Range if slide lock is engaged. SS Mode only while slide lock is engaged. Locking/unlocking can be performed as part of the some "Ready Weapon" Simple Action required to chamber a new round.

*This weapon can use both electronic and mechanical forms of cartridge ignition. Magazine capacity differs depending on which type of ignition system is used. Electronic/Mechanical. More info.

See rules for suppression.

Saeder-Krupp's Special Munition's Branch is again leading the way in firearms technology with the new Pistole, Model 2061, or simply P-61.

The P-61 is an extremely reliable, state-of-the-art, integrally suppressed pistol readily capable of ranges exceeding 75 meters with the specialized subsonic ammunition it is designed to fire. It is a polymer-framed, gas-operated, electrically-fired DAO pistol using the caseless ammunition system. It is quite possibly the quietest combat-viable pistol ever devised.

The P-61 uses the 7.62x30mm DE8025 caseless cartridge: a specialized round using a unique, clean burning, polymer-based propellant compound developed by Dynamit Nobel, designed to keep weapon fouling down to an absolute minimum. The standard DE8025.01 round incorporates a light armor piercing, 155-grain match grade, molybdenum disulfide-coated bullet with a high ballistic coefficient for greatly enhanced long range performance and energy retention at subsonic velocities.

The integral suppressor is constructed of 7075-T6 aluminum for light weight and ultra-quiet operation. The advanced coaxial phase cancellation baffle design provides an incredible level of noise reduction with no visible muzzle flash. With the introduction of approximately 10cc of water to the suppressor, this system allows the P-61 an awesome -48dB of noise reduction. In the interest of optimal noise reduction, a lever at the rear of the suppressor can be flipped down to block gas flow to the operating system, thus keeping the weapon's slide from cycling. This lever also acts as a lock which engages a slot machined into the slide; dual insurance against cycling noise. Basic maintenance can be performed without disassembly of the suppressor unit. While the weapon can be fired without the suppressor attached, it is not recommended and is only suggested as an emergency measure.

Saeder Krupp's award-winning ADVAT.328-compliant Mk251.2 Smartlink targeting system is also a standard feature of the P-61, making it and unbeatable performer in stress-driven situations. A choice of backup iron sights include a fixed Novak 3-dot sight, an adjustable Bo-Mar type, or a low profile, low snag "guttersnipe" type sight. Alternately, the weapon is available without iron sights installed.

Though the P-61 has been thoroughly tested to meet all operational requirements of the elite German KSK special forces group, the electrical ignition module can be replaced by a mechanical striker assembly for those who do not wish to rely on electrical power to fire the gun. With the striker assembly in place, the weapon cannot be fired cybernetically. However, space at the bottom of the magazine that is usually consumed by the electrical firing system's power source is used to house one extra round of ammunition, increasing capacity to 9 rounds. Non-battery magazines are color coded to avoid confusion during operation. In the event that a non-battery magazine is accidentally chambered in a P-61 with the electrical firing system installed, the smartlink's onboard power supply is sufficient to fire about two magazines of ammunition. In this case, the smartlink system will issue a warning to the user. This redundancy may also come in handy during tactical magazine changes.

More information on the SKSM P-61 can be found here.

Firearms Creation Guide Design, P-61

	Description	DC	Wt	Con	Totals
Frame	Light Pistol Frame	25	0.5	6	Weapon Type: Light Pistol
Cartridge	7.62x30mm DE8025	-	-	-	Conceal: 5
Construction	Polymer-resin Construction (3)	8	-12%	-	Ammunition Capacity: 8 Clip
Ammunition Cap	8 Clip			-	Firing Mode: SS/SA
Design Option	Gas Operated	5	-	-	Damage: 7M
Design Option	Standard Feed	-	-	-	Weight: 700 g
Design Option	Caseless Ammunition Design	50	-10%	-	Spaces: Under
Design Option	Slide/Bolt Lock	5	-	-	Grade: Military
Design Option	Integral Suppressor	50	0.31	-1	Technology Rating: SOTA
Design Option	-	-	-	-	Design Cost: 128
Design Option	-	-	-	-	Availability: 10/6 days
	Totals	**143**	**0.70**	**5**	Cost (¥): 2,145 ¥

SIG Sauer Full Size Pistols

P220ST [P226]

Schweizerische Industrie Gesellschaft (SIG)
Neuhausen am Rheinfalls, CH

Various Chamberings

Operation: Short Recoil

Action: Single/Double

Safety: No external safety; decocker on left side of frame

Sights: Fixed 3-Dot/Tritium

Barrel: 4.4" (111mm)

Weight: 1.91 lbs. (870 g)

Magazine Capacity: 8-13 rounds, double stacked

Modes of fire: Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P226	9mm Para	Medium Pistol	6	15 clip	SA	7M	0.80	2/24 hrs	850 ¥
P226	.40 S&W	Medium Pistol	6	12 clip	SA	8M	0.87	2/24 hrs	850 ¥
P226	.357 SIG	Heavy Pistol	6	12 clip	SA	9M	0.87	2/24 hrs	850 ¥
P220	9mm Para	Medium Pistol	6	9 clip	SA	7M	0.79	4/48 hrs	870 ¥
P220	.38 Super	Heavy Pistol	6	9 clip	SA	8M	0.79	6/72 hrs	870 ¥
P220	.45 ACP	Medium Pistol	5	8 clip	SA	8M	0.79	2/24 hrs	870 ¥

- With Two-Tone finish (nickel slide, Nitrolon black frame) +50¥.
- ST version includes a stainless steel frame with accessory mounting rails machined into the dust cover. +0.30 kg, +50¥.

These are the SIG SAUER Classic pistols that have made SIGARMS famous throughout the military and law enforcement community. Precision engineered and built to give years of trouble-free service, these formidable weapons stand as the models against which all other semi-autos – including our own – must be judged.

The modern SIG SAUER pistol story began with the P220. Generally recognized as one of "the most accurate .45s right out of the box," it has earned an enviable combat record in hot spots around the world. Easy to operate and maintain, professionals who carry it especially appreciate two of its many safety features: the decocking lever and patented automatic firing pin safety block, which eliminates the need for an external manual safety and allows the pistol to be always ready for use. It is also one of the most controllable and accurate .45s available.

The P226 is the pistol that set the standard by which all other combat handguns are measured. In use by the UCAS Navy SEALs, Federal agents, and numerous law enforcement agencies across the globe, the P226 has continually proven itself. The P226's exceptional ergonomics and balance make this high capacity full-size pistol easy to fire. Its longer barrel yields better ballistic performance and accuracy. And its new solid stainless steel slide is Nitron™ treated for added strength and wear resistance. The P226 is available in 9mm, .357 SIG or .40 S&W. An optional barrel allows conversion from .357 SIG to .40 S&W.

All SIG SAUER full-size pistols are available with stainless steel frames which have an accessory rail built into the dust cover.

Distributed by J.P. Sauer & Sohns GmbH, Eckernforde, Germany.

SIG Pro Pistols

Schweizerische Industrie Gesellschaft (SIG)
Neuhausen am Rheinfalls, CH

9mm Para, .357 SIG, .40 S&W

Operation: Short Recoil

Action: Single/Double

Safety: No external safety; decocker on left side of frame

Sights: Fixed 3-Dot/Tritium

Barrel: 3.9" (100mm)

Weight: 1.7 lbs. (771 g)

Magazine Capacity:
12-13 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SP2009	9mm Para	Medium Pistol	6	13 clip	SA	7M	0.7	2/24 hrs	640 ¥
SP2022	9mm Para	Medium Pistol	6	13 clip	SA	7M	0.7	2/24 hrs	640 ¥
SP2340	.40 S&W	Medium Pistol	6	12 clip	SA	8M	0.8	2/24 hrs	640 ¥
SP2340	.357 SIG	Heavy Pistol	6	12 clip	SA	9M	0.8	2/24 hrs	640 ¥

With Two-Tone finish (nickel slide, Nitrolon black frame) +60¥.

The sig pro™ pistol represents the latest advance in modern handgun technology. Beginning with the fundamental design of the famous SIG P210, our Swiss design team developed an innovative frame architecture that takes full advantage of space-age materials while enabling it to withstand high stress.

Lightweight and requiring no maintenance, our polymer frame features an integral accessory rail for mounting SIG laser or SIG tactical light systems. The frame houses fewer moving parts than most semi-autos, and those parts fit together precisely, giving you that characteristically smooth, dependable action that has become a SIG trademark. The slide is machined from a solid block of stainless steel and treated with SIG's unique Nitron™ finish for exceptional durability and corrosion resistance. All controls and the trigger are Ilaflon®-coated for added lubricity, excellent wear and corrosion resistance greater than stainless steel. Chances are the sig pro is the most corrosion resistant pistol available.

The sig pro Two-Tone model comes with a silver color, stainless steel slide and two-tone grips, giving a whole new look to a proven performer.

The sig pro has an integral fire control unit that combines hammer and sear in one modular unit. This allows the sig pro to be converted from single-action/double-action to double-action-only. The sig pro comes with a modular interchangeable grip system: a smaller composite grip for those with small hands; and a larger grip with rubberized inserts that reduce felt recoil and improve shooting comfort.

The sig pro is available in .357 SIG, .40 S&W and 9mm versions. And the SP2340 accepts conversion barrels, allowing you to switch calibers between .357 SIG and .40 S&W. We're uncompromising about the performance of our firearms and the sig pro is no exception. Quite simply, it shoots like a SIG.

Smith & Wesson Model 60

[3" Barrel]

Smith & Wesson
Springfield, MA. UCAS

.357 Magnum/.38 Special

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: Fixed notch/post, adjustable notch rear (3")

Barrel: 2.125" full lug (54mm)
3" full lug (76mm)

Weight: 1.41 lbs. (640 g)
1.5 lbs. (680 g)

Magazine Capacity:
5 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
2.125"	**.357 Mag**	**Light Pistol**	**7**	**5 cyl**	**SA**	**9M/6L**	**0.64**	**2/24 hrs**	**480 ¥**
3"	**.357 Mag**	**Medium Pistol**	**7**	**5 cyl**	**SA**	**9M/6L**	**0.68**	**2/24 hrs**	**500 ¥**

When using .38 Special ammunition, drop Damage Code to 6L and range to Light Pistol.

The 'J' frame Smith & Wesson Model 60 was the first stainless steel pistol produced anywhere in the world. Designed to combat the corrosion found on blued carbon steel firearms that are carried close to the body, the Model 60 is based on the the popular Model 36 "Chief's Special".

The Model 60 is available with 2.125" or 3" barrels. The 2.125" model includes a pinned serrated ramp front sight with a fixed notch rear sight to keep the weapon as snag-free as possible. The 3" model comes with the same serrated ramp front sight, but includes an adjustable rear sight. Both come with Uncle Mike's combat grips.

Smith & Wesson Model 610

Smith & Wesson
Springfield, MA. UCAS

10mm Auto/.40 S&W

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 4" (101mm)

Weight: 3.12 lbs. (1.4 kg)

Magazine Capacity:
6 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
610	**10mm Auto**	**Heavy Pistol**	**6**	**6 cyl**	**SA**	**9M**	**1.4**	**3/36 hrs**	**750 ¥**

When loading with clips, a number of rounds can be loaded in a single Simple Action after the cylinder has been extracted. Clips are available in 3 rounds (half-moon) or 6 rounds (full-moon). Cost is 1¥ per clip.

This weapon can also fire .40 S&W ammunition. Reduce damage to 8M, drop range to Medium Pistol.

Another of Smith & Wesson's popular 'N' frame revolvers, the model 610 is designed for action shooting and practical competition. It fires the rimless 10mm Auto cartridge, loaded using plastic clips holding either 3 or 6 rounds. The large, heavy frame, unfluted cylinder and heavy barrel lug contribute to low recoil and good reliability even when used continuously with full power ammunition.

The Model 610 is available with a 4" (101mm) barrel in stainless steel only, with a satin finish. It includes an adjustable rear sight and Hogue rubber grips.

Smith & Wesson Model 586 / 686

686, 4" (101mm) Barrel [2.5" | 6" | 8.375"]

Smith & Wesson
Springfield, MA. UCAS

.357 Magnum/.38 Special

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 2.5", 4", 6", 8.375"

Weight: Varies

Magazine Capacity:
6 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
2.5"	.357 Mag	Light Pistol	7	6 cyl	SA	9M/5M	1	2/24 hrs	530 ¥
4"	.357 Mag	Medium Pistol	6	6 cyl	SA	9M/5M	1.1	2/24 hrs	560 ¥
6"	.357 Mag	Heavy Pistol	5	6 cyl	SA	9M/5M	1.2	2/24 hrs	600 ¥
8.375"	.357 Mag	SMG	4	6 cyl	SA	9M/5M	1.4	2/24 hrs	650 ¥

- For 686 stainless steel version, +50¥.
- +25¥ for Plus models.
- When using .38 Special ammunition, drop Damage Code to 5M and drop range one level.
- Apply the equivalent of 1 point of recoil compensation when firing .38 Special ammunition.

The 'L' frame Smith & Wesson .357 Magnums have been among their fastest selling revolvers since their introduction and are available in a wide range of barrel lengths. Their heavy medium frame with heavy barrel lugs have contributed to low recoil and good reliability even when used continuously with full power ammunition.

The Model 586 is constructed of carbon steel and has blued finish. The Model 686 is similar but in stainless steel with a satin finish. Both models have adjustable rear sights and Hogue rubber grips.

Plus models include a 7 round cylinder and are available in 2.5", 4" and 6" barrel lengths.

Smith & Wesson Model 29/629

629, 4" (101mm) Barrel [6" | 8.375"]

Smith & Wesson
Springfield, MA. UCAS

.44 Magnum/.44 Special

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 4", 6", 8.375"

Weight: Varies

Magazine Capacity:
6 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
4"	.44 Mag	Heavy Pistol	6	6 cyl	SA	10M/8M	1.2	2/24 hrs	590 ¥
6"	.44 Mag	Heavy Pistol	5	6 cyl	SA	10M/8M	1.3	2/24 hrs	640 ¥
8.375"	.44 Mag	SMG	4	6 cyl	SA	10M/8M	1.4	2/24 hrs	680 ¥

- For 629 stainless steel version, +50¥.
- When using .44 Special ammunition, drop Damage Code to 8M and drop range one level.
- Apply the equivalent of 1 point of recoil compensation when firing .44 Special ammunition.

Smith & Wesson launched the carbon steel 'N' frame Model 29 as the first .44 Magnum revolver in 1955. In 1972 it won an awesome reputation as the "Most Powerful Handgun In The World" following its discovery by Hollywood. The stainless steel equivalent, the Model 629 was first produced in 1979. Both models have been made in a number of styles and barrel lengths, the early versions only having a shrouded ejector rod.

All models come standard with adjustable rear sights and Hogue rubber grips.

"Do ya feel lucky, punk? Well do ya?"

Smith & Wesson Performance Center Model 627

Smith & Wesson
Springfield, MA UCAS

.357 Magnum/.38 Special

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 2.65" (67mm)

Weight: 2.2 lbs. (1 kg)

Magazine Capacity:
8 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
627PC	.357 Mag	Medium Pistol	6	8 cyl	SA	9M	1	6/14 hrs	1,025 ¥

- When using .38 Special ammunition, drop Damage Code to 5M and drop range one level.
- Apply the equivalent of 1 point of recoil compensation when firing .38 Special ammunition.

The Ulitimate defensive revolver is here today. Offered exclusively by the Smith & Wesson Performance Center, the Model 627 8 Shot is compact in size, has 8 round capacity, and utilizes the .357 Magnum's unquestioned power. The Model 627 8 Shot features the shortest barrel available on the market, while still maintaining full length case extraction. The 2-5/8" custom profile barrel has a drift adjustable Millet Front Sight.

The Model 627 8 Shot has an eight shot cylinder, recessed to accomodate full moon clips, which will provide the fastest reloading available anywhere. The cylinder can also be loaded without the moon clips. The Model 627 8 Shot incorporates a ball and detent lock up system, which eliminates the need for a locking lug, and reduces the need for a longer barrel. Couple this with the strength of the Smith & Wesson N-Frame, and snag resistant Eagle Boot Grips, and you have the ultimate defensive revolver!

Like all Smith & Wesson handguns, the Performance Center Model 627 is covered by the Smith & Wesson Lifetime Service Policy.

Smith & Wesson Performance Center Model 629

Smith & Wesson
Springfield, MA UCAS

.44 Magnum/.44 Special

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 2.65" (67mm)

Weight: 2.5 lbs. (1.1 kg)

Magazine Capacity: 6 rounds, cylinder

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
629PC	**.44 Mag**	**Medium Pistol**	**6**	**6 cyl**	**SA**	**10M**	**1.1**	**6/14 days**	**1,025 ¥**

- When using .44 Special ammunition, drop Damage Code to 8M and drop range one level.
- Apply the equivalent of 1 point of recoil compensation when firing .44 Special ammunition.

A defensive revolver available in .44 Magnum with a short barrel was unheard of until today. Offered by The Smith & Wesson Performance Center, the Model 629 is compact in size, has 6 round capacity, and utilizes the .44 Magnum's unquestioned power. The Model 629 features the shortest barrel available on the market, while still maintaining full length case extraction. The 2-5/8" custom profile barrel has a drift adjustable Millet Front Sight.

The Model 629 has a 6 shot cylinder, which has been chamfered by our Performance Center gunsmiths. The Model 629 incorporates a ball and detent lock up system, which eliminates the need for a locking lug, and reduces the need for a longer barrel. Couple this with the strength of the Smith & Wesson N-Frame, and the dependability of Hogue Combat Grips, and you have the ultimate defensive revolver!

Like all Smith & Wesson handguns, the Performance Center Model 629 is covered by the Smith & Wesson Lifetime Service Policy.

Springfield Armory Operator Series 1911

TRP Operator [Mil-Spec Operator]

Springfield Armory
Geneseo, IL UCAS

.45 ACP

Operation: Short Recoil

Action: Single

Safety: Frame-mounted on left side (MSO), ambidextrous(TRP)

Sights: Fixed 3-Dot (MSO), Adjustable Tritium (TRP)

Barrel: 5" (127mm)

Weight: 2.62 lbs. (1.19 kg)

Magazine Capacity:
7 rounds, single stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MSO	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**1.2**	**2/24 hrs**	**750 ¥**
TRPO	**.45 ACP**	**Medium Pistol**	**6**	**7 clip**	**SA**	**8M**	**1.3**	**3/36 hrs**	**1,400 ¥**

The 1911 design does not include enough internal space to mount Smartlink systems. These must be mounted externally. Use rules on p.282 SR3, except -1 conceal.

Yet another variant of the venerable 1911 pistol design, Springfield Armory's Operator Series have been designed with tactical engagement in mind.

These were the first 1911 pistols to include the M1913 Picatinny Rail mount machined into the frame's full-length dust cover. The standardized mounting platform readily receives the most popular whitelight, infrared and laser illuminating devices and Smartlink systems used by military SpecOps and law enforcement SWAT teams.

The Mil-Spec Operator is the standard no-nonsense package, which includes features of the legendary US M1911A1. Non-adjustable 3-dot sights are standard.

The TRP Operator (Tactical Response Pistol) includes features found on the UCAS FBI's Hostage Rescue Team standard service sidearm, such as adjustable Bo-Mar tritium night sights, ambidextrous safety lever, flat mainspring housing, adjustable match grade trigger, commander-style hammer, bevelled magazine guide, match grade bull barrel and a beavertail grip safety.

Lights not included.

Steyr M Series

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

Various Chamberings

Operation: Short Recoil

Action: Double Action Only

Safety: Trigger, Manual safety foreward of trigger

Sights:
Fixed Trapezoidal

Barrel: 4" (101mm)

Weight: 1.71 lbs. (780 g)

Magazine Capacity:
12-14 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M9	**9mm Para**	**Medium Pistol**	**6**	**14 clip**	**SA**	**7M**	**0.78**	**2/24 hrs**	**510 ¥**
M40	**.40 S&W**	**Medium Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.78**	**2/24 hrs**	**510 ¥**
M357	**.357 SIG**	**Heavy Pistol**	**6**	**12 clip**	**SA**	**9M**	**0.78**	**2/24 hrs**	**510 ¥**

Includes integral key lock. Weapon cannot be loaded or fired when locked.

The Steyr M-Series pistol is what a handgun should be for the utmost in performance, safety, and reliability. Revolutionary design and safety features - such as the world's first integrated limited access key-lock safety in a semi-automatic pistol - set the Steyr M-Series light years ahead of the competition. The unique triangle/ trapezoid sights offer a new level in ease of sighting and rapid target acquisition. But you get so much more.

The Steyr reputation for quality and reliability is unmatched. Known for producing the world's most accurate - and durable - law enforcement and hunting firearms, it is only natural that these same qualities are inherent in Steyr M-Series pistols. Steyr has long been known as the leader in the utilization of advanced synthetics for firearms and the M-Series' ultra-rigid frame represents the state-of-the-art in the world of handguns.

The Steyr M-Series was designed throughout to make you a better marksman - and a safer one. Add to that an affordable price, lasting quality, and legendary Steyr accuracy and you've got the pistol you've been waiting for...the Steyr M-Series!

Steyr S Series

Mouse over picture for S Series/M Series size comparison.

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

Various Chamberings

Operation: Short Recoil

Action: Double Action Only

Safety: Trigger, Manual safety foreward of trigger

Sights:
Fixed Trapezoidal

Barrel: 3.58" (91mm)

Weight: 1.42 lbs. (645 g)

Magazine Capacity:
10 rounds, double stacked

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
S9	**9mm Para**	**Medium Pistol**	**7**	**10 clip**	**SA**	**7M**	**0.65**	**2/24 hrs**	**510 ¥**
S40	**.40 S&W**	**Medium Pistol**	**7**	**10 clip**	**SA**	**8M**	**0.65**	**2/24 hrs**	**510 ¥**

Includes integral key lock. Weapon cannot be loaded or fired when locked.

The Steyr S-Series pistol is what a handgun should be for the utmost in performance, safety, and reliability. Revolutionary design and safety features - such as the world's first integrated limited access key-lock safety in a semi-automatic pistol - set the Steyr S-Series light years ahead of the competition. The unique triangle/ trapezoid sights offer a new level in ease of sighting and rapid target acquisition. But you get so much more.

The Steyr reputation for quality and reliability is unmatched. Known for producing the world's most accurate - and durable - law enforcement and hunting firearms, it is only natural that these same qualities are inherent in Steyr S-Series pistols. Steyr has long been known as the leader in the utilization of advanced synthetics for firearms and the S-Series' ultra-rigid frame represents the state-of-the-art in the world of handguns.

The Steyr S-Series was designed throughout to make you a better marksman - and a safer one. Add to that an affordable price, lasting quality, and legendary Steyr accuracy and you've got the pistol you've been waiting for...the Steyr S-Series!

Taurus Model 44

Forjas Taurus S.A.
Porto Alegre, Amazonia

.44 Magnum

Operation: Revolver

Action: Double Action

Safety: No external safety

Sights: adjustable target rear, pinned post front

Barrel: 4", 6.5", 8.375"

Weight: Varies

Magazine Capacity: 6 Rounds

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
44, 4"	.44 Mag	Medium Pistol	6	6 cyl	SA	10M	1.24	2/24 hrs	500 ¥
44, 6"	.44 Mag	Heavy Pistol	5	6 cyl	SA	10M	1.24	2/24 hrs	525 ¥
44, 8"	.44 Mag	SMG	4	6 cyl	SA	10M	1.24	2/24 hrs	525 ¥

- Barrel porting is optional on all models. Provides the equivalent of 1 point of recoil compensation +50¥.
- Stainless steel construction +65¥.

This large frame offers 6 shots of .44 Magnum. Hand fitted actions smooth as silk, and crisp triggers right out of the box! They are hammer forged from chrome-moly or stainless steel for tough performance and sure accuracy. These sleek lines and precision parts define the Taurus reputation for quality and customer satisfaction, especially in the superior performance of these target and hunting handguns.

Taurus USA

Walther P22

P22 [P22 Target]

Carl Walther Waffenfabrik
Ulm/Donau, Germany

.22 Long Rifle

Operation: Blowback

Action: Double/Single

Safety: Slide-mounted ambidextrous

Sights: Adjustable dot rear, interchangeable front blade

Barrel: Varies

Weight: 1.15 lbs. (525 g)

Magazine Capacity: 10 rounds, staggered

Modes of fire: Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P22	.22 Long Rifle	Light Pistol	7	10 clip	SA	5L	0.54	2/24 hrs	250 ¥
P22T	.22 Long Rifle	Medium Pistol	6	10 clip	SA	5L	0.56	2/24 hrs	300 ¥

- 5" barrel with extension is available separately and can be interchanged on the 3.4" model. 100 ¥.
- Available with flat black or stainless slide (+30¥).
- Ahem. (Suppress it.)

Walther's P22 .22 caliber pistol combines many features not found on other .22 caliber pistols. Its interchangeable grip panels make it a perfect gun for both large and small hands. With its quick interchangeable 5" (127mm) or 3.4" (86mm) barrel, it's at home for hunting, backpacking or target shooting. The lightweight and affordable Walther P22 is perfect for beginners, collectors, and seasoned shooters.

P22 features:

- Internal trigger lock, loaded chamber indicator, magazine disconnect, ambidextrous safety
- Easily interchangeable barrels 3.4" (86mm) and 5" (127mm) target
- Light polymer frame
- Interchangeable rear grip panel to fit different size hands
- Scope Mount available
- Adjustable 3 Dot rear sight and interchangeable front sights
- Firing pin safety
- Flat black or polished nickel finish on slide

Walther P99

[P99 .40 S&W OD]

Carl Walther Waffenfabrik Ulm/Donau, Germany	
9mm Parabellum, .40 S&W	
Operation: Short Recoil	
Action: Double/Single	
Safety: None, decocker	
Sights: Interchangeable front blade, Adjustable Dot rear	
Barrel: 4.02" (102mm)	
Weight: 1.32 lbs. (600 g)	
Magazine Capacity: 16 rounds, double stacked	
Modes of fire: Safe, semi-automatic	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P99	**9mm Para**	**Medium Pistol**	**6**	**16 clip**	**SA**	**7M**	**0.6**	**2/24 hrs**	**550 ¥**
P99	**.40 S&W**	**Medium Pistol**	**6**	**12 clip**	**SA**	**8M**	**0.6**	**2/24 hrs**	**550 ¥**

- Available in military OD Green finish (frame only). Available with stainless slide, +30¥.
- Available with Double Action Only trigger system, model number P990. Does not include decocker.

The Walther P99 was introduced in the mid 1990's as competition for Glock, Heckler & Koch's USP pistol line, and the growing number of other polymer-framed pistols. The P99 is a light, somewhat slim, polymer frame pistol using the Browning tipping barrel mode of operation.

The Walther P99 has no external safety, however it is completely safe after being loaded. The trigger operates as both double and single action. The first trigger pull after loading the pistol is a long, double action stroke that cocks and fires the pistol. Subsequent shots afterward are fired from the single action mode where the weapon is cocked, the trigger is held half way back, and requires far less pressure to fire. There is a decocking button set into the rear of the slide which will set the weapon back to the initial double action mode (safe). This operation can be set to constant double action if the user so desires.

Subsequently copied in a myriad of other handgun designs, the P99 was the first defensive handgun to incorporate an adjustable backstrapin the pistol grip to accomodate different-sized hands. Walther went to Italian Olympic pistol designer Cesare Morini to add this feature. Three different replaceable backstraps are available (Small, Medium, and Large), each can be swapped in seconds to assist the firer with a better grip on the pistol.

There is also an under-barrel groove for mounting lights, Laser Aiming Modules, external Smartlink systems, and other accesories.

Additionally, the P99 is available with an ADVAT.228 compliant internal Smartlink system.

"Anything worth shooting once is worth shooting twice."
- Col. Jeff Cooper, USMC (Ret.), regarding combat handgun training.

Handguns are small, compact firearms intended to be used at relatively short range and fired accurately from one hand, though this may not necessarily be the best way to use one. Handguns are usually intended to be carried upon a person, for extended periods of time, if necessary. Their small size relative to other firearms allow handguns to be concealed easily. Some are designed with this in mind.

Combat Handguns

As Clint Smith (president and director of Thunder Ranch) puts it, "A pistol is something you use to fight your way back to your gun."

That simple proverb should give you a pretty good idea of how handguns are regarded as fighting tools. They are strictly defensive weapons, being limited in the amount of firepower that they can store and the range at which targets can be engaged effectively. Other types of firearms, such submachine guns, rifles, or carbines are much more effective in an attacking role. They have much greater range, usually carry much more ammunition, are relatively easier to be accurate with, and are generally much more effective in terms of terminal ballistic performance over a wider range of distances.

Still, combat handguns, sometimes known as defensive or tactical handguns, would probably be the most useful type of firearm to a shadowrunner. They are relatively easy to conceal: covert rather than overt. They are also very potent at close range, where engagements are most likely to occur. Most combat handguns are also designed to store a relatively large number of rounds compared to other types of handguns, allowing for several targets to be engaged, or one target to be engaged several times, whichever is necessary. This last factor is probably the major reason why semi-automatic pistols are much more common than revolvers as combat handguns. Another reason is that semi-autos are usually much quicker to reload, assuming that more than one loaded magazine is available to the shooter.

In order to be effective in the combat role, a handgun should be A) as powerful as possible, B) as controllable as possible, and C) carry a reasonable amount of ammunition, reflective of the potential situations the person carrying the handgun thinks that he might find himself in. As you may have guessed, these factors can vary greatly depending on the size and the ability of the person carrying the handgun and the size of potential targets.

The Model 1911	Examples of Combat Handguns
The Beretta 92FS	
The Glock 22	

In Shadowrun, beings the size of Orks and Trolls may present a bit of a problem for the effectiveness of a defensive weapon such as a handgun. Generally speaking, the bigger the creature, the more bullet is needed to stop it. I can't imagine being assaulted by an angry Troll. A being that large and tough-skinned could likely shrug off many rounds of just about any defensive handgun cartridge available today and not think twice. Fortunately, there is a trade off available for the smaller sentients.

Hunting Handguns

Some handguns are designed for hunting, which usually means that they fire a much more powerful cartridge than would normally be necessary for defensive use. These types of handguns are usually much heavier and produce much more recoil, which is generally considered an acceptable trade off as the first shot is usually the only one that will be necessary in a hunting situation. Even if it's not, a rapid second shot is usually not going to be very useful as recoil will offset the user's ability to fire follow-up shots quickly and accurately.

Hunting handguns are usually either revolvers, breech loaders, or even bolt-action designs.

Single-shot handguns, like the Thompson/Center Contender and Encore, are breech-loaded handguns. As such, they may be the slowest to reload, but they can also be some of the most powerful, as they are capable of firing full power rifle cartridges.

Bolt Action handguns, such as Savage's Striker, also fire intermediate to full power rifle cartridges. They can also contain a limited number of rounds in an internal magazine, usually two to four rounds, depending on the cartridge.

Breech-loading and bolt-action handguns could be used to great effect in an urban sniping role, where engagements are unlikely to occur at ranges beyond 100 meters. These handguns are relatively powerful and are very accurate, even at ranges far in excess of what the more conventional handguns are capable of. They are also much more compact than rifles, and are much quicker in use. One popular conspiracy theory of the JFK assassination involves a confession by the supposed Grassy Knoll gunman, Jim Files, who stated that he used a Remington XP-100 bolt action handgun, chambered for the .222 Remington cartridge. That would certainly get the job done.

Hunting revolvers include those chambered for particularly powerful cartridges such as the .44 Magnum, .445 SuperMag .454 Casull, .475 Linebaugh, .480 Ruger, and .500 Magnum. Dan Wesson, Magnum Research, Smith & Wesson, Taurus, and Ruger all make revolvers chambered for these particularly powerful cartridges. Magnum Research also chambers some of their revolvers in cartridges designed for lever-action rifles such as the .444 Marlin, .45-70 Government and .450 Marlin cartridges.

The ubiquitous Desert Eagle is one semi-automatic pistol that has been used to good effect as a hunting handgun, even though it was originally developed for silhouette competition. Of the more powerful pistols available, the Desert Eagle would probably make the easiest transition to a combat handgun, as it incorporates features of combat handguns into its design and can be fired and reloaded quite rapidly, if necessary. Other powerful pistols include the Wildey Magnum, the LAR Grizzly and the AMT AutoMag, though these designs are either out of production or are far more limited in numbers compared to the popular Desert Eagle.

"Hold-Out" Handguns

Some handguns are specifically designed to be carried on a regular basis, out of sight. For this reason, these handguns are usually very small and very lightweight. This can put limits on the types of cartridges they can fire as recoil and muzzle flash, among other things, can present big problems in a small handgun.

Considering that it is very unlikely that any person would like to risk being shot by anything, many of the "hold-out" class of handguns are chambered for cartridges that can't be expected to stop an attacker unless the shot is very precisely placed. As Jeff Cooper contends, "A .22 in the tear duct will stop a fight as efficiently as a 44 Magnum." However, it is unlikely that most people carrying a small .22 handgun will be able to pull off such precision under the stress of the circumstances involved. As such, these handguns usually work by the threat of their use rather than the actual application of force.

Concealed Carry Handguns

An example of how legislation can affect a market is evident in the class of handguns commonly referred to as Concealed Carry handguns. Handguns that could be considered part of this class have been around for quite a while, but never in such proliferation as after 1994, when several of the United States introduced "Shall Issue" Concealed Carry handgun legislation. These laws allow any civilian without a criminal record to carry a handgun in public in the interest of self defense, as long as it is concealed from plain view. Most states require the applicant to take training courses which prepare them for the responsibility and proper use of carrying a concealed handgun.

Unlike most "hold-outs," Concealed Carry handguns usually include a set of sights and a double action or double action only (DAO) trigger mechanism that doesn't require a manual safety. This means that the gun can be carried safely with a round in the chamber, then drawn from concealment and fired without the need to disengage a safety first. They also tend to be chambered for the kind of potent cartridges that are commonly found in combat handguns.

Many handguns can be considered part of this class. The Walther PPK was the first successful semi-auto to include a double action trigger mechanism. As such, it could be considered one of the first true Concealed Carry pistols devised. Introduced in 1931, the PPK holds six rounds of .380 ACP or seven rounds of .32 ACP in a detachable box magazine. Still in production today, the PPK has been copied several times and its mechanisms have been incorporated into other popular pistol designs such as Walther's P-38, the Russian Makarov and PSM pistols, and several of Beretta's pistols.

One of the more popular Concealed Carry handguns available today is the Kahr pistol, available in several formats to suit the user's preference. These recoil-operated pistols are unusually small for the type of cartridge that they fire, chambered in either 9mm Parabellum or .40 S&W. Depending on the model, they carry five to seven rounds of ammunition in a detachable box magazine.

Yet another notable design in the growing class of Concealed Carry handguns would be Smith & Wesson's Model 340. It is a small-framed, double action only (DAO) revolver carrying five rounds of the proven .357 Magnum. Constructed of lightweight metals such as titanium and scandium, the Model 340 weighs only twelve ounces (340 g). Needless to say, it exhibits some rather punishing recoil with full-house .357 Magnum loads. But it's a joy to carry regularly. Considering that the average person is likely to carry the gun much more than they will shoot it, this makes plenty of sense.

In conclusion, handguns can be very effective weapons, though their uses are more often than not limited in practicality to that of defense. Handguns can be and have been used in offensive roles, but are done so only out of utility of their small size and under very specific circumstances. If it is known that a fight is going to occur, it would be wise to take some type of rifle as a primary weapon. But take a handgun, too. Just in case.

Heckler & Koch 227 / 227S

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

5.7x23mm HK (.227 HK)

Operation: Blowback

Safety: Ambidextrous trigger group, 0-1-3-30

Sights: Rotary diopter rear, hooded post front, M1913 rail

Barrel: 8.8" (223mm)

Weight: 4.85lbs. (2.3kg)

Magazine Capacity:
30 rounds, detachable box

Modes of fire: Safe, semi-automatic, 3-round burst, fully automatic

Cyclic Rate: 880 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HK227	**.227 HK**	**Carbine**	**4**	**30 clip**	**SA/BF/FA**	**6M***	**2.3**	**3/48 hrs**	**1,200 ¥**
HK227S	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**3**	**3/48 hrs**	**1,500 ¥**

- .227 HK receives an automatic x0.75 Armor Rating modifier.
- The HK227 is not normally capable of being silenced or suppressed. Specially loaded subsonic ammunition can be used in conjunction with a suppressor, but the weapon's Damage Code drops to 4L and there is no additional armor piercing effect.
- Both models include Smartlink 2 hardware.
- Stock and forward handgrip each provide 1 point of recoil compensation.

At a glance, the compacted Heckler & Koch 227 bears a striking resemblence to the UMP submachine gun. Some design changes include the fact that the weapon's cocking handle is positioned to allow ambidextrous use, and both of the grips are hollowed and facilitate the storage of either a cleaning kit or spare parts kit.

An ambidextrous button located just above the magazine release actuates a bolt lock. When used in conjunction with a suppressor, this feature reduces the weapon's sound signature by locking the bolt closed. The HK227 is not the only firearm HK ever fielded with a similar device, though. Prototypes of the now-familiar MK23, or SOCOM pistol, had a bolt lock button inside the trigger guard just above the Laser Aiming Module's mounting stud. Obviously, employing such a device requires the user to manually cycle the action for follow-up shots. Operators sans discretion may question the trade-off here, but a bolt lock is arguably a worthwhile option.

Another feature that enhances the HK227's stealth as well as its reliability is a forward assist. It is equipped with one that is more streamlined than that of the G41 or PSG1 and is situated between the stock rail and the selector lever. Southpaws can operate this assist with their thumbs, while right-handed users must alter their grip a bit more. Like the forward assists commonly found on rifles, it allows the user to chamber a round when the weapon is excessively fouled. But perhaps more importantly, it facilitates the quiet chambering of a round when the user does not wish to let the charging handle slam forward.

While a forward assist serves to bolster the element of surprise, covert operators tend to rely on suppressors to maintain stealth when the weapon system allows. All of HK's submachine guns except for a few variants of the MP5K either allow for the attachment of suppressors or, as in the case of the MP5-SD, come with integrated suppressors. When HK's engineers (armed with no small measure of user feedback) developed the HK227, they bestowed upon it a number of the advantages associated with each of their previous designs. The HK227's free-floating barrel is threaded approximately 3 1/2 inches from the muzzle so that the suppressor's mount slips over it, thereby eliminating the need for either lugs or a barrel that protrudes beyond the front sight. The barrel shroud is ported so that the user can visually ensure that the suppressor is mounted properly.

The HK227 fires the 5.7x23mm round developed by Hecker & Koch's UCAS subsidiary. The 5.7x23mm (also known as the .227 HK) was designed to defeat light body armor. With that in mind, bullets are relatively light (40 grains) and velocity is high, at 750 meters/sec. Subsonic ammunition is available. The HK227S is the integrally suppressed variant of the HK227. It fires the venerable 9x19mm Parabellum round, which has same case head dimensions as the 5.7x23mm round.

The HK227 has a retractable stock and an underbarrel grip, an ambidexterous "0-1-3-30" trigger group, a threaded barrel for mounting various sound/flash suppressors or gas venting systems, top and under-barrel M1913-style Picatinny rails for mounting various enhanced-vision and targeting systems. The new SL Series ADVAT.328-compliant *SL2* Smartlink System is also standard equipment. Adjustable rotary diopter sights and corrosion-proof synthetic magazines are standard on all models.

Heckler & Koch MP5

Heckler & Koch GmbH Oberndorf/Neckar, Germany
9mm Parabellum
Operation: Delayed Blowback
Safety: Left side 0-1-30 or ambidextrous 0-1-3-30
Sights: Rotary diopter rear, hooded post front
Barrel: 8.86" (225mm)
Weight: 6.4 lbs. (2.9 kg)
Magazine Capacity: 30 rounds, detachable box
Modes of fire: Safe, semi-automatic, fully automatic
Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5A1	**9mm Para**	**SMG**	**4**	**30 clip**	**SA/FA**	**8M**	**2.5**	**3/48 hrs**	**1,050 ¥**
MP5A2	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/FA**	**8M**	**2.9**	**3/48 hrs**	**1,100 ¥**
MP5A3	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/FA**	**8M**	**2.9**	**3/48 hrs**	**1,150 ¥**
MP5A4	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**3**	**4/48 hrs**	**1,150 ¥**
MP5A5	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**3**	**4/48 hrs**	**1,250 ¥**

Model	Comments
MP5A1	No Stock (Receiver Cap), SEF Trigger Group
MP5A2	Fixed Stock, SEF Trigger Group
MP5A3	Retractable Stock, SEF Trigger Group
MP5A4	Fixed Stock, 3-Round Burst Trigger Group
MP5A5	Retractable Stock, 3-Round Burst Trigger Group

Retractable stocks provide a +1 Conceal Rating when retracted.

MP5 Components.

In the mid 1960s, Heckler & Koch were tasked to develop a 9mm submachine gun for the German Bundesgrenzschutz (Federal Border Guard). Developed under "Project 64", the HK54, as it was designated internally, was adopted by the German military as the Maschine Pistole 5, or simply MP5.

The MP5 subsequently came into the use of the British Special Air Service (SAS) after SAS operators, cross-training with Germany's GSG-9, found it to be an exceptional weapon during a raid on a hijacked Lufthansa airliner taken to Mogadishu, Somalia on 18 October 1977. The MP5 then won the world over after being seen in very effective use by SAS operators in the 5 May 1980 liberation of the Iranian Embassy in London, England. The MP5 has since become the standard by which all other submachine guns are judged.

Heckler & Koch MP5 submachine guns employ the same delayed blowback operated roller-locked bolt system found in the famous HK G3 Automatic Rifle. All the elements of HK exellence; reliability, ease of handling, simple maintenance, and safety are highlighted on the MP5. Firing the 9mm Parabellum round from the closed-bolt position during all modes of fire makes MP5 submachine guns extremely accurate and controllable. These are just some of the strengths of this weapon that have have been incorporated into newer designs such as the UMP and HK227 submachine guns.

Used by military and law enforcement units in more than sixty nations, the MP5 has been firmly established as the world's preeminent submachine gun for many years. Over 120 variants of the HK MP5 submachine gun are available to address the widest range of tactical requirements. A selection of optional trigger groups allow for single fire, full automatic, and 3-round burst options. The weapon's unique modular design and a variety of optional buttstocks, forearms, sight mounts, and other accessories gives the MP5 extraordinary flexability to meet most any mission requirement.

Adjustable rotary diopter sights, a lugged barrel mount and synthetic corrosion-proof magazines are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the MP5A3-SL2.)

Heckler & Koch MP5N Navy

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Parabellum

Operation: Delayed Blowback

Safety: Ambidextrous selector switch, 0-1-30

Sights: Rotary diopter rear, hooded post tritium front

Barrel: 8.86" (225mm)

Weight: 6.5 lbs. (2.9 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5N	**9mm Para**	**SMG**	**3**	**30 clip**	**SA/FA**	**8M**	**2.9**	**6/36 hrs**	**1,280 ¥**

- Retractable stock provides +1 Conceal Rating when retracted.
- MP5 Components.

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Developed especially for one of America's most elite special operations units, the MP5 Navy model is chambered for the venerable 9mm Parabellum cartridge and includes an ambidexterous Navy trigger group (safe, semi-automatic, fully-automatic) and a barrel with both thread and three-lug mounts for attaching various sound or flash suppressors or gas venting systems.

Adjustable rotary diopter sights, a lugged barrel mount and synthetic corrosion-proof magazines are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the MP5A3-SL2.)

Heckler & Koch MP5K

[MP5KA5]

Heckler & Koch GmbH Oberndorf/Neckar, Germany	
9mm Parabellum	
Operation: Delayed Blowback	
Safety: Ambidextrous selector switch, 0-1-30 or 0-1-3-30	
Sights: Rotary diopter rear, hooded post front	
Barrel: 4.52" (115mm)	
Weight: 4.4 lbs. (2 kg)	
Magazine Capacity: 15 rounds, detachable box	
Modes of fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 800 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5K	**9mm Para**	**Medium Pistol**	**4**	**15 clip**	**SA/FA**	**7M**	**2**	**6/36 hrs**	**950 ¥**
MP5KA1	**9mm Para**	**Medium Pistol**	**4**	**15 clip**	**SA/FA**	**7M**	**2**	**6/36 hrs**	**950 ¥**
MP5KA4	**9mm Para**	**Medium Pistol**	**4**	**15 clip**	**SA/BF/FA**	**7M**	**2**	**6/36 hrs**	**1,000 ¥**
MP5KA5	**9mm Para**	**Medium Pistol**	**4**	**15 clip**	**SA/BF/FA**	**7M**	**2**	**6/36 hrs**	**1,000 ¥**

- Forward handgrip provides 1 point of recoil compensation.
- Due to the lack of sights on the MP5KA1 and KA5, target numbers for ranges beyond short incur a cumulative +1 per range level. For example, TN is 4 at Short range, 6 at Medium range, 8 at Long range, and 12 at Extreme range. If any other type of sight is used (such as a laser or reflex sight), these penalties do not apply.
- MP5K can use standard 30-round MP5 magazines.
- MP5 Components.

The MP5K (Kurz) Series are the ultimate in close quarters weapons. At less than 13 inches long, any weapon in the MP5K Series line is easily concealed and carried. The HK MP5K Series submachine guns are very popular due to their compact size and abundance of firepower. Standard sized 30-round magazines can be swapped with the compact 15-round magazines at any time.

The MP5K has a vertical under-barrel grip instead of a stock and an "SEF" trigger group (safe, semi-automatic, fully-automatic). Adjustable rotary diopter sights and corrosion-proof synthetic magazines are standard.

The MP5KA1 is generally the same as the MP5K, but lacks iron sights, to avoid catching on clothing. Corrosion-proof synthetic magazines are standard.

The MP5KA4 has a "3-Round Burst" trigger group (safe, semi-automatic, 3-round burst, fully-automatic). Adjustable rotary diopter sights and corrosion-proof synthetic magazines are standard.

The MP-5KA5 is generally the same as the MP-5KA4, but lacks iron sights, to avoid catching on clothing. Corrosion-proof synthetic magazines are standard.

Heckler & Koch MP5K PDW

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Parabellum

Operation: Delayed Blowback

Safety: Ambidextrous selector switch, 0-1-30

Sights: Rotary diopter rear, hooded post front

Barrel: 4.52" (115mm)

Weight: 6.17 lbs. (2.8 kg)

Magazine Capacity: 15 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5K PDW	**9mm Para**	**Medium Pistol**	**3**	**15 clip**	**SA/FA**	**7M**	**2.8**	**6/72 hrs**	**1,150 ¥**
MP5KN PDW	**9mm Para**	**Medium Pistol**	**3**	**15 clip**	**SA/FA**	**7M**	**2.8**	**6/72 hrs**	**1,150 ¥**

- Side-folding buttstock and an forward handgrip each provide 1 point of recoil compensation.
- Folding stock provides +1 Conceal when folded.
- MP5K PDW can use standard 30-round MP5 magazines.
- MP5 Components.

In the mid 1960s, Heckler & Koch were tasked to develop a 9mm submachine gun for the German Bundesgrenzschutz (Federal Border Guard). Developed under "Project 64", the HK54, as it was designated internally, was adopted by the German military as the Maschine Pistole 5, or simply MP5.

The MP5 subsequently came into the use of the British Special Air Service (SAS) after SAS operators, cross-training with Germany's GSG-9, found it to be an exceptional weapon during a raid on a hijacked Lufthansa airliner taken to Mogadishu, Somalia on 18 October 1977. The MP5 then won the world over after being seen in very effective use by SAS operators in the 5 May 1980 liberation of the Iranian Embassy in London, England. The MP5 has since become the standard by which all other submachine guns are judged.

Heckler & Koch MP5 submachine guns employ the same delayed blowback operated roller-locked bolt system found in the famous HK G3 Automatic Rifle. All the elements of HK exellence; reliability, ease of handling, simple maintenance, and safety are highlighted on the MP5. Firing the 9mm Parabellum round from the closed-bolt position during all modes of fire makes MP5 submachine guns extremely accurate and controllable. These are just some of the strengths of this weapon that have have been incorporated into newer designs such as the UMP and HK227 submachine guns.

Used by military and law enforcement units in more than sixty nations, the MP5 has been firmly established as the world's preeminent submachine gun for many years. Over 120 variants of the HK MP5 submachine gun are available to address the widest range of tactical requirements. A selection of optional trigger groups allow for single fire, full automatic, and 3-round burst options. The weapon's unique modular design and a variety of optional buttstocks, forearms, sight mounts, and other accessories gives the MP5 extraordinary flexability to meet most any mission requirement.

> The MP5K PDW has a side-folding stock, a "Navy" trigger group (safe, semi-automatic, fully-automatic) and a threaded barrel. Adjustable rotary diopter sights, a lugged barrel mount and synthetic corrosion-proof magazines are standard.
>
> The MP5KN PDW is the UCAS and CAS Navy version, which includes an ambidexterous "Navy" trigger group (safe, semi-automatic, fully-automatic), a lugged barrel for mounting various sound or flash suppressors or gas venting systems and the new SL Series ADVAT.328-compliant *SL2* Smartlink System (which is completely backward-compatible with all ADVAT.228 cyberware systems).

Heckler & Koch MP5SD

Heckler & Koch GmbH Oberndorf/Neckar, Germany
9mm Parabellum
Operation: Delayed Blowback
Safety: Left side 0-1-30 or ambidextrous 0-1-3-30
Sights: Rotary diopter rear, hooded post front
Barrel: 5.75" (146mm)
Weight: 7.63 lbs. (3.46 kg)
Magazine Capacity: 30 rounds, detachable box
Modes of fire: Safe, semi-automatic, fully automatic
Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5SD1	**9mm Para**	**Heavy Pistol**	**4**	**30 clip**	**SA/FA**	**6M**	**3.3**	**3/48 hrs**	**1,690 ¥**
MP5SD2	**9mm Para**	**Heavy Pistol**	**3**	**30 clip**	**SA/FA**	**6M**	**3.5**	**3/48 hrs**	**1,710 ¥**
MP5SD3	**9mm Para**	**Heavy Pistol**	**3**	**30 clip**	**SA/FA**	**6M**	**3.5**	**3/48 hrs**	**1,760 ¥**
MP5SD4	**9mm Para**	**Heavy Pistol**	**4**	**30 clip**	**SA/BF/FA**	**6M**	**3.3**	**4/48 hrs**	**1,720 ¥**
MP5SD5	**9mm Para**	**Heavy Pistol**	**3**	**30 clip**	**SA/BF/FA**	**6M**	**3.5**	**4/48 hrs**	**1,760 ¥**
MP5SD6	**9mm Para**	**Heavy Pistol**	**3**	**30 clip**	**SA/BF/FA**	**6M**	**3.5**	**4/48 hrs**	**1,840 ¥**

Model	Comments
MP5SD1	No stock (Receiver Cap), SEF Trigger Group
MP5SD2	Fixed Stock, SEF Trigger Group
MP5SD3	Retractable Stock, SEF Trigger Group
MP5SD4	No stock (Receiver Cap), 3-Round Burst Trigger Group
MP5SD5	Fixed Stock, 3-Round Burst Trigger Group
MP5SD6	Retractable Stock, 3-Round Burst Trigger Group

- If subsonic ammunition is used in any MP5SD, drop Damage Code to 5M.
- Retractable stocks provide a +1 Conceal Rating when retracted.

- MP5 Components.
- See rules for Suppression.

In the mid 1960s, Heckler & Koch were tasked to develop a 9mm submachine gun for the German Bundesgrenzschutz (Federal Border Guard). Developed under "Project 64", the HK54, as it was designated internally, was adopted by the German military as the Maschine Pistole 5, or simply MP5.

The MP5 subsequently came into the use of the British Special Air Service (SAS) after SAS operators, cross-training with Germany's GSG-9, found it to be an exceptional weapon during a raid on a hijacked Lufthansa airliner taken to Mogadishu, Somalia on 18 October 1977. The MP5 then won the world over after being seen in very effective use by SAS operators in the 5 May 1980 liberation of the Iranian Embassy in London, England. The MP5 has since become the standard by which all other submachine guns are judged.

Heckler & Koch MP5 submachine guns employ the same delayed blowback operated roller-locked bolt system found in the famous HK G3 Automatic Rifle. All the elements of HK exellence; reliability, ease of handling, simple maintenance, and safety are highlighted on the MP5. Firing the 9mm Parabellum round from the closed-bolt position during all modes of fire makes MP5 submachine guns extremely accurate and controllable. These are just some of the strengths of this weapon that have have been incorporated into newer designs such as the UMP and HK227 submachine guns.

For specialized applications requiring fully realized sound and flash suppression, several MP5SD models are available. The removable sound suppressor is integrated into the weapon's design and conforms to the normal length and profile of a conventional, unsuppressed submachine gun. The SD (Schall Dämpfer) suppressor is so effective that the sound of the internal components working is actually louder than the bullet's report.

The MP5SD uses an integral aluminum or optional wet technology stainless steel sound suppressor. It does not require the use of subsonic ammunition for effective sound reduction like most conventional sound suppressed submachine guns.

Adjustable rotary diopter sights and corrosion-proof synthetic magazines are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the MP5A3-SL2.)

Heckler & Koch MP5/10

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

10mm Automatic

Operation: Delayed Blowback

Safety: Ambidextrous selector switch, 0-1-30

Sights: Rotary diopter rear, hooded post tritium front

Barrel: 8.86" (225mm)

Weight: 6.5 lbs. (2.9 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 800 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5/10A2	**10mm Auto**	**SMG**	**3**	**30 clip**	**SA/FA**	**10M**	**2.9**	**6/36 hrs**	**1,280 ¥**
MP5/10A3	**10mm Auto**	**SMG**	**3**	**30 clip**	**SA/FA**	**10M**	**2.9**	**6/36 hrs**	**1,280 ¥**

Model	Comments
MP5/10A2	Fixed Stock, Ambidextrous Navy Trigger Group
MP5/10A3	Retractable Stock, Ambidextrous Navy Trigger Group

- Retractable stock provides +1 Conceal Rating when retracted.
- MP5 Components.

In the mid 1960s, Heckler & Koch were tasked to develop a 9mm submachine gun for the German Bundesgrenzschutz (Federal Border Guard). Developed under "Project 64", the HK54, as it was designated internally, was adopted by the German military as the Maschine Pistole 5, or simply MP5.

The MP5 subsequently came into the use of the British Special Air Service (SAS) after SAS operators, cross-training with Germany's GSG-9, found it to be an exceptional weapon during a raid on a hijacked Lufthansa airliner taken to Mogadishu, Somalia on 18 October 1977. The MP5 then won the world over after being seen in very effective use by SAS operators in the 5 May 1980 liberation of the Iranian Embassy in London, England. The MP5 has since become the standard by which all other submachine guns are judged.

Heckler & Koch MP5 submachine guns employ the same delayed blowback operated roller-locked bolt system found in the famous HK G3 Automatic Rifle. All the elements of HK exellence; reliability, ease of handling, simple maintenance, and safety are highlighted on the MP5. Firing the 9mm Parabellum round from the closed-bolt position during all modes of fire makes MP5 submachine guns extremely accurate and controllable. These are just some of the strengths of this weapon that have have been incorporated into newer designs such as the UMP and HK227 submachine guns.

Developed especially for the United States FBI Hostage Rescue Team, the MP5/10 is chambered for the powerful 10mm Automatic cartridge and includes an ambidexterous Navy trigger group (safe, semi-automatic, fully-automatic), bolt hold-open device, low impulse locking piece, and a barrel with both thread and three-lug mounts for attaching various sound or flash suppressors or gas venting systems.

Adjustable rotary diopter sights, a lugged barrel mount and synthetic corrosion-proof magazines are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the MP5A3-SL2.)

Heckler & Koch MP5 / 40

Heckler & Koch GmbH Oberndorf/Neckar, Germany	
.40 Smith & Wesson	
Operation: Delayed Blowback	
Safety: Ambidextrous selector switch, 0-1-30	
Sights: Rotary diopter rear, hooded post tritium front	
Barrel: 8.86" (225mm)	
Weight: 6.5 lbs. (2.9 kg)	
Magazine Capacity: 30 rounds, detachable box	
Modes of fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 800 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP5/40A2	**.40 S&W**	**SMG**	**3**	**30 clip**	**SA/FA**	**9M**	**2.9**	**6/36 hrs**	**1,280 ¥**
MP5/40A3	**.40 S&W**	**SMG**	**3**	**30 clip**	**SA/FA**	**9M**	**2.9**	**6/36 hrs**	**1,280 ¥**

Model	Comments
MP5/40A2	Fixed Stock, Ambidextrous Navy Trigger Group
MP5/40A3	Retractable Stock, Ambidextrous Navy Trigger Group

MP5 Components.

In the mid 1960s, Heckler & Koch were tasked to develop a 9mm submachine gun for the German Bundesgrenzschutz (Federal Border Guard). Developed under "Project 64", the HK54, as it was designated internally, was adopted by the German military as the Maschine Pistole 5, or simply MP5.

The MP5 subsequently came into the use of the British Special Air Service (SAS) after SAS operators, cross-training with Germany's GSG-9, found it to be an exceptional weapon during a raid on a hijacked Lufthansa airliner taken to Mogadishu, Somalia on 18 October 1977. The MP5 then won the world over after being seen in very effective use by SAS operators in the 5 May 1980 liberation of the Iranian Embassy in London, England. The MP5 has since become the standard by which all other submachine guns are judged.

Heckler & Koch MP5 submachine guns employ the same delayed blowback operated roller-locked bolt system found in the famous HK G3 Automatic Rifle. All the elements of HK exellence; reliability, ease of handling, simple maintenance, and safety are highlighted on the MP5. Firing the 9mm Parabellum round from the closed-bolt position during all modes of fire makes MP5 submachine guns extremely accurate and controllable. These are just some of the strengths of this weapon that have have been incorporated into newer designs such as the UMP and HK227 submachine guns.

Developed especially for United States federal law enforcement agencies, the MP5/40 model is chambered for the powerful .40 S&W cartridge (a shortened version of the 10mm Automatic) and includes an ambidexterous Navy trigger group (safe, semi-automatic, fully-automatic), bolt hold-open device, high impulse locking piece, and a barrel with both thread and three-lug mounts for attaching various sound or flash suppressors or gas venting systems.

Adjustable rotary diopter sights, a lugged barrel mount and synthetic corrosion-proof magazines are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the MP5A3-SL2.)

Heckler & Koch MP7 Personal Defense Weapon

Heckler & Koch GmbH Oberndorf/Neckar, Germany	
4.6x30mm HK	
Operation: Gas	
Safety: Ambidextrous 0-1-30 trigger group	
Sights: Reflex, backup iron sights (adjust. aperture/post)	
Barrel: 7.09" (180mm)	
Weight: 2.64 lbs. (1.2 kg)	
Magazine Capacity: 20/40 rounds, detachable box	
Modes of fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 950 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MP7A1	**4.6x30mm**	**SMG**	**4**	**20 clip**	**SA/FA**	**5M***	**1.2**	**6/7 days**	**750 ¥**

- Standard ammunition for the MP7 provides a x0.5 Armor Rating modifier.
- Subsonic ammunition for the MP7 negates the armor bonus and the Damage Code drops to 4L.
- This weapon has a retractable buttstock (-1 Conceal when deployed) and an folding under-barrel grip. Each provide 1 point of recoil compensation.
- Reflex sight provides a -1 Target Number modifier when used.
- See rules for Suppression.

The emphasis of modern assault rifle design is oriented to the requirements of the infantryman. However, in a modern army, only about 20% of the total number of soldiers are employed as infantry. As a consequence, NATO Panel V defined demands for a new Personal Defense Weapon (PDW), the features of which would provide the user with superiority in close combat and medium-range firefight situations. Based on this list of demands, HECKLER & KOCH started development, together with Royal Ordnance (Radway Green) as the ammunition development partner.

The result could without a doubt be designated as a step forward in small arms technology. A new multi-role Personal Defense Weapon in a new calibre has been created, the HK PDW in 4.6x30mm. In relation to the PDW, multi-role must be understood in its purest sense: The PDW is a perfect three-in-one solution. Thanks to the firepower of a submachine gun, medium-range capabilities of an assault rifle and pistol-like close combat dimensions.

Because of the low weight, small dimensions and less than half of the recoil of a normal 9x19mm submachine gun, the HK PDW has the handling features of a .22 weapon. It is extremely easy to operate and control and – due to the low recoil impulse of the ammunition – very steady during burst fire, with a firing rate of 950 rds/min. The HK PDW and its new ammo made it to exceed all NATO-demands: The ratio of ballistic power and recoil achieved by the HK PDW and the new 4.6x30mm ammo is impressive and sets new standards in the world of handguns:

- Flat bullet trajectory
- Full penetration of the CRISAT-protection (1.6mm Titanium and 20 layers of Kevlar) at 200m distance; four times what the NATO requirements call for.
- High energy transfer into the target.

All the above make the HK PDW-System what it is – the optimum choice for law enforcement and military in close combat and mid-range personal defense situations.

The PDW comes standard with under barrel grip, retractable stock, Picatinny rail mount, reflex sight and backup iron sights. It can accept extended 40-round magazines.

Text courtesy Heckler & Koch

Fabrique Nationale P90

Fabrique Nationale Herstal SA
Herstal, Liége, Belgium

5.7x28mm FN P90

Operation: Blowback

Safety: Frame-mounted, three-position rotary

Sights: Reflex, backup notch and post iron sights

Barrel: 10.35" (263mm)

Weight: 5.9 lbs. (2.54 kg)

Magazine Capacity:
50 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 900 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
P90	**5.7x28mm**	**Light Carbine**	**3**	**50 clip**	**SA/FA**	**6M***	**2.5**	**6/7 days**	**1,330 ¥**

- Standard ammunition for the P90 provides a x0.5 Armor Rating modifier.
- Subsonic ammunition for the P90 negates the armor bonus and the Damage Code drops to 5L.
- Reflex sight provides a -1 Target Number modifier when used.
- See rules for Suppression.

The P90 is a lightweight, compact weapon with a magazine capacity that exceeds that of any submachine gun. Firing the 5.7x28mm round, the P90 allows accurate and effective engagement of targets. It will perforate body armor (IIIA), up to 200 meters while limiting the risk of collateral damage.

The P90 features a simple and reliable straight blow-back mechanism, designed to operate in the most rigorous field conditions, firing is from a closed bolt for maximum accuracy.

The P90 is fully ambidextrous, being almost symmetrical. Its rounded shapes and short length make carrying, exiting vehicles, and fast and discrete movements through buildings easier.

The standard sight is an integrated optical sight, without magnification, for improved acquisition of the target. Performance is fully retained in low light conditions. A tritium capsule gives an aiming cross hair. A wide variety of other day and night sights can also be fitted.

Heckler & Koch G3A3 Battle Rifle

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: Left side selector switch, 0-1-20

Sights: Rotary diopter, adjustable, four apertures

Barrel: 17.71" (450mm)

Weight: 9.7 lbs. (4.4 kg)

Magazine Capacity: 20 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G3A3	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.4**	**5/7 days**	**1,200 ¥**

Double all uncompensated recoil modifiers per SR3.111.

The genesis of the G3 (*Gewehr* or Rifle) Battle Rifle actually took place 14 years prior to its adoption and initial production by Heckler & Koch GmbH.

During WWII, an engineering team at Mauser headed by Ludwig Vorgrimler adapted a roller-locking delayed blowback form of operation for use in the second-generation *Sturmgewehr* (assault rifle), designated StG.45. Succeeding the gas piston-operated StG.44, the StG.45 also fired the 7.92x33mm Kurz cartridge. However, the war was brought to an end before production of the StG.45 could begin in earnest.

After the war, Vorgrimler and several other German engineers eventually resumed development of the roller locking design at the *Centro de Estudios Tecnicos de Materiales Especiales* (CETME), Spain's small arms development center located in Seville. The rifle was designed around an experimental 7.92x40mm cartridge.

When the American 7.62x51mm T65 cartridge was standardized by NATO in 1954, the German *Bundesgrenzschütz* (Federal Border Guard) tested several 7.62x51mm-chambered rifles, including the Fabrique Nationale FAL (G1), the SIG SG510 (G2), the CETME Modelo A (G3), and the Armalite AR-10 (G4). Out of these, the FN FAL was accepted for service as the G1. However, Fabrique Nationale would not license post-war Germany to produce the FAL. The CETME rifle was then chosen to replace the G1. A manufacturing license was transferred from the Dutch NVM company to Heckler & Koch and production began in 1959.

The legendary G3 Battle Rifle has been used by more than 50 nations since its introduction, including Germany, Greece, Iran, Mexico, Norway, Pakistan, Portugal, Sweden and Turkey. It was the official infantry rifle of the German *Bundeswehr* from 1959 to 1995, when it was replaced by another Heckler & Koch rifle, the G36. As of 2002, Heckler & Koch have ceased production of the G3A3 rifle.

Though some models found today could actually be considered antiques, the G3A3 is an extremely rugged and reliable weapon. The G3A3 comes standard with a fixed shoulder stock, "0-1-20" trigger group, removable combination flash suppressor/grenade launching spigot, and rotary diopter rear sight. Due to its modular design, many options are available for the G3A3 and other HK roller-locked weapons.

More information on Heckler & Koch firearms can be found at HKPRO.

Heckler & Koch G36C Compact

[G36C, folded, foregrip, CCO] [Size, G36/G36C]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Ambidextrous selector switch, 0-1-3-30

Sights: Adjustable flip aperture rear, hooded post front

Barrel: 8.98" (228mm)

Weight: 6.62 lbs. (3 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of Fire: Safe, semi-auto, 3 round burst, full auto

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G36A3C	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**3**	**4/9 days**	**980 ¥**

Retractable stock provides a +1 Conceal when retracted.

The G36 compact 5.56mm Short Carbine features a 9-inch barrel and is actually shorter than an MP5 with the buttstock folded. Features include an accessory vertical grip, optional reflex sight, shortened forearm with six Picatinny rail hard points for attaching accessories, and shortened four-prong flash hider. Dual aperture iron sights are standard.

More information on Heckler & Koch firearms can be found at HKPRO.

Benelli M1 Tactical and M1 Entry

Benelli Armi SpA
Urbino, Italy

12 Gauge, 3" Chamber

Operation: Recoil

Safety: Crossbolt two position

Sights: Notch rear, post front; Ghost Ring

Barrel: 18.5" (470mm)

Weight: 7.7lbs. (3.52kg)

Magazine Capacity:
5 rounds, tubular magazine

Modes of fire:
Safe, semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M1 Tactical	**12**	**Shotgun**	**2**	**5 mag**	**SA**	**10S**	**3.52**	**4/24 hrs**	**800 ¥**
M1 Entry	**12**	**Light Pistol**	**3**	**5 mag**	**SA**	**9S**	**3.22**	**4/6 days**	**750 ¥**

With folding pistol grip stock, +30¥. +1 Conceal when stock is folded.

There are circumstances when the successful use of a shotgun cannot be measured in trophies or table fare; it is when the important factors become a matter of survival.

At a time of this kind, the shotgun in your hands has to be everything you demand in speed, reliability and payload performance. It is at a time like that you truly appreciate our performance made simple and can, without any question, measure why Benelli performance is worth the price.

The Benelli M1 Tactical is an automatic combat shotgun designed for entry and close quarters suppression. Partly constructed of polymer-resins, the M1 is light and very reliable.

The Benelli M1 Entry is an automatic combat shotgun designed for entry and close quarters suppression. The short, 14" cylinder bore barrel allows entry into very tight quarters without any detrement to the user. Ghost ring sights are also standard equipment on the M1 Entry Shotgun.

Both models are available with a standard "hunting" buttstock or a pistol grip stock for better control. The barrel is threaded for use with adjustable chokes, door breechers, and recoil compensators. The Smart Tactical also includes an ADVAT.228 Smartlink, compatible with most ADVAT.328 cyberware systems (+750).

Benelli M3 Convertible

Benelli Armi SpA
Urbino, Italy

12 Gauge, 3" Chamber

Operation: Recoil or Slide

Safety: Crossbolt two position

Sights: Notch rear, post front; Ghost Ring

Barrel: 19.75" (500mm)

Weight: 8.2lbs. (3.74kg)

Magazine Capacity:
7 rounds, tubular magazine

Modes of fire: Safe, Semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M3S90	**12**	**Shotgun**	**2**	**7 magazine**	**SS/SA**	**10S**	**3.74**	**4/36 hrs**	**920 ¥**

- Changing the M3 from semi-automatic to pump action mode or vice versa requires one Simple Action. Parts can be installed to allow a Smartlink to control this mode switching, requiring only a Free Action.
- Smartlink Mode Switch costs 250¥. A Gunsmithing (4) test is required. Base time is one hour.

The Benelli M3 Super 90 is specially designed to meet the needs of law enforcement and anti-terrorist squads. It uses a gas operated, rotating bolt system that allows the user to select either semi-automatic fire or manual pump-action by simply pressing the command lever set into the front of the handguard. This comes into play when a type of cartridge that might not normally have the recoil energy to cycle the automatic mechanism is used, such as flares and some non-lethal types of ammunition.

The M3 Super 90 is available with a standard "hunting" buttstock or a pistol grip stock for better control. The barrel is threaded for use with adjustable chokes, door breechers, and recoil compensators. It also includes a "ghost-ring" sighting system which allows the firer to aim with both eyes open if manual sighting is used.

The M3 Smart also includes an ADVAT.228 Smartlink (Level 1), compatible with most ADVAT.328 cyberware systems (+750 ¥). With the addition of a few mechanical parts, the Smartlink can also control the command lever function for mode switching (+250 ¥, gunsmithing required, TN 4/1 hr).

Benelli M1014 (M4 Super 90) Combat Shotgun

[stock collapsed] [with case and red dot sight]

Benelli Armi SpA
Urbino, Italy

12 Gauge, 3" Chamber

Operation: Gas

Safety: Crossbolt two position

Sights: Ghost Ring rear, protected post front

Barrel: 18.5" (469mm)

Weight: 8.44lbs. (3.82kg)

Magazine Capacity:
7 rounds, tubular magazine

Modes of fire:
Safe, Semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M1014	**12**	**Shotgun**	**2**	**6 magazine**	**SA**	**10S**	**3.82**	**6/48 hrs**	**980 ¥**

The M1014 can be manually operated by its cocking handle, for use with low-recoiling loads.

On 12 February 1999, the US Army Armaments Research, Development, and Engineering Center awarded a contract to Heckler & Koch, in Sterling, Virginia for a 12 gauge semi-automatic shotgun, the new HK/Benelli M4 Super 90 (M4S90) for the US Armed Forces.

Designated the M1014 Joint Services Combat Shotgun (JSCS), the shotgun was developed by Benelli Armi S.p. A. of Urbino, Italy for HK, Inc. The M4S90 Combat Shotgun system meets or exceeds all the performance requirements set forth in the solicitation. The M4S90 with its 3.00-inch chamber can fire both 2.75 inch and 3.00 inch magnum ammunition.

The M4S90 functions using the new ARGO Twin Operating System with rotating bolt head and dual locking lugs. The ARGO (auto regulating gas operated) Twin System with its dual gas ports, pistons and cylinders is self-cleaning, and unaffected by fouling.

It requires little or no maintenance, and is self-regulating for cartridges of varying length and power levels. Functioning reliably under all environmental conditions with both short and long barrels.

The M4S90 is a semi-automatic weapon, fed by a fixed, tubular magazine. Low power "less-than-lethal" ammunition can be manually cycled using the extended bolt handle.

The M4S90 is fitted with adjustable, Ghost Ring iron sights. An accessory mounting rail is fitted to the top of the receiver and allows the operator to mount all manner of targeting and sighting devices in tandem with the iron sights. An 18.50-inch barrel with screw-in internal choke tubes is provided with the weapon.

The M4 Super 90 Smart also includes an ADVAT.228 Smartlink (Level 1), compatible with most ADVAT.328 cyberware systems.

Benelli Nova Slug Gun

Benelli Armi SpA
Urbino, Italy

12 Gauge, Rifled, 3.5" Cham.

Operation: Slide

Safety: Crossbolt two position

Sights: Ghost Ring rear, post front; Picatinny rail mount

Barrel: 18.5" (470mm) Rifled

Weight: 6.72 lbs. (3.05 kg)

Magazine Capacity:
6 rounds, tubular magazine

Modes of fire:
Safe, single shot

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Nova Slug	**12**	**SMG**	**2**	**6 magazine**	**SS**	**10S**	**3.75**	**2/24 hrs**	**350 ¥**

Firing steel shot through a rifled slug barrel will destroy the rifling. If shot is fired through this weapon, reduce range to Light Pistol after around 150 rounds.

NOVA is obviously different from all other 12-gauge slide-action shotguns in style and material. The stock and receiver are one piece. Molded together using glass reinforced polymers, the material provides the structural integrity for the stock cavity and pistol grip and the durability rugged enough to house the embedded steel cage to form the receiver.

Mono-block polymer insert injection molding allows a smooth, flowing pistol grip design; a design that lends comfort and a natural fit to any user's hand. Held barehanded or gloved, the molded grooves perpendicular to the grip contour offer maximum control. Access to the stock cavity requires simply pulling the heavy-duty recoil pad off with a twist. Inside the stock, the shooter can easily install the optional recoil reducer housing and reducer to tame the recoil of the heavy 3 1/2-inch loads for 12-gauge shells. The additional weight can also be used to change the center of balance of the firearm.

The proven Montefeltro rotating bolt design and double action bars from the forend travel smoothly and freely against the synthetic coated metal surfaces within the receiver. Rounds lifted into line by the free-floating carrier are fed into and locked inside the steel barrel chamber by the two steel locking lugs on the bolt head. Live rounds are locked securely in a proof-tested steel enclosure for firing.

The molded forend incorporates the groove grip design. A unique performance feature built into the forend allows you to unload the chamber or change rounds without a shell feeding from the magazine tube. Depressing the "mag stop" button when opening the action interrupts rearward travel of the forend short of engaging the shell release of the magazine. Change the round, close the action and fire. The forend is long enough to extend beyond the front edge of the receiver and offers more holding space to prevent pinching your palm when working the action.

A convenience for shooters, the magazine cap is also the takedown tool for the trigger assembly group. The cap stem is sized to push the trigger housing retaining pins out of the receiver. To pull the pins completely out, use the inside rim edge of the cap. The trigger assembly is a one piece synthetic unit that incorporates the carrier and shell latches and must be removed from the receiver to remove the bolt. The bolt can be completely disassembled without tools.

NOVA, built with ultra-lite technoplymers defies the elements and the scrapes, scratches and gouges that destroy metal surfaces. The design and manufacturing technology gives full consideration for shooter safety, comfort and control. The NOVA shooters will take into the field meets the average shooter's requirements in both dimension and weight.

Before Benelli entered this most popular repeating shotgun market, slide-action shotguns were all alike using traditional materials and "me, too" features. Now there is NOVAs very different slide-action shotgun from Benelli, the manufacturer of shotguns known for performance.

Agencies whose specifications call for a 12-gauge slide-action duty weapon can now choose NOVA, the mono-block molded one-piece stock/receiver shotgun. Ideal for law enforcement agencies and personal security. 12 gauge (fires 3.5 inch - 3 inch - 2.75 inch shells).

FABARM FP6 Pump-Action Shotgun

Fabbrica Bresciana Armi Travagliato, Italy	
12 Gauge, 3" Chamber	
Operation: Slide	
Safety: Crossbolt sear block	
Sights: Fixed notch rear, flip post front; Picatinny rail	
Barrel: 20" (508mm)	
Weight: 6.8lbs. (3.1kg)	
Magazine Capacity: 5 rounds, tubular magazine	
Modes of fire: Safe, Single shot	

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
FP6	**12**	**Shotgun**	**2**	**5 magazine**	**SS**	**10S**	**3.6**	**2/24 hrs**	**520 ¥**
FP6 Entry	**12**	**Light Pistol**	**3**	**5 magazine**	**SS**	**10S**	**2.9**	**3/36 hrs**	**500 ¥**

- Being a pump-action shotgun, it takes one Simple Action to chamber the weapon, then another Simple Action to fire.
- With folding pistol grip stock, +30¥. +1 Conceal when stock is folded.

FABARM pump-action shotguns use the same advanced design and manufacturing techniques found on their premium arms. Twin action bars, deep drilled barrels, exceptionally durable carbon-fiber finish, a choice of fixed, folding, and pistol grip stocks, receiver-mounted Picatinny rail, as well as interchangeable chokes, make the FP6 one of the strongest and most tactically flexible pump-action security shotguns available.

The fast-handling FP6 Entry model is equipped with a 14" (355mm) cylinder bore barrel.

Used by the French national police and security and paramilitary forces in the Balkans, the FABARM FP6 is the preferred manually operated shotgun in Europe.

Saiga 12K Combat Shotgun

OSJC Izhmash
Izhevsk, Russia

12 Gauge, 3" Chamber

Operation: Gas, Regulated

Safety: Right side two position, safe/semi

Sights: Adjustable Rib

Barrel: 16.9" (430mm)

Weight: 7.7lbs. (3.5kg)

Magazine Capacity:
7 rounds, box magazine

Modes of fire:
Safe, Semi-automatic

Cyclic Rate: 240 rpm

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
12K	**12**	**Shotgun**	**3**	**7 clip**	**SA**	**10S**	**3.5**	**6/36 hrs**	**600 ¥**

- This weapon can be modified to SA/FA mode. Gunsmithing test TN4, shop required, 30 minutes, parts 50¥.
- Double all uncompensated recoil modifiers per SR3.111.
- +1 Conceal when stock is folded. Folding the stock locks the trigger mechanism, deactivating the weapon. This feature can be removed at the time of FA modification. Gunsmithing test TN4, 10 minutes, parts 10¥.

The Saiga-12K features a 12-gauge, smooth-bore barrel capable of firing either shot or slug loads, including 70mm (2.75") and 76mm (3") magnum loads. The 12K is complete with quickly detachable polymer magazines of various capacities (2, 5 or 7 rounds), which allow firing series of three or more shots in the autoloading mode.

The 12K is equipped with a sighting rib along the top of the barrel, adjustable for both elevation and windage, which makes firing at moving targets more comfortable.

The Kalashnikov-type gas mechanism is adjustable to match various parameters of internal ballistics for standard and magnum cartridges. The trigger is also adjustable for pull, from 3.3 to 8.1 pounds.

For the purpose of diversifying operational capabilities, the 12K may be equipped with various muzzle devices with different choke factors, such as: cylinder, half choke, full choke. To provide additional convenience in storing and transporting, as well as by way of enhancing maneuverability, the Saiga 12K is available in two versions, each with a quickly detachable buttstock and a pistol grip.

The model "Saiga-12K", differs from model "Saiga-12" by a special folding butt, fire control handle, the mechanism of deactivating the trigger when the stock is folded, and a shorter barrel.

The receiver features a base plate to accommodate an optic scope mount.

Jackhammer Combat Shotgun

Mark Three, Inc. Flagstaff, Pueblo CC	
12 Gauge, 3" Chamber	
Operation: Gas	
Safety: Ambidextrous three position, safe/semi/full	
Sights: Trough through carrying handle	
Barrel: 20.6" (525mm)	
Weight: 10.07lbs. (4.57kg)	
Magazine Capacity: 10 rounds, cassette	
Modes of fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 240 rpm	

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M3	**12**	**Shotgun**	**2**	**10 cassette**	**SA/FA**	**10S**	**3.72**	**6/36 hrs**	**1,250 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- This weapon cannot accept any top, barrel, under-barrel, or stock-mounted accessories.

The M3 Jackhammer Automatic Combat Shotgun is the sole product of Mark Three, a small Albuquerque, Pueblo Corporate Council Company. At the time of this writing, the company is in the process of moving its operation out of the possible crossfire between the Confederated American States and Aztlan, to the safer city of Flagstaff, in what used to be the state of Arizona.

Its design is a little odd, being almost entirely constructed of DuPont Rynite SST, and using an "Ammo Cassette" (a cylindrical, drum-type clip) which sits in a bullpup configuration, as its method of ammunition storage. The reusable cassette, also made of Rynite SST, contains 10 cartridges, and is sealed with a shrink-film plastic, color-coded to indicate the type of ammunition loaded. The seal tears away easily by a pull-strip, and the cassette slips straight into the weapon and engages the operating system.

The weapon is then cocked by the sliding action of the fore-end, and is ready to fire. Once the cassette is emptied, a simple movement of the fore-end releases it to fall clear, and a new cassette to be loaded. Empty cases are not ejected while firing.

Cassettes are sold in various standard or shaped-pattern shot rounds, fin-stabilized flechettes, slugs, APDS slugs, high-pressure CAWS-type rounds, and specialized flare rounds available in various colors.

Weapon description taken from the book *"Modern Small Arms"* by Ian Hogg.
If anyone knows of a better picture for this item, send it my way or send me the link. Thanks.

Mossberg 590 Pump-Action Shotgun

[590 Marinecote] [590 Ghost Sights/Speedfeed] [590A1 Compact]

O.F. Mossberg & Sons, Inc.
North Haven, CT UCAS

12 Gauge, 3" Chamber

Operation: Slide

Safety: Ambidextrous two position (tang mounted)

Sights: Bead front

Barrel: 20" (508mm)

Weight: 6.8lbs. (3.1kg)

Magazine Capacity:
8 rounds, tubular magazine

Modes of fire:
Safe, Single shot

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
590	**12**	**Shotgun**	**2**	**8 magazine**	**SS**	**10S**	**3.1**	**2/24 hrs**	**450 ¥**
590DA	**12**	**Shotgun**	**2**	**8 magazine**	**SS**	**10S**	**3.1**	**2/24 hrs**	**510 ¥**
590A1C	**12**	**Light Pistol**	**3**	**6 magazine**	**SS**	**9S**	**3.1**	**4/48 hrs**	**460 ¥**

- Being a pump-action shotgun, it takes one Simple Action to chamber the weapon, then another Simple Action to fire.
- +20¥ for Marinecote corrosion resistant finish.
- +60¥ for Ghost Ring sights.
- +20¥ for Speedfeed stock.

Mossberg 590 pump action shotguns provide modern design for the most serious and potentially prolonged defense operations. The exceptional 9-shot (8+1) capacity Model 590 with fully parkerized finish is further complemented by a black synthetic stock and forend.

The Model 590DA includes a double-action trigger mechanism, similar to that found on many of today's handguns, for an increased level of safety.

Undercover operatives and others may choose the pistol grip (590A1 Compact) version for maximum compactness and concealability. Patrol cars and vehicles crowded with electronic equipment and MDT's are the ideal setting for the quickly deployable "compact" model with its fast-handling 14" (355mm) barrel and optimally controllable conventional stock.

All model 590 shotguns are also available with our exclusive Marinecote finish which resists corrosion, is more durable than ordinary gunmetal finishes and contributes to smoother operation. Ghost Ring Sights provide incredibly fast target acquisition even in poor light conditions. Also available is the Davis Speedfeed stock, which houses an additional four rounds of amunition in the stock for quick loading into the magazine.

Mossberg M9200A1 "Jungle Gun"

O.F. Mossberg & Sons, Inc.
North Haven, CT UCAS

12 Gauge, 3" Chamber

Operation: Gas

Safety: Ambidextrous two position (tang mounted)

Sights: Bead front

Barrel: 18.5" (469mm)

Weight: 7.56lbs. (3.43kg)

Magazine Capacity:
4 rounds, tubular magazine

Modes of fire:
Safe, Semi-automatic

Model	Gauge	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M9200A1	**12**	**Shotgun**	**2**	**4 magazine**	**SA**	**10S**	**3.43**	**2/24 hrs**	**630 ¥**

The Model 9200A1 12 gauge Autoloading Shotgun was originally developed for anti-narcotics duty in the jungles of Colombia and is the first semi-automatic shotgun designed expressly for the U.S. Military.

The United States Government provided a "MilSpec" which identifies the precise specifications relative to the finished product that must be met. These can include, but are not limited to, certain lengths, weights, materials, finishes, performance demands and testing procedures. The Mossberg Model 9200A1 was the only brand autoloader shotgun to pass all of the requirements and final tests, and is still in extensive use today with the UCAS Army.

INTERCEPTED TRANSMISSION: HEADER READY
<:::CLASSIFIED TRANSMISSION:::>

```
CODED XQ233479L25... waiting... initializing...
FOUND use breaker 12.

Breaker? 12
Start Now Y/N_? Y

     breaking.codesys

          FREETELLsys.yellowknife.algman.44cv9fa45
          SKYNETsys.thule.gl.12xy2fa45
          RAMsys.stjohn.ucas.54he2jk54
          LIBERTYsys.dc.ucas.67kl3nn23
          KASMsys.detroit.ucas.77ltti46789nn23 (STRONG)
```

9.15.59 Monday 11:22:41 am [open line, dictated transmission. no video.]

===[Testing on the Electrical Impulse firing system is in its finishing stages.

The 5.08mm CC1520 round is firing at a rate only determined by the safety limits of the gas expansion in the chamber. The system is uncontrollable at those speeds.

The propellants have an odd tendancy for cook-off. Please inform Davidovich of that. I'm sure he'll be pleased. Maybe it's the weather effecting them?

The ERAS was a godsend. Who developed it? It's a wonderful piece of work. Dunlop has been taking one apart and is engineering a new design. Says this one could be more efficient. Some kids never learn. Which is usually good, but I have a feeling it'll get him in trouble one day.

Advanced materials are holding up splendidly. Strong as any weapon. Tell Orbital to up production. We have more uses for it. The whole unit weighs only 4.65Kg loaded. We are going to need some field testers shortly. As I have told you before, we believe that the weapon is too light to control effectively. But as you have told me, you don't care. You want it light. So it's light. Here's what we have so far.

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
CAR44	**5mm Caseless**	**Assault Rifle**	**2**	**50 clip**	**SA/BF/FA**	**9M**	**4.17**	**GM Discretion**	**GM Discretion**

Production costs are around 7,530¥. We currently have 30 beta models ready to be shipped wherever you want them to go.

We all agree that after the funding has stopped, any new funding should be focused on capacitor battery storage technologies for Man Portable Compact Laser Systems. Quality control also. Rosenburg really needs to find a sharper designer. The lenses need a lot of work. The 3rd generation is already outdated. You could see if Armstrong at SMS wants the contract. He's a sharp tack. SK has already got a 4th gen ready.

The other projects are running... well, running. Please send engineers Karl Henderson and Alvin Varrone. We need fresh minds up here. It's getting cold again. 3 month rotation is due in 2 weeks. When can I go home? I miss my family. I know you don't care, but I've been up here for almost a year.

Hope things are going well. Please remind Davidovich of the cook-off problem.

Oh, by the way, we're calling it "Omega". That ought to amuse a few.]===

JHD (Jansen H. Dobbs jhdobbs@freetell.ares.com)

===[I will follow through. You shouldn't worry. What you should do is trust my track record. You will be with your family as of 10.01.60 I'll tell Davidovich, but it won't do much good. He's on his way out. **//////////sectransSO134 [Sir, there's a line integrity problem. TrackAd will have an LZ in 0.55. Terminate transmission immediately. Thanks.]//////////** The Sysop is telling me there's a line compromise. We need a better way of talking to you guys up there.
Omega. They'll like that. Gotta go.]===

NF ([name field blank] nightfire@kasm.ares.com)

------------------------------------- intercept terminated

>>>>>[Who posted this?]<<<<<
Fastjack (03:22.41/01-08-60)

>>>>>[I have no idea. Whoever it was, they bypassed our security. ***Captain Chaos sighs.*** I'll be giving Wraith a call.]<<<<<
Captain Chaos (04:01:11/01-08-60)

>>>>>[It's been almost 3 months. About that time...]<<<<<
Fastjack (04:03:50/01-08-60)

>>>>>[Come to Daddy. ***Packs bags, heads for the Great White North.***]<<<<<
Rabid Fire (04:22:32/01-08-60)

Firearms Creation Guide Design, CAR-44 OIWS

Description	DC	Wt	Con	Totals
Carbine	75	4	3	Weapon Type: Carbine
5mm Caseless (CC1520)	50	-10%		Conceal: NA
Advanced Alloy (3)	300	-30%		Ammunition Capacity: 50
50 rounds (+30)	25	1	-2	Firing Mode: SA/BF/FA
Impulse Operated	200			Damage: 8M
Standard Feed (Impulse Clip)				Weight: 4.53kg (9.98lbs)
Smartlink II	25	0.25		Spaces: Top
Advanced Biometric Safety	350	0.15		Grade: Advanced Military
20mm ATG Grenade Launcher	300	2.15	-1	Technology Rating: SOTA
				Design Cost: 6625
				Availability: 18/36 weeks
Totals	1325	4.53	0	Cost (¥): 66,250 ¥ (projected worth per unit)

Fusil Automatique Légere (FAL) Carbine

[50.63 Para]

DS Arms, Inc.
Barrington, IL UCAS

7.62x51mm NATO (.308 Win)

Operation: Gas, Regulated

Safety: Left side selector switch, 0-1-20

Sights: Adjustable flip aperture rear, protected post front

Barrel: 16.25" (436mm)

Weight: 8.26 lbs. (3.75 kg)

Magazine Capacity: 20-rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Para	**7.62mm NATO**	**Assault Rifle**	**3**	**20 clip**	**SA/FA**	**9S**	**3.75**	**5/7 days**	**1,500 ¥**
StG58C	**7.62mm NATO**	**Assault Rifle**	**3**	**20 clip**	**SA/FA**	**9S**	**3.85**	**5/7 days**	**1,050 ¥**
SA58C	**7.62mm NATO**	**Assault Rifle**	**3**	**20 clip**	**SA**	**9S**	**3.85**	**4/48 hrs**	**1,395 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- StG58C model includes bipod.
- Para model includes folding stock. +1 Conceal when folded.
- 30-round magazines available (45¥). -1 Conceal.

Designed by Fabrique Nationale engineers Dieudonne Saive and Ernest Vervier, the Fusil Automatique Légere (Rifle, Automatic, Light) was developed immediately post-war in reaction to the success of the German *sturmgewehr* (assault rifle). The FAL was originally chambered for the 7.92x33mm Kurz cartridge developed by Germany during WWII. However, upon NATO acceptance of the American 7.62x51mm T65 cartridge (essentially a shortened US .30-06 cartridge), the FAL was redesigned to fire it, negating the recoil-mitigating effects of the "intermediate power" cartridge that the assault rifle concept was based around. This unfortunately makes for a rifle that is very difficult to control in full-auto mode, but is more capable than a true assault rifle in terms of long range performance. Regardless of these discrepancies, the FAL has been accepted as the standard infantry rifle of over 90 nations and is still produced and in use by many of them today. It has been manufactured in Argentina, Austria, Australia, Belgium, Brazil, Canada, Chile, Great Britain, India, Israel and South Africa. Only the Kalashnikov rifle has been produced in greater numbers.

The FAL rifle is gas-operated, utilizing a regulated short stroke piston system. Bolt locking is performed in what is considered today to be a fairly unconventional manner. Instead of using a rotating bolt similar to other popular designs like the AK, AR15/M16, and most other modern combat rifles, the FAL uses a dropping block system in which two lugs, located at the rear end of the bolt, lock into recesses in the upper receiver. When a round is fired, propellant gases are tapped from the barrel at the front sight block and pass through a user-adjustable regulator which controls the amount of gas allowed into the system. This allows the rifle to be "tuned" under adverse conditions, allowing reliable function in cold weather or in case of heavy fouling. Once gases pass the regulator, they strike a spring-loaded piston/operating rod assembly located inside of a cylinder above the barrel. Gas pressure impinges upon the piston, forcing the piston/operating rod assembly back a short distance. The rear end of the operating rod strikes the face of the bolt carrier, transferring motion to it. A spring then returns the piston/operating rod to its forward position while the bolt carrier continues travelling rearward. Camming action between the bolt carrier and bolt lifts the locking lugs from their recesses in the receiver and pulls the bolt rearward, extracting and ejecting the spent cartridge case. Spring pressure then returns the bolt carrier and bolt to their battery position, collecting a fresh cartridge from the magazine and loading it into the chamber in the process. The cycle then repeats as necessary.

After the acceptance of the StG77 by the Austrian military, the StG58 (Steyr-produced FAL) was slowly phased out of use. In the early 1990s, a North American company called DS Arms purchased the StG58 tooling and blueprints from Steyr and shipped the equipment to their facility in Illinois. Since then, DS Arms has become one of the most well-known FAL manufacturers, offering several upgrades that bring the FAL into the 21st century. DS Arms offers several variants of the FAL design in various levels of manufacturing quality, from relatively inexpensive "parts kit" guns assembled from European military contract parts, to newly manufactured rifles with modern stainless steel receivers and heavy barrels, CNC machined to Steyr's original specs.

Two versions of the FAL carbine are available. Both models include a 16.25" barrel, sliding aperture rear sight (300m/600m), threaded barrel with flash hider, and a fixed stock. A folding metal stock is available as an option (+350¥, requires changing the lower receiver and bolt carrier; +1 Conceal when folded).

FN's model 50.63, also known as the Para model, was developed for use by paratroopers. It includes an 17.7" (450mm) threaded barrel with flash hider, a flip aperture rear sight (300/600m), and a folding metal stock.

The FAL is still a presence in the world today and likely will be for many many years to come.

More information about the FAL can be found at DS Arms.

Fusil Automatique Légere (FAL) OSW

DS Arms, Inc. Barrington, IL UCAS	
7.62x51mm NATO (.308 Win)	
Operation: Gas, Regulated	
Safety: Left side selector switch, 0-1-20	
Sights: Adjustable flip aperture rear, protected post front	
Barrel: 11-13" (279-330mm)	
Weight: 9.35 lbs. (4.24 kg)	
Magazine Capacity: 20-rounds, detachable box	
Modes of Fire: Safe, semi-automatic, fully automatic	
Cyclic Rate: 600 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
OSW	**7.62mm NATO**	**Carbine**	**3**	**20 clip**	**SA**	**7S**	**4.25**	**4/48 hrs**	**1,525 ¥**
OSW	**7.62mm NATO**	**Carbine**	**3**	**20 clip**	**SA/FA**	**7S**	**4.25**	**5/7 days**	**1,525 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- Folding stock provides a +1 Conceal when folded.
- 30-round magazines available (45¥). -1 Conceal.

Designed by Fabrique Nationale engineers Dieudonne Saive and Ernest Vervier, the Fusil Automatique Légere (Rifle, Automatic, Light) was developed immediately post-war in reaction to the success of the German *sturmgewehr* (assault rifle). The FAL was originally chambered for the 7.92x33mm Kurz cartridge developed by Germany during WWII. However, upon NATO acceptance of the American 7.62x51mm T65 cartridge (essentially a shortened US .30-06 cartridge), the FAL was redesigned to fire it, negating the recoil-mitigating effects of the "intermediate power" cartridge that the assault rifle concept was based around. This unfortunately makes for a rifle that is very difficult to control in full-auto mode, but is more capable than a true assault rifle in terms of long range performance. Regardless of these discrepancies, the FAL has been accepted as the standard infantry rifle of over 90 nations and is still produced and in use by many of them today. It has been manufactured in Argentina, Austria, Australia, Belgium, Brazil, Canada, Chile, Great Britain, India, Israel and South Africa. Only the Kalashnikov rifle has been produced in greater numbers.

The FAL rifle is gas-operated, utilizing a regulated short stroke piston system. Bolt locking is performed in what is considered today to be a fairly unconventional manner. Instead of using a rotating bolt similar to other popular designs like the AK, AR15/M16, and most other modern combat rifles, the FAL uses a dropping block system in which two lugs, located at the rear end of the bolt, lock into recesses in the upper receiver. When a round is fired, propellant gases are tapped from the barrel at the front sight block and pass through a user-adjustable regulator which controls the amount of gas allowed into the system. This allows the rifle to be "tuned" under adverse conditions, allowing reliable function in cold weather or in case of heavy fouling. Once gases pass the regulator, they strike a spring-loaded piston/operating rod assembly located inside of a cylinder above the barrel. Gas pressure impinges upon the piston, forcing the piston/operating rod assembly back a short distance. The rear end of the operating rod strikes the face of the bolt carrier, transferring motion to it. A spring then returns the piston/operating rod to its forward position while the bolt carrier continues travelling rearward. Camming action between the bolt carrier and bolt lifts the locking lugs from their recesses in the receiver and pulls the bolt rearward, extracting and ejecting the spent cartridge case. Spring pressure then returns the bolt carrier and bolt to their battery position, collecting a fresh cartridge from the magazine and loading it into the chamber in the process. The cycle then repeats as necessary.

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The SA58 Offensive Suppression Weapon (OSW) was developed by DS Arms. It is available with an 11" (279mm) or 13" (330mm) barrel, folding tubular metal buttstock, flip up aperture rear sight (300m/600m), and muzzle brake. Optional equipment includes: Rail interface handguard (+235¥), scope mount rail (+150¥), holographic reflex sight (+350¥) and foregrip/whitelight (+250¥).

The FAL is still a presence in the world today and likely will be for many many years to come.

More information about the FAL can be found at DS Arms.

Heckler & Koch G3KA4 Carbine

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: Left side selector switch, 0-1-20

Sights: Rotary diopter, adjustable, four apertures

Barrel: 12.4" (315mm)

Weight: 9.0 lbs. (4.1 kg)

Magazine Capacity: 20 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G3KA4	**7.62mm NATO**	**Assault Rifle**	**3**	**20 clip**	**SA/FA**	**7S**	**4.1**	**5/7 days**	**1,120 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- Retractable stock provides a +1 Conceal when retracted.

The genesis of the G3 (*Gewehr* or Rifle) Battle Rifle actually took place 14 years prior to its adoption and initial production by Heckler & Koch GmbH.

During WWII, an engineering team at Mauser headed by Ludwig Vorgrimler adapted a roller-locking delayed blowback form of operation for use in the second-generation *Sturmgewehr* (assault rifle), designated StG.45. Succeeding the gas piston-operated StG.44, the StG.45 also fired the 7.92x33mm Kurz cartridge. However, the war was brought to an end before production of the StG.45 could begin in earnest.

After the war, Vorgrimler and several other German engineers eventually resumed development of the roller locking design at the *Centro de Estudios Tecnicos de Materiales Especiales* (CETME), Spain's small arms development center located in Seville. The rifle was designed around an experimental 7.92x40mm cartridge.

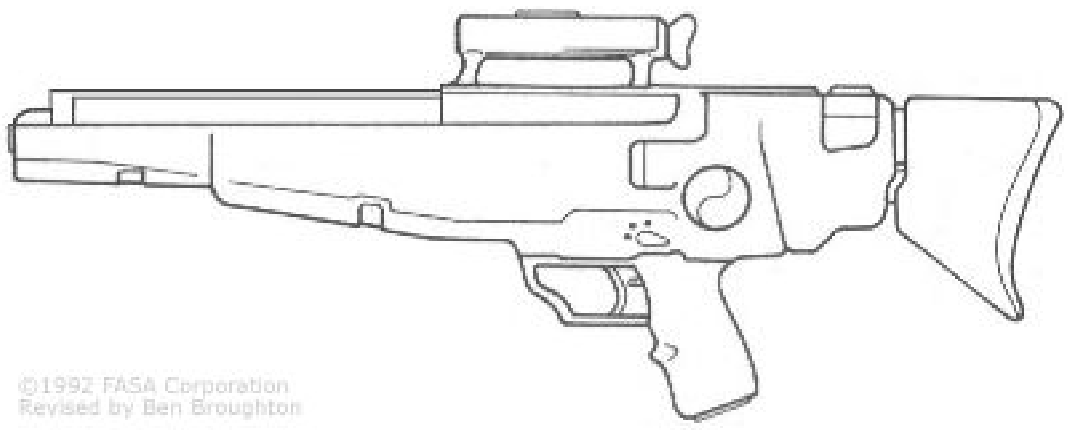
When the American 7.62x51mm T65 cartridge was standardized by NATO in 1954, the German *Bundesgrenzschütz* (Federal Border Guard) tested several 7.62x51mm-chambered rifles, including the Fabrique Nationale FAL (G1), the SIG SG510 (G2), the CETME Modelo A (G3), and the Armalite AR-10 (G4). Out of these, the FN FAL was accepted for service as the G1. However, Fabrique Nationale would not license post-war Germany to produce the FAL. The CETME rifle was then chosen to replace the G1. A manufacturing license was transferred from the Dutch NVM company to Heckler & Koch and production began in 1959.

The legendary G3 Battle Rifle has been used by more than 50 nations since its introduction, including Germany, Greece, Iran, Mexico, Norway, Pakistan, Portugal, Sweden and Turkey. It was the official infantry rifle of the German *Bundeswehr* from 1959 to 1995, when it was replaced by another Heckler & Koch rifle, the G36. As of 2002, Heckler & Koch have ceased production of the G3A3 rifle.

Designed for paratroopers and vehicle crews, the G3KA4 differs from the G3A3 by including a shortened 12.4" (315mm) barrel and a retractable shoulder stock. Due to its modular design, many options are available for the G3A3 and other HK roller-locked weapons.

More information on Heckler & Koch firearms can be found at HKPRO.

Heckler & Koch G12A4



Heckler & Koch GmbH
Oberndorf/Neckar, Germany

6x35mm Caseless CC1520

Operation: Gas

Safety: Ambidextrous selector switch, 0-1-3-50

Sights: 1.5x Optical wind/elev adjustable, backup iron sights

Barrel: 22.5" (571mm)

Weight: 9.7 lbs. (4.4 kg)

Magazine Capacity: 50 rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 600 rpm in FA mode, 2200 rpm in 3RB mode.

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G12A4	**6x35mm**	**Assault Rifle**	**2**	**50 clip**	**SA/BF/FA**	**9M**	**4.37**	**14/18 days**	**5,550 ¥**

- Integral Smartlink Level II.
- Due to its extreme rate of fire in burst mode, this weapon suffers no recoil penalties for the first burst in a Combat Phase. Apply a +1 modifier to any attempt to fire (either in semi-automatic or burst fire mode) the second action in a Combat Phase.
- Cannot accept any barrel-mounted accessories.
- Retractable shoulder stock provides no bonus to Conceal Rating when retracted.

The G12 Caseless Assault Rifle has been redesigned to meet the requirements of the CAS squad rifle trials held in 2058. Though it did not meet the heavy requirements imposed by the CAS trials, we believe it is a superior rifle and it is currently for sale to all establishments with a valid military end-user certificate.

The G12 is a completely redesigned version of the revolutionary G11 Caseless Assault Rifle developed by HK throughout the Cold War years of the 20th century. This new rifle fires the 6x35mm CC1520 caseless round at a rate of fire capable of putting a 3-round burst in the x-ring at 100 meters. An internal buffer system keeps recoil in check until after the burst has left the barrel.

The G12A4 also comes with an ADVAT.328-compliant Smartlink II system and completely compatible with the Rangefinger and ATG retrofits. Magazine capacity has been increased to fifty rounds and the top of the weapon has been fitted with two slots designed to store two additional magazines on the weapon itself.

Like the G12A3z, this weapon can mount the HK70A4 20mm Grenade Launcher with little modification.

More information on Heckler & Koch firearms can be found at HKPRO.

Firearms Creation Guide Design, G12A4

Description	DC	Wt	Con	Totals
Assault Rifle	80	5	2	Weapon Type: Assault Rifle
6x35mm Caseless (CC1520)	50	-10%		Conceal: 2
Polymer-resin Construction (4)	-5	-16%		Ammunition Capacity: 50 Clip
50 rounds (+20)	20	0.5		Firing Mode: SA/BF/FA
Gas Operated	5			Damage: 8M
Retractable Stock	5		1	Weight: 4.37kg (10.25kg with clips stored)
Top Feed	5		-1	Spaces: Top, Under
Smartlink II	25	0.25		Grade: Military
				Technology Rating: SOTA
				Design Cost: 555
				Availability: 14/18 days
Totals	**185**	**4.37**	**2**	Cost (¥): 5,550 ¥

Heckler & Koch HK33 and HK33K

[HK33K]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

5.56x45mm NATO

Operation: Delayed Blowback

Safety: Left side selector switch, "SEF" 0-1-30

Sights: Rotary diopter, adjustable, four apertures

Barrel: Varies (See Below)

Weight: Varies (See Below)

Magazine Capacity:
30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 750 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability
HK53A2	**5.56mm NATO**	**Assault Rifle**	**2**	**30 clip**	**SA/FA**	**9M**	**3.8**	**4/9 days**
HK53KA2	**5.56mm NATO**	**Carbine**	**2**	**30 clip**	**SA/FA**	**9M**	**3.65**	**4/9 days**

Model	Comments	Cost
HK33A2	15.35" (390mm) Barrel, Fixed Stock, SEF Trigger Group	**1,150 ¥**
HK53KA2	12.68" (322mm) Barrel, Fixed Stock, SEF Trigger Group	**1,200 ¥**

- Retractable stock provides a +1 Conceal when retracted.
- Double all recoil modifiers.

Heckler & Koch rifles and carbines are recognized as the most technologically and tactically advanced weapons in the world. Reliability, modular construction, a true “system” approach, and a complete line of shoulder arms and accessories make HK the world leader in tactical armament.

Using the robust and reliable delayed blowback roller-locked bolt operating system first developed by HK engineers for the G3 automatic rifle, Heckler & Koch has created a variety of weapons designed to meet any tactical need.

The HK33 (15.35" [390mm] Barrel) and HK33K (12.68" [322mm] Barrel) are rifle and carbine variants that use the delayed blowback roller-locked bolt operating system with the proven and popular 5.56x45mm NATO (caliber .223) round.

Adjustable rotary diopter sights and a flash suppressor are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the HK33A3-SL2.)

More information on Heckler & Koch firearms can be found at HKPRO.

Heckler & Koch HK53 Carbine

Heckler & Koch GmbH Oberndorf/Neckar, Germany	
5.56x45mm NATO	
Operation: Delayed Blowback	
Safety: Ambidextrous selector switch, 0-1-3-30	
Sights: Rotary diopter, adjustable, four apertures	
Barrel: 8.31" (211mm)	
Weight: 6.72 lbs. (3.05 kg)	
Magazine Capacity: 30 rounds, detachable box	
Modes of Fire: Safe, semi-auto, 3 round burst, full auto	
Cyclic Rate: 700 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability
HK53	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/BF/FA**	**8M**	**3.05**	**4/9 days**

Model	Comments	Cost
HK53A2	Fixed Stock, 3-Round Burst Trigger Group	**980 ¥**
HK53A3	Retractable Stock, 3-Round Burst Trigger Group	**1,000 ¥**

Retractable stock provides a +1 Conceal when retracted.

The HK53, only two inches longer than a 9mm MP5 SMG, offers the compact size and handiness of a submachine gun combined with the increased range and hard-hitting firepower of a high velocity rifle cartridge. Optional trigger group mechanisms, fixed or retractable stocks, and a variety of accessories are available.

Adjustable rotary diopter sights and a vortex flash suppressor are standard on all models.

Smartlink systems are available in HK's *SL Series* variants. ADVAT.228-compliant "SL1", and ADVAT.328-compliant "SL2". (For example, the HK53A3-SL2.)

More information on Heckler & Koch firearms can be found at HKPRO.

Tavor Assault Rifle (TAR) Series

TAR-21 [TAR-21 in Action] [Micro | In Action] [Commando | In Action]

Israeli Military Industries
Ramat Ha Sharon, Israel

5.56x45mm NATO

Operation: Gas, Piston

Safety: Ambidextrous selector switch, 0-1-30

Sights: Reflex, no iron sights

Barrel: 18.1" (460mm)

Weight: 8 lbs. (3.6 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of Fire: Safe, Semi-automatic, fully automatic

Cyclic Rate: 750-900 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
TAR-21	**5.56mm**	**Assault Rifle**	**2**	**30 clip**	**SA/FA**	**9M**	**3.5**	**4/9 days**	**1,130 ¥**
Commando	**5.56mm**	**Carbine**	**3**	**30 clip**	**SA/FA**	**9M**	**3.5**	**4/9 days**	**1,130 ¥**
TAR Micro	**5.56mm**	**Carbine**	**4**	**20 clip**	**SA/BF/FA**	**8M**	**3.2**	**4/9 days**	**980 ¥**

- Integral reflex sight provides a -1 target number for firearms tests.
- Removing the reflex sight does not provide any Conceal Rating bonuses.

Israel Military Industries is launching the new family of the TAVOR assault rifles. The weapon is offered in four configurations:

- The basic design - the TAR-21 Tavor Assault Rifle.
- A sharp-shooting configuration is offered as a squad weapon.
- For commando, airborne, paratroopers and special rescue units, as well as tank crews, a short Tavor assault rifle is offered. (9.84"/250mm Barrel, 7.1 lbs/3.2 kg)
- Micro TAR is specially configured for security forces and special missions. (14.96"/380mm barrel, 7.8 lbs/3.5 kg)

Tavor uses the proven, compact, bullpup design which was optimized to best match the ergonomics and mission requirements of the modern warrior, providing natural handling, intuitive aiming from all firing positions and improved hit accuracy. Accuracy and target acquisition is enhanced through the use of an integral optical reflective reflex sight, which projects the aiming point on the center of the sight. Tavor has an attachment for additional sighting devices, such as a night vision sight, which can be installed with no zeroing. Tavor is gas operated, using rotating bolt action. All types use standard NATO 5.56mm ammunition (M855/SS109) and STANAG 4179 magazines, accommodate a 30 round magazine and sustain a rate of fire of 750-900 rounds per minute.

Avtomat Kalashnikova 100 Series

OSJC Izhmash
Izhevsk, Russia

7.62x39mm, 5.56x45mm NATO

Operation: Gas, Piston

Safety: Right side selector lever, 0-1-30

Sights: Adjustable notch rear, protected post front

Barrel: 16.3" (415mm)

Weight: 7.93 lbs. (3.6 kg)

Magazine Capacity:
30 rounds, detachable box

Modes of Fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AK74M	**5.45x39mm**	**Assault Rifle**	**2**	**30 clip**	**SA/FA**	**9M**	**3.6**	**3/7 days**	**500 ¥**
AK101	**5.56mm NATO**	**Assault Rifle**	**2**	**30 clip**	**SA/FA**	**9M**	**3.6**	**3/7 days**	**500 ¥**
AK103	**7.62x39mm**	**Assault Rifle**	**2**	**30 clip**	**SA/FA**	**9M**	**3.6**	**3/7 days**	**500 ¥**

- Both models include a side folding buttstock which provides +1 Conceal when folded.
- Muzzle brake provides -3 recoil compensation.

The Avtomat Kalashnikova is a global sensation, probably the most popular and recognizable rifle throughout the world. With some 35 million rifles being manufactured and distributed throughout Soviet satellite nations during the Cold War, the original 1947 design eventually evolved into countless variations, finding homes in the hands of army regulars, "freedom fighters" and terrorists alike.

Designed in recognition of the German WWII-era StG44, the AK-47 has come to define the term Assault Rifle: *"A light and compact selective-fire automatic rifle firing a cartridge of such power that it can deliver effective fire to a range of about 500 meters, but at the same time will permit the weapon to be fired in the automatic mode from the shoulder."*

The 100 Series rifles are essentially the same as older variants such as the AKM and AK-74, differing in that they are now offered in a NATO caliber (5.56x45mm) in order to attract an export market, and all models include a side-folding stock and muzzle brake. The 100 series rifles are also manufactured on updated machinery to adhere to tighter tolerances. This only complements weapon's renowned reliability, making a legendary rifle even better. Polymer furniture replaces the traditional wood, which has led to the series nick-name "Black Kalashnikovs". Iron sights graduated to 1000 meters and the AK-74 muzzle brake are standard on all models.

Licensed copies of the Avtomat Kalashnikova have been manufactured in Bulgaria, China, Egypt, East Germany, Hungary, Iraq, North Korea, Poland, Romania, Ukraine, Yugoslavia, and now even North America. Due to the sheer number of Kalashnikov models and copies, it would be quite an undertaking to list each available model here. The rules listed above are intended to represent the real, high-quality, Russian-manufactured rifles and their availability in North America. Knock-offs manufactured in other countries (Bulgarian and Romanian rifles being very common) should be more available and at lower cost, per GM discretion. Other stats should remain unchanged.

http://kalashnikov.guns.ru/

Ruger AC556F

[AC556FSD] [Mini-14SD]

Sturm, Ruger & Co., Inc. Southport, CT UCAS

5.56mm NATO, .300 Whisper

Operation: Gas, Garand

Safety: Garand type, two position sliding

Sights: Adjustable aperture rear, blade front

Barrel: 13" (315mm)

Weight: 7.7 lbs. (3.5 kg)

Magazine Capacity: 5-30 rounds, detachable box

Modes of fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AC556F	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/BF/FA**	**9M**	**3.5**	**6/5 days**	**530 ¥**
AC556FSD	**.300 Whisper**	**Carbine**	**2**	**20 clip**	**SA/BF/FA**	**8M**	**3.5**	**6/5 days**	**1,650 ¥**
Mini-14SD	**.300 Whisper**	**Carbine**	**2**	**5 clip**	**SA**	**8M***	**3.5**	**6/5 days**	**1,350 ¥**

- Folding stock provides +1 Conceal when folded.
- *Using supersonic ammunition increases base Damage Code to 9M.
- See rules for suppression.

The AC556F (Automatic Carbine, 5.56mm, Short Barrel) is the military/police variant of Ruger's popular Mini-14 line of rifles, based on the US M-14 battle rifle. It was introduced in 1976.

Capable of semi-automatic, full-automatic and 3-round burst modes of fire, the AC556 has a pivoting plunger operating selector located at the right rear side of the receiver. With this selector forward, the carbine fires in semi-automatic, midway, 3-round burst fire, and to the rear, the carbine fires full-automatic.

The AC556 is made largely from investment castings that are precision machined and then heat-treated. The stock is made of hardwood, incorporating a hinged, folding metal stock and a polymer pistol grip. The AC556F also includes a short 13" barrel with flash suppressor.

The AC556FSD is an aftermarket conversion of the fully-automatic Ruger AC556F, performed by Suppression Systems, Inc. It is a relatively low-cost suppressed carbine designed for tactical operations. Standard models include the original Ruger folding stock, though several options are available.

The Mini-14SD is an aftermarket conversion of a stock Ruger Mini-14 All-Weather Ranch Rifle. The Mini-14SD is perfect for a variety of uses, from tactical operations to the quiet disposal of farm and ranch pests, such as coyotes or gophers.

The conversion starts with a barrel replacement, followed by gas system and trigger tuning.

Aftermarket accessories include:

- 416 stainless steel barrel with suppressor mounting lugs, 1:7" right hand twist
- Suppression Systems Whisper Suppressor (35+dB noise reduction)
- Gas block-mounted front sight (AR15-type protected post or light-gathering target)
- Three-position gas regulator (Reg, Sub, Off)
- Ruger mount to Picatinny Rail scope mount adapter
- Optional "scout" scope rail (+130¥, scope not included)
- Optional Choate synthetic pistol grip stock (fixed, +70¥)

SIG SG550 (Stgw90)

SIG/Swiss Arms Neuhausen am Rheinfalls, CH	
5.56x45mm NATO	
Operation: Gas, Regulated	
Safety: Ambidextrous selector switch, 0-1-3-30	
Sights: Rotary diopter, adjustable, four apertures	
Barrel: 20.79" (528mm)	
Weight: 9 lbs. (4.1 kg)	
Magazine Capacity: 30 rounds, detachable box	
Modes of Fire: Safe, semi-auto, 3-round burst, full auto	
Cyclic Rate: 700 rpm	

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SG550	**5.56mm NATO**	**Assault Rifle**	**2**	**30 clip**	**SA/BF/FA**	**9M**	**4.1**	**4/9 days**	**1,250 ¥**

- Includes folding bipod.
- Includes side folding buttstock which provides +1 Conceal when folded.

The SG550 is an improvement upon a previous SIG design, the SG540. Developed during the 1970's mass shift to the 5.56x45mm cartridge put to use by the US military during the Vietnam War, the SG540 had subsequently seen respectable foreign sales (to African and Middle Eastern countries) and manufacture licensing (Manhurin of France and FAMAE of Chile both manufactured the SG540). Thus, the SG550 was an evolutionary development designed to meet a Swiss Army requirement for a new service rifle in 1984. Competing amongst other rifles, the SIG design was selected for issue and became the Stgw.90 (*Sturmgewehr*; assault rifle model 90) in 1986, eventually replacing the Stgw.57 as the official Swiss rifle.

Like the SG540, the SG550 can be considered an amalgamation of a few previous rifle designs with a few distinct improvements. The SG550 uses a modified Kalashnikov-type long stroke gas piston operating system in which the piston is directly attached to the bolt carrier (though the two parts are separated during field stripping). Unlike the AK, the return spring is located around the piston and inside of the gas tube. The gas system includes a three-position regulator allowing the user to adjust gas flow as necessary. An "off" setting keeps the action from cycling automatically and allows the user to launch rifle grenades. A second position allows the action to cycle and function normally. A third position allows the rifle to function reliably when excessively fouled or in severe inclement weather. Breech locking is performed by a two-lug rotating bolt similar to that of the AK.

Separate upper and lower receiver assemblies are secured together by crosspins, similar to the AR15/M16. This allows quick and easy access to the rifles internals for cleaning and maintenance. However, the receivers are manufactured from plastic-coated steel stampings rather than anodized aluminum forgings. The rear sight is a multi-aperture rotary diopter originally developed by HK and used on the G3 rifle. It is adjustable for both windage and elevation (400m) and is removable. The front sight is a folding post with optional hood. Tritium inserts are standard on both front and rear sights for easy low-light sight acquisition. The upper receiver includes a tab and slot arrangement ahead of the rear sight designed to mount a variety of different scope mounts, including an M1913 Picatinny rail with an integrated flip-up aperture emergency rear sight to replace the larger diopter. A removable bipod is also included as standard equipment.

Unlike either the AK or M16, the SG550 includes an ambidextrous, four-position fire selector including safe, semi-automatic, three-round burst, and fully automatic modes. Interestingly, the burst and full automatic modes can be locked out at the armorer level if necessary, making the rifle semi-automatic only. The lower receiver also includes a stock which folds and positively locks to the right side of the receiver. The pistol grip includes a compartment for storing a cleaning kit or other necessary items.

Another interesting feature of SG550 is the provision of studs and slots on its translucent plastic magazines. Multiple magazines can be clipped together side by side, one of which can then be inserted into the magazine well and locked via an ambidextrous, AK-type, thumb-operated latch. When the last shot is fired, changing to a full magazine can be done by pulling the assembly out, shifting it sideways and replacing it with one of the loaded magazines.

The SG550 is widely regarded as one of the best assault rifles ever put into military service.

Relevant US patents: 4433611, 4443962, 4484403

SIG SG551 SWAT

SIG/Swiss Arms
Neuhausen am Rheinfalls, CH

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Ambidextrous selector switch, 0-1-3-30

Sights: Rotary diopter, adjustable, four apertures

Barrel: 14.64" (372mm)

Weight: 7.71 lbs. (3.5 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SG551	**5.56mm NATO**	**Carbine**	**3**	**30 clip**	**SA/BF/FA**	**9M**	**3.5**	**4/9 days**	**1,100 ¥**

Includes side folding buttstock which provides +1 Conceal when folded.

SIG's SG 551-SWAT is a gas-operated weapon conceived specifically for special forces and elite units. Incorporating synthetics and corrosion-resistant materials, it is highly suitable for maritime engagements. The weapon is based on the proven design concepts of the SG 551 (SG is an abbreviation for Sturmgewehr, or assault rifle) and is extremely compact. The optimal layout and outstanding weight distribution provide convincing accuracy and recoil characteristics.

The SG 551-SWAT is equipped with a highly tested and accurate sighting system. A combined diopter and snapsight shooting assembly is mounted on the receiver housing and calibrated for selected ranges. This rear sight resembles that found on HK rifles and submachineguns, and it is adjustable for both windage and elevation. It is also equipped with tritium-illuminated markings for night firing. The front sight is equipped with a protective hood and a flip-up night sight that is also illuminated with tritium. A universal scope mount is available for the SG 551-SWAT that accepts a wide range of sighting aids such as night-vision equipment, Trijicon ACOGs and other STANAG-based optics without the need for special tools or adapters. A universal fitting on the foresight mount accepts special equipment such as bipods or laser sighting aids and provides a safe means of attaching the weapon in transport vehicles.

All components of the SG 551-SWAT are manufactured to withstand the rigors of combat in any environment. Exposed steel parts such as the upper/lower receiver, sights, magazine release and trigger are coated in plastic to resist corrosion. The folding buttstock, pistol grip, handguards and magazine are all manufactured from high-impact synthetics. The gas system's components are made of stainless steel. The barrel, bolt, carrier, and firing pin are all made with steel that has been gas nitrided, hardened and tempered. The bolt and carrier, along with most other components internal to the receivers, undergo a special phosphating procedure. The result of SIG's engineering is a rifle that is especially suited for tropical and maritime operations.

Text courtesy of SIGARMS. Relevant US patents: 4433611, 4443962, 4484403

SIG SG552 Commando

[SG552 with Trijicon ACOG Reflex]

SIG/Swiss Arms
Neuhausen am Rheinfalls, CH

5.56x45mm NATO

Operation: Gas, Regulated

Safety: Ambidextrous selector switch, 0-1-3-30

Sights: Rotary diopter, adjustable, hooded post

Barrel: 8.9" (226mm)

Weight: 7.1 lbs. (3.2 kg)

Magazine Capacity: 30 rounds, detachable box

Modes of Fire: Safe, semi-auto, 3-round burst, full auto

Cyclic Rate: 700 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SG552	5.56mm NATO	Carbine	4	30 clip	SA/BF/FA	8M	3.5	4/9 days	1,050 ¥

Includes side folding buttstock, though it provides no Conceal bonus on this weapon.

SIG's SG 552 Commando is a gas-operated weapon conceived specifically for special forces and elite units. Incorporating synthetics and corrosion-resistant materials, it is highly suitable for maritime engagements. The weapon is based on the proven design concepts of the SG 552 (SG is an abbreviation for Sturmgewehr, or assault rifle) and is extremely compact. The optimal layout and outstanding weight distribution provide convincing accuracy and recoil characteristics.

The SG 552 Commando is equipped with a highly tested and accurate sighting system. A combined diopter and snapsight shooting assembly is mounted on the receiver housing and calibrated for selected ranges. This rear sight resembles that found on HK rifles and submachineguns, and it is adjustable for both windage and elevation. It is also equipped with tritium-illuminated markings for night firing. The front sight is equipped with a protective hood and a flip-up night sight that is also illuminated with tritium. A universal scope mount is available for the SG 552 Commando that accepts a wide range of sighting aids such as night-vision equipment, Trijicon ACOGs and other STANAG-based optics without the need for special tools or adapters. A universal fitting on the foresight mount accepts special equipment such as bipods or laser sighting aids and provides a safe means of attaching the weapon in transport vehicles.

All components of the SG 552 Commando are manufactured to withstand the rigors of combat in any environment. Exposed steel parts such as the upper/lower receiver, sights, magazine release and trigger are coated in plastic to resist corrosion. The folding buttstock, pistol grip, handguards and magazine are all manufactured from high-impact synthetics. The gas system's components are made of stainless steel. The barrel, bolt, carrier, and firing pin are all made with steel that has been gas nitrided, hardened and tempered. The bolt and carrier, along with most other components internal to the receivers, undergo a special phosphating procedure. The result of SIG's engineering is a rifle that is especially suited for tropical and maritime operations.

Text courtesy of SIGARMS. Relevant US patents: 4433611, 4443962, 4484403

Springfield Armory M1A / M14 Battle Rifle

[M1A] [Squad Scout] [SOCOM 16] [SOCOM II]

Springfield Armory
Geneseo, IL UCAS

7.62x51mm NATO (.308 Win)

Operation: Gas, Regulated

Safety: Garand type, two position sliding

Sights: Adjustable aperture rear, protected post front, SM

Barrel: 16-22" (406-558mm)

Weight: 8.9-9.2 lbs (4-4.2 kg)

Magazine Capacity: 10-30 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic (750 rpm)

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M1A	**7.62mm NATO**	**LMG**	**2**	**10 clip**	**SA**	**9S**	**4.2**	**4/48 hrs**	**1,500 ¥**
M14	**7.62mm NATO**	**LMG**	**2**	**20 clip**	**SA/FA**	**9S**	**4.2**	**5/7 days**	**1,700 ¥**
Scout	**7.62mm NATO**	**Assault Rifle**	**2**	**20 clip**	**SA**	**9S**	**4**	**5/72 hrs**	**1,610 ¥**
SOCOM	**7.62mm NATO**	**Assault Rifle**	**3**	**20 clip**	**SA**	**9S**	**4**	**5/72 hrs**	**1,760 ¥**

- Double all uncompensated recoil modifiers per SR3.111.
- All models can use 5, 10, 20, and 30 round magazines interchangeably. Extra magazines 25¥ each.
- Squad Scout and SOCOM 16 models include a forward scope mount.
- SOCOM II includes a four-position forward mounting rail (1,950¥).

After WWII, several countries formed the North Atlantic Treaty Organization (NATO) in order to come to an agreement regarding military defenses and the standardization of military resources for logistical purposes. One of the standards drafted was that of a rifle cartridge. Member nations designed several different weapon systems for use with several different cartridges. The US offered its T65 cartridge, essentially a shortened .30-06. Pressing NATO for acceptance of the .30 caliber cartridge that the US military establishment had become so fond of, the cartridge was finally accepted as the 7.62x51mm NATO.

Other member nations re-designed their rifles to accept this cartridge. Notable rifles include Fabrique Nationale's FAL (which was accepted in the UK as the L1A1), CETME's Model 58 (which was revised and adopted by West Germany as the G3), and the US rifle, the M14, which was an updated, fully automatic version of the WWII-era M1 Garand rifle.

The M14 differed from the M1 in a few ways. First, it included a detachable box magazine, a great improvement over the M1 Garand's en bloc clip loading device. Second, the rifle included a provision for full automatic fire. This complicated matters by requiring a redesign of the gas system and bulking up the rifle to make it capable of absorbing the repeated heavy recoil. The M14 was accepted for service in 1957. It was the last rifle designed and produced by the US government's Springfield Armory in Springfield, Massachusetts. The armory was subsequently closed in 1968.

Shortly after acceptance it was found that the M14 was very difficult for the majority of soldiers to control in full auto mode. Therefore, selector levers were pinned down in order to allow semi- automatic fire only. Several variants have been developed, namely the M14A1, a light machinegun platform (cancelled due to the M60), and the M21, a sniper rifle platform developed during the Vietnam War.

In 1974 the Reese family purchased the rights to use the "Springfield Armory" name in private commerce. The company now manufactures firearms that were produced at the original Springfield Armory, including the M1 Garand, M14, and the Model 1911 pistol. Development of the M14 has continued to include a civilian-legal semi-automatic version called the M1A. The M1A itself brought further development of the platform to include enhanced sniper rifles such as the M25, and shortened rifles intended for mid-range and close quarters support, such as the 18-inch barreled Scout Squad and 16-inch barreled SOCOM 16 rifles.

The M14 was developed and manufactured by the now-defunct US Springfield Armory, Winchester, Harrington & Richardson and Thompson-Ramo-Wooldridge from 1957-1964. Approximately 1.3 million were produced in the US. Production machinery was sold to Taiwan in 1967, where about another 1 million rifles were manufactured. Rifles have also been produced in China and the Philippines.

Assault Rifle History, Applications and Performance

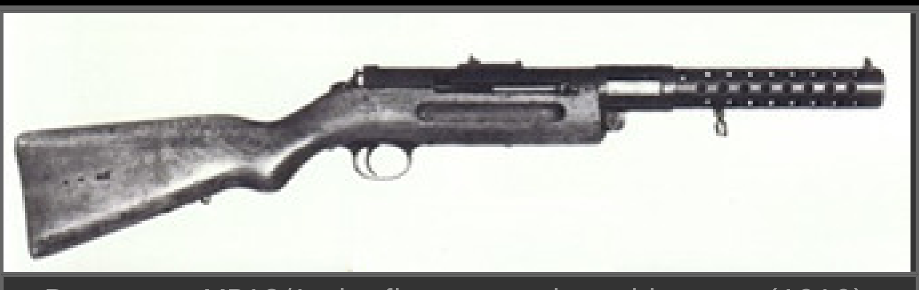
"It is well that war is so terrible, lest we should grow too fond of it."
- Robert E. Lee, Battle of Fredricksburg, 13 December 1862


MP43/StG44 *Sturmgewehr*, the first assault rifle (1943).

It can be argued that Vladimir Fedrov invented the assault rifle in 1916 after the Russo-Japanese War, using commandeered 6.5x50SRmm Arisaka rifle ammunition. However, very few examples of his design were manufactured. The resulting attempt at putting this type of rifle in service at that time can also be considered abortive, not only because of a lack of interest in the design, but also because of the October Revolution of 1917. At any rate, Federov's "avtomat" was well ahead of its time.

What is known as the "assault rifle" has only come into regular military use over the last sixty years, a very short span of time considering the history of warfare. The *sturmgewehr* (the German word for *assault rifle*), as it is rumored Hitler personally christened it, was developed during World War Two, in recognition of battlefield facts.

Prior to WWII, rifles for the infantryman had been designed for use on the open battlefield and were capable of good accuracy out to a range of 800-1,000 meters. However, by WWII, modern battlefield and military tactics had evolved away from engagements over open tracts of land and had migrated to combat within urban environments. As such, it was discovered that the average rifle infantryman during WWII rarely if ever engaged targets beyond a distance of 300 meters. Thus, the heavy-recoiling cartridges and slow-loading bolt-action rifles of the time weren't particularly suited for the majority of modern infantry combat.


Bergmann MP18/I, the first true submachine gun (1916).

While the Germans were very aware of the submachine gun prior to WWII (Hugo Schmeisser practically invented the concept with the MP18/I), they learned an expensive lesson on the eastern front from the Russians, who in turn learned it from the Finns. Small, fully-automatic, shoulder-fired firearms were very effective combat tools in urban environments where engagements occur most often at very close range. However, submachine guns were limited by the pistol ammunition that they fired and were rarely effective beyond about 100 meters.

Thus, the development of the *sturmgewehr* began, with the intention of melding two concepts into one weapon. The first thing to change was the ammunition. What was created is now known as an "intermediate-power" rifle cartridge. In terms of ballistic performance, this cartridge fits between the 9mm Parabellum pistol cartridge used in submachine guns and the "full-power" 7.92x57mm rifle cartridge used in infantry rifles. The standard 7.92x57mm rifle cartridge was cut back to 33mm and bullet weight was reduced from 154 to 125 grains, creating the 7.92x33mm *Kurz* or *short* cartridge. This cartridge was still effective to 300-400 meters, but generated much less recoil. Using this ammunition in combination with a selector mechanism, the sturmgewehr could be used in either the traditional rifle role or the submachine gun role. In the rifle role, targets could be engaged at long range with single shots. Should the infantryman find himself in close contact with the opposition, he could then select automatic fire and use the weapon as he would a submachine gun.

The Russians were the first to come into contact with the *sturmgewehr* and its ruthless efficiency. They immediately made plans to capitalize on the concept (as far as communists can be considered to do such a thing) after capturing examples in several places along the front. The concept of the assault rifle eventually made its way to a young Russian tank commander on convalescent leave in Kazakhstan. His name was Mikhail Kalashnikov.

Battle Rifles

The term *battle rifle* is often used to cover a variety of rifle types, all of which are simply rifles that were designed to be taken into battle. The first to encounter the term were bolt-action rifles designed around the turn of the twentieth century that were slightly shorter than the then-accepted norm. They fired what are now termed "full-power" rifle cartridges and were effective out to a range of 800-1,000 meters. The Mauser 98, Lee-Enfield SMLE, and Springfield M1903, among others, fit into this group.


M1 Garand, US battle rifle (1936-1957).

In the mid-to-late 1930s, semi-automatic rifles were developed to fire these full-power rifle cartridges. The M1 Garand became standard issue in the US Army, and the Tokarev SVT found use in smaller numbers in the Russian military. These are also often referred to as battle rifles.

After WWII, the North Atlantic Treaty Organization (NATO) was formed. Member countries focused some attention upon standardization of many things for logistical purposes. One of the standards to be drafted was that of a rifle cartridge and possibly a rifle to fire it. Several member nations tried their hand at it and some of the designs, particularly Great Britain's EM2 rifle, were far in advance of the times. However, the US, using its political clout, managed to persuade NATO to accept a slightly shortened but no less powerful version of their .30-06 rifle cartridge, which was given the designation 7.62x51mm NATO.


The Springfield M-14 (1957-1964), now a sniper support weapon.

Many of the rifle designs in progress at the time were were developed using the lessons learned from the *sturmgewehr*, incorporating a selector mechanism for semi- and full-automatic fire. However, the ammunition that was standardized did not fall into the assault rifle concept. The 7.62x51mm was still a full-power rifle cartridge, designed to be effective at relatively long range. Some rifles were re-worked to accept the 7.62x51mm cartridge while others, including the EM2, could not be redesigned without incurring major costs. Users of Fabrique Nationale's FAL, the US M-14 (pictured at right), and upstart company Heckler & Koch's G3 found in short order that full-automatic fire with such a powerful cartridge was very difficult to master and inaccurate even at close range due to the high level of recoil generated by the cartridge. Because of this, the more modern, fully-automatic incarnation of the battle rifle has largely been phased out of the military service of first-world nations in favor of true assault rifles.

Carbines

The common definition of the word *carbine* is simply, "a lightweight rifle with a short barrel." With that in mind, the term has been in use for quite a while, in regard to rifle designs that have been abbreviated in any manner of ways. The term has been used to describe a version of the Springfield "Trapdoor" single-shot rifle, which was developed to suit the use of horse-mounted cavalry. The Mauser G98 became the Karabiner 98K while the US developed the M1 Carbine during WWII. The list goes on.


M16A2 (1982) and M4 Carbine (1994).

Today, the term "carbine" is more commonly used to describe a compact assault rifle. A good example of this is the carbine version of the M16A2 assault rifle, designated by the US military as the M4 carbine. It differs from the M16A2 by including a 14.5-inch barrel (shortened from 20 inches) and a retractable shoulder stock, in order to make the weapon more compact. The same can be said for the AKS-74U, which is a compact version of the Russian AK-74 assault rifle that includes a 8.26-inch barrel (shortened from 15.75 inches) and a folding shoulder stock.

The carbine is usually reserved for close range work (MOUT and CQB environments). In recent years, many police SWAT, hostage rescue, and counter-terrorism teams have begun to transition away from the use of the submachine gun to the carbine, mostly because of the proliferation of body armor and the higher penetration potential that rifle cartridges offer over pistol cartridges.

For lack of a better term, marketeers over the years have hastened to attach the word "carbine" to long-barreled, semi-automatic firearms that fire pistol cartridges. Depending on who you talk to, this may or may not be a proper use of the term.

Battle/Assault Rifle Performance ^

Description (Ballistics)	Weight (lbs)	Cartridge	Capacity	ROF
Mauser StG44 "Sturmgewehr"	11.25	7.92x33mm	30	500
Soviet AK-47	9.5	7.62x39mm	30	600
Fabrique Nationale FAL	9.8	7.62x51mm	20	600
US Springfield M-14	8.55	7.62x51mm	20	750
Heckler & Koch G3	9.7	7.62x51mm	20	600
Colt M16A1	6.3	5.56x45mm	30	800
Soviet AK-74	8.5	5.45x39mm	30	600
Fabrique Nationale M16A2	8.0	5.56x45mm	30	750
Colt M4 Carbine	5.6	5.56x45mm	30	850
Heckler & Koch G11K2	8.4	4.73x33mm	50	400/2200

Browning A-Bolt Eclipse M1000

Browning North America, Inc.
Tacoma, SEATAC, UCAS

.300 Win Mag

Operation: Bolt Action

Safety: Two-position sliding

Sights: None; drilled and tapped for scope mounts

Barrel: 26" (660mm)

Weight: 9.8 lbs. (4.45 kg)

Magazine Capacity:
3 rounds, detachable box

Modes of fire:
Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M1000	.300 Win Mag	MMG	NA	3 clip	SS	12S	4.45	4/48 hrs	1,050 ¥

- No iron sights.
- BOSS system provides 1 point of recoil compensation.
- A-Bolt detachable magazines require a Complex Action to change. (Open floorplate, change magazine, close floorplate.) Alternately, the action can be opened and a number of rounds equal to the user's Quickness can be added to the magazine one at a time.

The A-Bolt takes a proven action and adds top features to create the most accurate out-of-the-box rifles in the world. A smooth, adjustable trigger pull, easily accessible top-tang safety, detachable box magazine and a bolt set at an ergonomically perfect angle with a 60° throw set the A-Bolt apart. The free-floating barrel is glass-bedded at the recoil lug to maintain the proper spacing around the barrel for consistent accuracy. The non-rotating sleeve that runs the entire length of the bolt and a patented cartridge depressor prevent binding.

Eclipse series A-Bolt derives its name because it is truly capable of target eclipse — slapping one shot on top of another, on top of another. A rugged laminated thumbhole stock with a specially configured cheek piece makes Eclipse series A-Bolt extremely steady and stable. The M-1000 features a heavy bull barrel with the Ballistic Optimizing Shooting System (BOSS) for enhanced accuracy.

Browning A-Bolt Hunter Series

Browning North America, Inc.
Tacoma, SEATAC, UCAS

Various Chamberings

Operation: Bolt Action

Safety: Two-position sliding

Sights: None; drilled and tapped for scope mounts

Barrel: 20-26" (508-660mm)

Weight: Varies

Magazine Capacity:
3-6 rounds, internal box

Modes of fire:
Safe, Fire

Hunter Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.223 Rem	Assault Rifle	2	6 clip	SS	9M	2.8	2/24 hrs	620 ¥
.22-250 Rem	Sport Rifle	2	4 clip	SS	10M	2.8	2/24 hrs	620 ¥
25-06 Rem	LMG	2	4 clip	SS	9S	2.8	2/24 hrs	620 ¥
.260 Rem	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	620 ¥
.270 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	620 ¥
7mm-08 Rem	LMG	2	4 clip	SS	9S	2.9	2/24 hrs	620 ¥
.308 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	620 ¥
.30-06 Spring	Sniper Rifle	2	4 clip	SS	9S	3.0	2/24 hrs	620 ¥
7mm Rem Mag	MMG	NA	3 clip	SS	11S	3.2	2/24 hrs	650 ¥
.270 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥
7mm WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥
.300 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥
.300 Win Mag	MMG	NA	3 clip	SS	12S	3.2	2/24 hrs	650 ¥
.338 Win Mag	MMG	NA	3 clip	SS	13S	3.2	2/24 hrs	650 ¥

Classic Hunter Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.270 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥
7mm WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥
.300 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	650 ¥

Micro Hunter Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.22 Hornet	Carbine	2	3 clip	SS	9M	2.8	2/24 hrs	615 ¥
.223 Rem	Assault Rifle	2	4 clip	SS	9M	2.8	2/24 hrs	615 ¥
.22-250 Rem	Sport Rifle	2	3 clip	SS	10M	2.8	2/24 hrs	615 ¥
.243 Win	LMG	2	3 clip	SS	8S	2.8	2/24 hrs	615 ¥
7mm-08 Rem	LMG	2	3 clip	SS	9S	2.8	2/24 hrs	615 ¥
.308 Win	LMG	2	3 clip	SS	9S	2.8	2/24 hrs	615 ¥

- No iron sights except on .375 H&H model.
- Non-magnum rifles include a 22" (558mm) barrel. Magnum rifles have a 26" (660mm) barrel.
- Micro Hunter .22 Hornet model includes a 22" (558mm) barrel. All others have a 20" (508mm) barrel.
- A-Bolt detachable magazines require a Complex Action to change. (Open floorplate, change magazine, close floorplate.) Alternately, the action can be opened and a number of rounds equal to the user's Quickness can be added to the magazine one at a time.

The A-Bolt takes a proven action and adds top features to create the most accurate out-of-the-box rifles in the world. A smooth, adjustable trigger pull, easily accessible top-tang safety, detachable box magazine and a bolt set at an ergonomically perfect angle with a 60° throw set the A-Bolt apart. The free-floating barrel is glass-bedded at the recoil lug to maintain the proper spacing around the barrel for consistent accuracy. The non-rotating sleeve that runs the entire length of the bolt and a patented cartridge depressor prevent binding.

All Hunter Series rifles share a practical grade of walnut and low-luster blueing to make the Hunter Series hard-working rifles for rugged conditions. The original Hunter model has a classic-style stock while the Classic Hunter model utilizes a select Monte Carlo style stock accented with double-bordered checkering.

Hunter

A practical grade of walnut and low-luster bluing make the Hunter a practical, hard-working rifle for rugged conditions. All the A-Bolt advantage, including a fast-cycling bolt and crisp, adjustable trigger. A walnut, classic-style stock has a satin finish for appearance and function. Low-luster blueing. No Sights.

Classic Hunter

The low-luster bluing and select walnut stock look elegant but are very practical for the field. It has a Monte Carlo stock with the addition of a palm swell. The stock is accented with double-bordered checkering. No iron sights.

Non-magnum rifles include a 22" (558mm) barrel. Magnum rifles include a 26" (660mm) barrel.

Micro Hunter

The Micro Hunter model features a shorter length of pull and a shorter barrel to accommodate smaller hunters or simply make an excellent compact mountain rifle.

Browning A-Bolt Stalker Series

Browning North America, Inc.
Tacoma, SEATAC, UCAS

Various Chamberings

Operation: Bolt Action

Safety: Two-position sliding

Sights: None; drilled and tapped for scope mounts

Barrel: 22-26" (558-660mm)

Weight: Varies

Magazine Capacity:
3-4 rounds, internal box

Modes of fire:
Safe, Fire

Stainless Stalker Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.243 Win	Sport Rifle	2	4 clip	SS	8S	2.8	2/24 hrs	813 ¥
25-06 Rem	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	813 ¥
.260 Rem	LMG	2	4 clip	SS	9S	2.8	2/24 hrs	813 ¥
.270 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	813 ¥
7mm-08 Rem	LMG	2	4 clip	SS	9S	2.8	2/24 hrs	813 ¥
.308 Win	LMG	2	4 clip	SS	9S	2.8	2/24 hrs	813 ¥
.30-06 Spring	Sniper Rifle	2	4 clip	SS	9S	3.0	2/24 hrs	813 ¥
7mm Rem Mag	MMG	NA	3 clip	SS	11S	3.3	2/24 hrs	840 ¥
.270 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	840 ¥
7mm WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	840 ¥
.300 WSM	MMG	2	3 clip	SS	12S	3.0	2/24 hrs	840 ¥
.300 Win Mag	MMG	NA	3 clip	SS	12S	3.3	2/24 hrs	840 ¥
.300 Ultra Mag	MMG	NA	3 clip	SS	13S	3.3	2/24 hrs	840 ¥
.338 Win Mag	MMG	NA	3 clip	SS	13S	3.3	2/24 hrs	840 ¥
.338 Ultra Mag	MMG	NA	3 clip	SS	14S	3.3	2/24 hrs	840 ¥
.375 H&H Mag	Sport Rifle	NA	3 clip	SS	10D	3.3	2/24 hrs	840 ¥

- No iron sights except on .375 H&H model.
- Non-magnum rifles include a 22" (558mm) barrel. Magnum rifles have a 26" (660mm) barrel.
- A-Bolt detachable magazines require a Complex Action to change. (Open floorplate, change magazine, close floorplate.) Alternately, the action can be opened and a number of rounds equal to the user's Quickness can be added to the magazine one at a time.

The A-Bolt takes a proven action and adds top features to create the most accurate out-of-the-box rifles in the world. A smooth, adjustable trigger pull, easily accessible top-tang safety, detachable box magazine and a bolt set at an ergonomically perfect angle with a 60° throw set the A-Bolt apart. The free-floating barrel is glass-bedded at the recoil lug to maintain the proper spacing around the barrel for consistent accuracy. The non-rotating sleeve that runs the entire length of the bolt and a patented cartridge depressor prevent binding.

The A-Bolt Stalker represents the first, and still the best composite-stocked production rifles. Stalkers are made to resist rough weather, nicks, scrapes and scratches. Available with a stainless steel or blued barrel and action and in a carbon fiber barrel model. The BOSS accuracy device is an option on several models.

Stainless Stalker

> From butt to muzzle, the Stainless Stalker is made to resist rough conditions with its weather-resistant, stainless steel barrel and action and its graphite-fiberglass stock. Available in a full range of long- and short-action calibers. No Sights.

Marlin Model 1894

[1894P] [1894C] [1894CP]

Marlin Firearms Co., Inc.
North Haven, CT UCAS

Various Chamberings

Operation: Lever Action

Safety: Cross bolt hammer block

Sights: Folding semi-buckhorn rear, hooded post front

Barrel: Varies

Weight: Varies

Magazine Capacity: 8-10 rounds, tubular magazine

Modes of fire: Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
1894	.44 Mag	Light Carbine	2	10 (m)	SS	11M	2.7	2/24 hrs	550 ¥
1894P	.44 Mag	Light Carbine	3	8 (m)	SS	11M	2.6	2/24 hrs	540 ¥
1894C	.357 Mag	Light Carbine	3	9 (m)	SS	10M	2.7	2/24 hrs	540 ¥
1894CP	.357 Mag	Light Carbine	3	8 (m)	SS	10M	2.6	2/24 hrs	530 ¥

- Rifles chambered in .44 Magnum can also fire .44 Special ammunition. Reduce Damage Code to 9M and range to SMG.
- Rifles chambered in .357 Magnum can also fire .38 Special ammunition. Reduce Damage Code to 7M and range to SMG.
- Use reloading rules for Internal Magazines on p.280 of SR3. Requires one Simple Action to chamber a round after loading.

Chambered for .44 Magnum/44 Special, the Model 1894 is a brush buster that spits out 10 fast shots with incredible knockdown power (in .44 Magnum), making it a favorite for deer and black bear. With its checkered straight-grip stock and square bolt, the 1894 has a heft and feel similar to the very first 1894 we made. Its 20" (508mm) barrel has deep-cut Ballard-type rifling. It makes a great companion to handguns of the same caliber.

Model 1894P

Based on the popular Guide Gun in .45-70, and the Outfitter in .444, we offer a compact package in .44 Magnum with a ported 16.25" (412mm) barrel. This 8-shot, 5.75 lb. carbine is ideal for hikers, campers and trappers. It stows easily and has plenty of knockdown power for deer and black bear. It's equipped with a checkered American black walnut stock with a ventilated recoil pad and swivel studs.

Model 1894C

Chambered for 357 Mag./38 Spl., the 1894C is the natural sidekick to the 357 Magnum or 38 Special handgun. An 18.5" (470mm) barrel with deep-cut Ballard-type rifling, and superb balance, together with six machined solid steel forgings and a checkered American black walnut straight-grip stock, make this an extremely quick-handling little carbine.

Model 1894CP

Another compact package for hikers, campers and trappers is our new Model 1894CP in 357 Magnum. It is the perfect lightweight carbine. Not only does it stow and backpack easily, it is the perfect companion for revolvers of the same caliber. Like our Model 1894P, it features a ported 16.25" (412mm) barrel with an 8-shot tubular magazine and a checkered American black walnut stock.

Marlin Model 1895

[1895G] [1895GS] [1895 Cowboy] [1895M]

Marlin Firearms Co., Inc.
North Haven, CT UCAS

45-70 Govt, .450 Marlin

Operation: Lever Action

Safety: Cross bolt hammer block

Sights: Folding semi-buckhorn rear, hooded post front

Barrel: Varies

Weight: Varies

Magazine Capacity:
4-9 rounds, tubular magazine

Modes of fire:
Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
1895	.45-70 Govt	Carbine	2	4 magazine	SS	7D	3.4	2/24 hrs	600 ¥
1895G	.45-70 Govt	Carbine	2	4 magazine	SS	7D	3.2	2/24 hrs	615 ¥
1895GS	.45-70 Govt	Carbine	2	4 magazine	SS	7D	3.2	2/24 hrs	720 ¥
1895CB	.45-70 Govt	Assault Rifle	NA	9 magazine	SS	7D	3.6	2/24 hrs	775 ¥
1895M	.450 Marlin	Carbine	2	4 magazine	SS	8D	3.2	2/24 hrs	650 ¥

Use reloading rules for Internal Magazines on p.280 of SR3. Requires one Simple Action to chamber a round after loading.

The Marlin Model 1895 represents the finest in lever action big bore rifles. Available in five different configurations, the Model 1895 ejects spent cases from the side, making this lever action ideal for mounting scopes. The Model 1895 can handle the toughest .45-70 loads on the market.

The basic Model 1895 is the tried and true configuration of this famous .45-70 rifle. It features a 22" (558mm) barrel with deep-cut Ballard-type rifling and an American black walnut pistol grip stock with cut checkering and swivel studs.

Models 1895G and 1895GS "Guide Gun"

The hunter who's looking for plenty of power in a compact, stow-anywhere package will find the ideal solution in our Model 1895G. The mighty .45-70 Government cartridge has proven its worth on every species of large North American game, from Maine to Alaska. This rugged lever action rifle weighs only 7 lbs., and features a ported 18.5" (470mm) barrel with Ballard-type cut rifling.

The Model 1895G Guide Gun is also available in stainless steel (**1895GS**). The receiver, barrel and all major metal parts are machined from stainless steel, and most other metal parts are nickel-plated.

Both Guide Guns feature a ported 18.5" (470mm) stainless steel barrel with Ballard-type cut rifling, a 4-shot tubular magazine, an adjustable semi-buckhorn folding rear sight and ramp front sight with brass bead and Wide-Scan™ hood. The stock is American black walnut with cut checkering and a ventilated recoil pad.

Model 1895 Cowboy

For top performance on those tough long-range lever action events, the new Model 1895 Cowboy is a must for Cowboy Action Shooters. It's also an ideal big game rifle for hunters who appreciate the nostalgia of 19th Century-style firearms. This authentically Old Western-styled .45-70 features a 26" (660) tapered octagon barrel with deep-cut Ballard-type rifling, 9-shot tubular magazine, adjustable Marble semi-buckhorn rear and Marble carbine front sight. The American black walnut stock has a straight-grip, a hard rubber butt plate and a blued steel fore-end cap. To accommodate tang sight installation, the serial number is located on the left side of the receiver.

Model 1895M (.450 Marlin)

Working together, Marlin and Hornady Manufacturing have developed a potent 45 caliber belted magnum cartridge that is an upgrade on the classic .45-70 Government. It's the most powerful cartridge ever offered in a Marlin lever action rifle. We've harnessed all this power into a compact 7 lb. package. Like the Model 1895G Guide Gun, this Marlin lever action features a ported 18.5" (470mm) Ballard-type cut rifled barrel, a 4-shot tubular magazine, and a straight-grip American black walnut stock with ventilated recoil pad and swivel studs.

Remington Model 700

Remington Arms Co., Inc.
Illion, NY UCAS

Various Chamberings

Operation: Bolt Action

Safety: Two position sliding

Sights: Adjustable notch rear, post front or none

Barrel: Varies (22"-24")

Weight: Varies

Magazine Capacity: 4-5 rounds, internal box

Modes of fire: Safe, fire

ADL Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.223 Rem	Assault Rifle	2	6 clip	SS	9M	3.3	2/24 hrs	470 ¥
.22-250 Rem	Sport Rifle	2	4 clip	SS	10M	3.3	2/24 hrs	470 ¥
.243 Win	Sport Rifle	2	4 clip	SS	8S	3.3	2/24 hrs	470 ¥
.270 Win	LMG	2	4 clip	SS	9S	3.2	2/24 hrs	470 ¥
.308 Win	LMG	2	4 clip	SS	9S	3.3	2/24 hrs	470 ¥
.30-06 Spring	Sniper Rifle	2	4 clip	SS	9S	3.2	2/24 hrs	470 ¥
7mm Rem Mag	MMG	NA	3 clip	SS	11S	3.4	2/24 hrs	495 ¥
.300 Win Mag	MMG	NA	3 clip	SS	12S	3.4	2/24 hrs	495 ¥

BDL Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.17 Rem	Carbine	2	7 clip	SS	6M	2.8	2/24 hrs	675 ¥
.223 Rem	Assault Rifle	2	6 clip	SS	9M	2.8	2/24 hrs	645 ¥
.22-250 Rem	Sport Rifle	2	4 clip	SS	10M	2.8	2/24 hrs	645 ¥
.243 Win	Sport Rifle	2	4 clip	SS	8S	2.8	2/24 hrs	645 ¥
25-06 Rem	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	645 ¥
.270 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	645 ¥
.280 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	645 ¥
7mm-08 Rem	LMG	2	4 clip	SS	9S	2.8	2/24 hrs	645 ¥
.308 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	645 ¥
.30-06 Spring	Sniper Rifle	2	4 clip	SS	9S	3.0	2/24 hrs	645 ¥
7mm Rem Mag	MMG	2	3 clip	SS	11S	3.2	2/24 hrs	675 ¥
7mm Ultra Mag	MMG	NA	3 clip	SS	12S	3.2	2/24 hrs	685 ¥
.300 Win Mag	MMG	2	3 clip	SS	12S	3.2	2/24 hrs	675 ¥
.338 Win Mag	MMG	2	3 clip	SS	13S	3.2	2/24 hrs	675 ¥
.338 Ultra Mag	HMG	NA	3 clip	SS	14S	3.2	2/24 hrs	685 ¥
.375 Ultra Mag	MMG	NA	3 clip	SS	11D	3.2	2/24 hrs	685 ¥

An incredible list of options are available on Model 700 rifles, including detachable magazines, synthetic stocks, heavy barrels, fluted barrels, stainless steel construction, titanium construction, electronic ignition... Options are simply too diverse to list here. Check out Remington's website and you'll get the drift.

Remington introduced the Model 700 in 1962 to replace several models in their rifle line. Since then, the Model 700 has become an American standard, available in very wide variety of configurations for the modern hunter and target shooter. Those listed here only represent the two major groups.

ADL Series

> The Model 700™ ADL delivers the field-proven performance features of strength, durability, and accuracy, while sacrificing nothing in looks. The famous Model 700™ action is combined with a satin-finished American walnut Monte Carlo profile stock that includes cheekpiece, cut checkering, and sling swivel studs. Barrel has front and rear big-game iron sights. Available with synthetic stock.

BDL Series

> Its high-gloss American walnut stock with Monte Carlo comb and raised cheekpiece is decorated with generous skipline cut checkering, and a black fore-end tip and pistol grip cap with white-line spacers. Hinged magazine floorplate, fine-line receiver engraving, adjustable rear sight, hooded ramp front sight, and sling swivel studs are standard.

Remington

Remington Model 700 Sendero

Remington Arms Co., Inc.
Illion, NY UCAS

Various Chamberings

Operation: Bolt Action

Safety: Two position sliding

Sights: None. Scope required.

Barrel: 26" (660mm), fluted

Weight: Varies

Magazine Capacity:
4-5 rounds, internal box

Modes of fire:
Safe, fire

700 Sendero Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
7mm Rem Mag	**Sniper Rifle**	**NA**	**3 clip**	**SS**	**11S**	**3.8**	**2/24 hrs**	**1,000 ¥**
7mm Ultra Mag	**Sniper Rifle**	**NA**	**3 clip**	**SS**	**12S**	**3.8**	**2/24 hrs**	**1,020 ¥**
.300 Win Mag	**Sniper Rifle**	**NA**	**3 clip**	**SS**	**12S**	**3.8**	**2/24 hrs**	**1,000 ¥**
.300 Ultra Mag	**HSR**	**NA**	**3 clip**	**SS**	**13S**	**3.8**	**2/24 hrs**	**1,020 ¥**
.338 Ultra Mag	**HSR**	**NA**	**3 clip**	**SS**	**14S**	**3.8**	**2/24 hrs**	**1,020 ¥**

An incredible list of options are available on Model 700 rifles, including detachable magazines, synthetic stocks, heavy barrels, fluted barrels, stainless steel construction, titanium construction, electronic ignition... Options are simply too diverse to list here. Check out Remington's website and you'll get the drift.

Remington introduced the Model 700 in 1962 to replace several models in their rifle line. Since then, the Model 700 has become an American standard, available in very wide variety of configurations for the modern hunter and target shooter. Those listed here only represent the two major groups.

700 Sendero SF

> The Model 700™ Sendero® SF provides all the elements of Remington's most advanced varmint rifles in long-range big-game calibers. The stainless-steel action and free-floating 26" varmint-profile barrel are bedded in a aramid fiber reinforced fiberglass stock with an action-long bedding block. The fluted barrel provides maximum rigidity while shaving a half-pound in weight. The Model 700 Sendero SF is perfectly designed for measured, long range shooting.

Remington

Remington Model 710

Remington Arms Co., Inc.
Illion, NY UCAS

Various Chamberings

Operation: Bolt Action

Safety: Two position sliding

Sights: Adjustable notch rear, post front or none

Barrel: 22" (558mm)

Weight: 7.12 lbs. (3.2 kg)

Magazine Capacity:
4 rounds, internal box

Modes of fire:
Safe, fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
710	**.270 Win**	**LMG**	**2**	**4 clip**	**SS**	**9S**	**3.2**	**2/24 hrs**	**350 ¥**
710	**.30-06**	**Sniper Rifle**	**2**	**4 clip**	**SS**	**9S**	**3.2**	**2/24 hrs**	**350 ¥**

- No iron sights.
- Includes a variable power scope (Level 1).

Introducing the Remington Model 710. The breakthrough design of the Model 710 begins with good genetics. Make that the best genetics. After all, it was born in design from none other than the legendary Remington Model 700 — unquestionably the most popular, most accurate factory-built centerfire in hunting arms history. As such, the new Model 710 shares many of the same hallmark features as the famous Model 700: The same unequaled out-of-the-box accuracy. The same time-honored reliability. The same crisp, single-stage trigger design. The same ultra-fast lock time. And the same famous "three-rings-of-steel" for superior action strength.

But while much of the Model 710's base design is owed to its heritage, its real story starts with advancements made possible through today's most modern technology. Principal among its many remarkable features is a first-ever bolt-to-barrel lock-up design. The rear of the Model 710 barrel is machined specifically to mate with three unique locking lugs on the bolt face. When the bolt is fully engaged in the forward position, it locks directly and securely inside the barrel — rather than the receiver — for unprecedented strength. Additionally, the fiberglass-reinforced nylon receiver insert is blended with Teflon and silicon before molding for continual self-lubrication and ultimately smooth operation.

A shorter, 60-degree bolt throw (versus 90-degrees on most competitive rifles) makes for more convenient loading and unloading, as well as faster follow-up shots. Rounding out the impressive list of features is a detachable, dual-stack steel magazine box. A key-operated Integrated Security System. And a button-rifled barrel that's hydraulically pressed to the receiver. The stock is also quite a feat of design — constructed of weather-defying gray synthetic with a uniquely textured finish and raised cheekpiece.

A factory mounted and bore-sighted Bushnell 3-9x40 scope is included with the model 710.

Remington

Ruger Mini-14 and Mini Thirty

Sturm, Ruger & Co., Inc.
Southport, CT UCAS

.223 Remington, 7.62x39mm

Operation: Gas

Safety: Garand type, two position sliding

Sights: Adjustable aperture rear or folding rear, blade front

Barrel: 18.5" (470mm)

Weight: 6.75 lbs. (3.1 kg)

Magazine Capacity:
5 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Mini-14/5	**.223 Rem**	**Assault Rifle**	**3**	**5 clip**	**SA**	**9M**	**3.1**	**2/24 hrs**	**600 ¥**
Mini-14/5R	**.223 Rem**	**Assault Rifle**	**3**	**5 clip**	**SA**	**9M**	**3.1**	**2/24 hrs**	**650 ¥**
Mini-30/5R	**7.62x39mm**	**Assault Rifle**	**3**	**5 clip**	**SA**	**9M**	**3.1**	**2/24 hrs**	**650 ¥**

- Mini-14 includes a Garand-style rear sight, adjustable for windage and elevation. There are no provisions for mounting a scope.
- Ranch Rifle (R) includes a folding adjustable rear sight. Scope mounts are machined into the receiver and 1" scope rings are provided.
- Available in stainless steel. (+50¥)
- Available with synthetic stock. (+50¥)
- 10, 20 and 30-round magazines are available for the Mini-14 and Mini-30 rifles.

Convenience without the complexities. The Ruger Mini-14, Ranch Rifle, and Mini Thirty offer inherent accuracy, light weight, low recoil, and a quick repeat shot capability that makes them the favorite of ranchers and outdoorsmen. Constructed of relatively few components, all three of these proven rifles provide the convenience of an autoloader without the complexities often associated with this type of firearm. Their simple, rugged design ensures dependable performance even with rough use.

The Mini-14 and Ranch Rifle are designed to get the most out of the powerful .223 cartridge. They're perfect when a few quick shots are needed, and they've had their mettle tested on farms and ranches across the continent. The Mini Thirty is about the same size at the Ranch Rifle but is chambered for the well-respected 7.62x39mm cartridge. It is an ideal short-range deer rifle, affording big-bore performance in a compact, self-loading sporting rifle. On all three models, the safety blocks both the hammer and the sear, and the slide can be cycled with the safety engaged. A bolt-lock mechanism holds the bolt open for cleaning and inspection.

Ruger Firearms

Steyr Scout

[Scout with black stock and 10-round magazine]

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

Various Chamberings

Operation: Bolt Action

Safety: Tang-mounted three position roller

Sights: Folding ghost ring rear, folding post front, weaver mnt

Barrel: 19" (482mm)

Weight: 6.3 lbs. (2.85 kg)

Magazine Capacity:
5 rounds, detachable box

Modes of fire:
Safe, Loading, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
Scout	**.308 Win**	**LMG**	**3**	**5 clip**	**SS**	**9S**	**2.85**	**6/3 days**	**1,900 ¥**
Scout	**7mm-08 Rem**	**LMG**	**3**	**5 clip**	**SS**	**9S**	**2.85**	**6/3 days**	**1,900 ¥**
Scout	**.243 Win**	**Sport Rifle**	**3**	**5 clip**	**SS**	**8S**	**2.85**	**6/3 days**	**1,900 ¥**
Scout	**.223 Rem**	**Sport Rifle**	**3**	**5 clip**	**SS**	**9M**	**2.85**	**6/3 days**	**1,500 ¥**
Scout	**.376 Steyr**	**Sport Rifle**	**3**	**4 clip**	**SS**	**10D**	**2.85**	**10/30 days**	**7,500 ¥**

- Integral bipod.
- 10-round magazines are available. An extra 5-round magazine can be stored in the stock.
- The .376 Steyr Scout produces excessive recoil. Gamemasters should plan accordingly. By 2060, the rifle chambered in this caliber should be very rare indeed. Cost and availability are designed to reflect this.

Many years ago, Col. Jeff Cooper, the renowned father of the modern American pistol and rifle technique, began a historic collaboration with Steyr Mannlicher, AG & Co KG. Col. Cooper had for many years envisioned a "scout" type rifle: one firearm that could serve every need of one man operating alone.

Together, the Cooper/Steyr team designed this revolutionary new rifle. Built around the famous Steyr Safe Bolt System. The cold hammer forged barrel provides hair-splitting accuracy and excellent velocity. The receiver, extended forward over the barrel, allows for scope forward mounting, resulting in maximum eye relief and instantaneous target acquisition.

Its advanced synthetic stock includes a built-in bipod, extra magazine storage (in the stock), plus an adjustable butt and rounded heel for user comfort. And the whole system weighs approximately seven pounds. The Steyr "Scout." One rifle that does it all - and does it better - than any other rifle available today.

Winchester Model 70 Classic

US Repeating Arms, Inc.
New Haven, CT UCAS

Various Chamberings

Operation: Bolt Action

Safety: Three position switch

Sights: None; drilled and tapped for scope mounts

Barrel: Varies

Weight: Varies

Magazine Capacity:
3-5 rounds, internal box

Modes of fire:
Safe, Loading, Fire

Classic Super Grade Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
25-06 Rem	LMG	2	5 clip	SS	9S	3.5	2/24 hrs	975 ¥
.270 Win	LMG	2	5 clip	SS	9S	3.5	2/24 hrs	975 ¥
.30-06 Spring	Sniper Rifle	2	5 clip	SS	9S	3.5	2/24 hrs	975 ¥
7mm Rem Mag	MMG	NA	3 clip	SS	11S	3.6	2/24 hrs	1005 ¥
.300 Win Mag	MMG	NA	3 clip	SS	12S	3.6	2/24 hrs	1005 ¥
.338 Win Mag	MMG	NA	3 clip	SS	13S	3.6	2/24 hrs	1005 ¥

Classic Featherweight Series

Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
.22-250 Rem	Sport Rifle	2	4 clip	SS	10M	2.8	2/24 hrs	715 ¥
.243 Win	LMG	2	5 clip	SS	8S	2.8	2/24 hrs	715 ¥
6.5x55mm	LMG	2	4 clip	SS	8S	3.0	2/24 hrs	715 ¥
.270 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	715 ¥
7mm-08 Rem	LMG	2	4 clip	SS	9S	2.9	2/24 hrs	715 ¥
.308 Win	LMG	2	4 clip	SS	9S	3.0	2/24 hrs	715 ¥
.30-06 Spring	Sniper Rifle	2	4 clip	SS	9S	3.0	2/24 hrs	715 ¥

- No iron sights.

Bolt action rifle of the century. Few rifles have achieved the stature of the Model 70. When Shooting Times rifle editor Rick Jamison named the Model 70 Featherweight as the “Bolt Action Rifle of the Century” it was no surprise to hunters and shooters all across the world. No other rifle compares to the Model 70’s classic good looks, reputation for dependability and proven accuracy. Each rifle on this page has the strength of a claw extractor, the sureness of controlled round feed, the convenience of a three-position safety and the durability of a receiver-mounted blade ejector. All the right features to make your next hunt a success.

Classic Super Grade

The improved Classic Super Grade is the fourth generation in the Model 70 series. Features a top-of-the-line recoil pad for extra comfort. Steel stock crossbolts. Inletted swivels. Improved trigger guard and floorplate hinge. 26" (660mm) barrel on magnum rifles.

Classic Featherweight

"The bolt action rifle of the century." Its handling quickness and lighter weight have made it famous among hunters everywhere. Jeweled bolt and knurled bolt handle. Classic straight comb stock and Schnabel fore-end. Satin finished with elegant cut checkering. 22" (558mm) barrel.

Winchester Model 70 Stealth

US Repeating Arms, Inc.
New Haven, CT UCAS

Various Chamberings

Operation: Bolt Action

Safety: Three position switch

Sights: None; drilled and tapped for scope mounts

Barrel: 26" (660mm)

Weight: 10.75lbs. (4.8kg)

Magazine Capacity:
5 rounds, internal box

Modes of fire:
Safe, Loading, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
70 Stealth	**.223 Rem**	**Sport Rifle**	**2**	**6 mag**	**SS**	**9M**	**4.9**	**2/24 hrs**	**800 ¥**
70 Stealth	**.22-250 Rem**	**Sport Rifle**	**2**	**5 mag**	**SS**	**10M**	**4.9**	**2/24 hrs**	**800 ¥**
70 Stealth	**.308 Win**	**Sniper Rifle**	**2**	**5 mag**	**SS**	**9S**	**4.9**	**2/24 hrs**	**800 ¥**

- No iron sights.

The right action for any configuration. The Model 70 action is so well-designed that it has proven to be the ideal platform for building a full spectrum of models — everything from the world's most unique and specialized rifles to rifles offering exceptional affordability and value. The Model 70 Stealth features our proven push feed bolt design. When the cornerstone of your rifle is a Model 70 action with three-position safety, field strippable bolt, precision rifling and blade ejector, you have a rifle with the accuracy and reliability you need.

The Model 70 Stealth is our heavier weight varminter with exceptional long range accuracy. The heavy barrel is further stabilized by an extremely stable Kevlar/fiberglass/graphite Pillar Plus Accu Block™ stock with a full-length aluminum bedding block integrated into the stock for maxium stability. Matte finish on all exposed surfaces. Hinged floorplate. 26" barrel. Scope not included.

Winchester Model 94

[94 Ranger]

US Repeating Arms, Inc.
New Haven, CT UCAS

30-30 Winchester

Operation: Lever Action

Safety: Cross bolt hammer block

Sights: Graduated buckhorn rear, hooded post front

Barrel: 20" (508mm)

Weight: 6.25 lbs. (2.8 kg)

Magazine Capacity:
6 rounds, tubular magazine

Modes of fire:
Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
94 Traditional	.30-30 Win	Carbine	2	6 (m)	SS	8S	2.8	2/24 hrs	410 ¥
94 Traditional	.44 Magnum	L Car.	2	10 (m)	SS	10M	2.8	2/24 hrs	410 ¥
94 Traditional	.480 Ruger	L Car.	2	10 (m)	SS	8S	2.8	2/24 hrs	410 ¥
94 Ranger	.30-30 Win	Carbine	3	5 (m)	SS	7S	2.6	2/24 hrs	355 ¥
94 Ranger	.357 Magnum	L Car.	3	9 (m)	SS	9M	2.6	2/24 hrs	355 ¥

Use reloading rules for Internal Magazines on p.280 of SR3. Requires one Simple Action to chamber a round after loading.

The Model 94 Winchester may be the world's perfect rifle. The reasons to shoot a Model 94 one hundred years ago are even more important today. Who can argue with over 100 years of dependable service? The 94 can take tough conditions -- snow or rain, mud or dust -- and keep working. Every caliber has a level of recoil you can handle, helping you stay on target. It is compact and lightweight, able to go where you want to hunt... in the rugged, thick conditions where game like to hide. It hunts the way you hunt today: fitting easily on an ATV rack or strapped onto a backpack or up in a cramped treestand or leading the way through an overgrown thicket. Few would dispute that more deer have fallen to the Winchester Model 94 than any other rifle in history. And the success of the Model 94 continues today.

Easy carrying. Easy to get into action. The 94’s design keeps the receiver short so overall balance is centered between the hands. You can easily position your forward hand anywhere on the fore-end to achieve the feel ideal for you. The lever begins well toward the rear (with no under-receiver protrusion), making one-handed carrying easy and balanced.

Model 94 Traditional

One of the most popular versions ever — with no-nonsense dependability. When you see a lever action afield, chances are it’s the Traditional. Full-length magazine, barrel bands and straight grip stock. Non-checkered American walnut stock. Hammer spur extension included. Chambered in 30-30 Win. Available with checkered stock and fore-end (+50¥).

Model 94 Ranger Compact

The Ranger Compact is perfect for smaller hunters: 16" barrel, recoil pad and 12 1/2" length of pull. It is a rifle that can be handled, shouldered and shot well. Includes a post-style front sight, a durable hardwood stock and include a hammer spur extension.

Armalite AR-10(T) Target Rifle

Armalite, Inc.
Geneseo, IL UCAS

7.62x51mm NATO, .300 RSUM

Operation: Gas, Direct

Safety: Left side selector switch, 0-1

Sights: None; M1913 Picatinny rail surfaces provided

Barrel: 24" (609mm)

Weight: 10.4 lbs. (4.71 kg)

Magazine Capacity: 8-10 rounds, detachable box

Modes of Fire: Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AR-10(T)	**7.62mm NATO**	**Sniper**	**2**	**10 clip**	**SA**	**9S**	**4.7**	**5/14 days**	**2,150 ¥**
AR-10(T)UM	**.300 RSUM**	**MMG**	**2**	**8 clip**	**SA**	**12S**	**4.7**	**5/14 days**	**2,410 ¥**

Scope not included.

The AR-10 was developed by Eugene Stoner at the Armalite Division of the Fairchild Engine and Airplane Company in the early 1950s. Designed to compete for military contracts with other rifles chambered for the new 7.62x51mm T65 cartridge, the AR-10 was, at the time, revolutionary in that it included aluminum alloy forgings and synthetic components in its construction. This reduced weight dramatically. However, the reduction in weight made for an increase in recoil to the point that the weapon was far from controllable in automatic fire (a requirement of the project). Muzzle brakes were developed in order to alleviate some of the recoil. Regardless, US mlitary elements were not enthusiastic about accepting a rifle with such a radical departure from traditional design. As a result, the Garand-based M14 rifle was accepted for service.

During the time, the US Operations Research Office (ORO) conducted reasearch into how casualties occured in battle. It came to the conclusion that a small-caliber, low-recoiling automatic rifle would be much more effective as a fighting weapon than the large, powerful rifles of the time. Thus, in 1957 the United States Army Continental Army Command (CONARC) sought commercial assistance in the development of a 5.56mm military rifle.

Winchester and Armalite were asked to develop these rifles. At Armalite, James Sullivan scaled down the AR-10 for use with a .223 caliber cartridge developed especially for the project. The AR-15 was born. Project SALVO was initiated and at the end of testing, the AR-15 was announced the winner. However, having lacked the sales of the AR-10 necessary to begin production of the AR-15, Armalite sold its AR-10/AR-15 assets to Colt's in 1959. The rifle was then type-classified as the M16 and put into service with a growing force of military advisors in Vietnam. Armalite soon disintegrated.

The Armalite trade name switched hands several times over the years until it was purchased by Eagle Arms, a company that produced parts for AR-15 rifles. By 1989, Eugene Stoner's patents had expired and several companies, including the new Armalite, began manufacturing complete AR-15 rifles. After a slight redesign of the rifle, Armalite's Mark Westrom also decided to begin manufacture of the AR-10 in 1994. The AR-10 is back in business.

The AR-10(T) is the target rifle variant of the AR-10 line. Available in both 7.62x51mm NATO (.308 Winchester) and .300 Remington Short Ultra Magnum (.300 RSUM), the AR-10(T) includes a 24" (609mm) stainless steel heavy target barrel with 1-10" twist, free-floating fiberglass handguard, a two-stage national match trigger, and M1913 Picatinny Rail mounting surfaces on both the upper receiver and gas block for mounting scopes and back-up iron sights. It is factory gauranteed 1 MOA accuracy. The AR-10(T) can use any capacity AR-10 magazine (5, 10, 20, or 30 rounds). However, magazines with capacities of more than 10 rounds often impede manuverability when lying prone.

Armalite

Barrett Model 98

Barrett Firearms Mfg Co.
Murfreesboro, TN CAS

.338 Lapua Magnum

Operation: Gas, Regulated

Safety: Frame-mounted on left side, 0-1 selector switch

Sights: None; M1913 Picatinny Rail

Barrel: 24" (610mm)

Weight: 13.2 lbs. (6 kg)

Magazine Capacity:
10 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M98	**.338 Lapua**	HSR	**NA**	**10 clip**	**SA**	**14S**	**6**	**8/9 days**	**2,250 ¥**
M98S	**.338 Lapua**	HSR	**NA**	**10 clip**	**SA**	**14S**	**6.2**	**12/21 days**	**3,750 ¥**

- +1 Recoil Modifier, muzzle brake provides 1 point of recoil compensation.
- Does not include scope.

The Barett Model 98 is designed around the receiver of a traditional bolt action rifle with its heavy receiver. However, unlike Barrett's .50 caliber semi-automatics, the .338 rifle has a fixed, free-floating barrel mounted on an aluminum base, and utilizes a tapped gas engine.

A harmonic balancer is built into the butt stock of the gun to eliminate any disturbances to the barrel. Gas is delivered to the rear mechanisms via a gas tube from the barrel into a tapped system behind the firing mechanisms. The bolt is a rotating multi-lug design, which some experts consider was inspired by the Johnson rifle/LMG.

The entire stock is made of a glass fibre-reinforced black polymer.

The detachable box magazines are also plastic and can accommodate 10 rounds. A very efficient muzzle brake comes standard on the weapon. The steel bipod attaches to the front end of a handguard and is of the usual folding construction. The butt stock is of the thumb-hole design. On top the upper receiver, the gun has a Picatinny Rail to accommodate either a scope or a night vision device, or a combination thereof.

The "S" package includes ADVAT.328-compliant Smartlink II technology.

Fusil Automatique Légere Bull

[SA58 Bull 24"]

DS Arms, Inc.
Barrington, IL UCAS

7.62x51mm NATO (.308 Win)

Operation: Gas, Regulated

Safety: Frame-mounted on left side, 0-1 trigger group

Sights: Adjustable peep rear, protected post front

Barrel: 24" (610mm)

Weight: 11.5 lbs. (5.2 kg)

Magazine Capacity:
10 or 20-round detachable box

Modes of Fire: Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SA58B21	**7.62mm NATO**	**Sniper**	**2**	**10 clip**	**SA**	**9S**	**5**	**4/48 hrs**	**1,795 ¥**
SA58B24	**7.62mm NATO**	**Sniper**	**NA**	**10 clip**	**SA**	**9S**	**5.2**	**4/48 hrs**	**1,795 ¥**

- Spotter's Kit includes a Vesa-Pod bipod, handgrip buttstock, M1913 rail scope mount and removable brass catcher, +170¥.
- 20-round (12¥) and 30-round (45¥) magazines are available.

The Fusil Automatique Légere (Rifle, Automatic, Light) was orginally designed and manufactured by the Belgian firm of Fabrique Nationale. It was introduced in 1953, originally chambered for the 7.92x33mm Kurz cartridge developed by Germany during WWII. Upon NATO acceptance of the American 7.62x51mm T65 cartridge, the FAL was redesigned to fire it. Since that time, the FAL has been accepted as the standard infantry rifle of over 90 nations and is still produced and in use by many of them today. It has been manufactured in Argentina, Austria, Australia, Belgium, Brazil, Canada, Chile, Great Britain, India, Israel and South Africa. Only the Kalashnikov rifle has been produced in greater numbers.

After the acceptance of the StG77 by the Austrian military, the StG58 (Steyr-produced FAL) was slowly phased out of use. In the mid 1990s, a North American company called DS Arms purchased the StG58 tooling and blueprints from Steyr and shipped the equipment to their facility in Illinois. Since then, DS Arms has become one of the most well known FAL manufacturers, offering several upgrades that bring the FAL into the 21st century. DS Arms offers several variants of the FAL design in various levels of manufacturing quality, from relatively inexpensive "parts kit" guns assembled from European military contract parts, to newly manufactured rifles with modern stainless steel receivers and heavy barrels, CNC machined to Steyr's original specs.

The SA58 Bull rifle includes either a 21-inch (535mm) or 24-inch (610mm) match grade, heavy bull barrel, fixed buttstock, alloy free-floating handguard, and a match grade, hooded aperture rear sight adjustable for windage and elevation (100m-1000m). Both rifles make excellent sniper support weapons.

DS Arms

Heckler & Koch G3 SG/1

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: Frame-mounted on left side, 0-1-20 selector switch

Sights: Rotary diopter rear, hooded post front, scope mnt

Barrel: 17.72" (450mm)

Weight: 13.7 lbs. (5.54 kg)

Magazine Capacity:
20 rounds, detachable box

Modes of fire: Safe, semi-automatic, fully automatic

Cyclic Rate: 600 rpm

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
G3 SG/1	7.62 NATO	Sniper Rifle	NA	20 clip	SA/FA	9S	5.54	9/7 days	1,805 ¥

- SL2 Sniper Series Smartlink hardware available +1,200¥.
- x2 Recoil Modifier in FA mode.

The G3 SG/1 is an accurized variant of the legendary G3 rifle, designed for the German Bundeswehr as a sniper/sniper support weapon.

The G3 SG/1 begins life as a standard G3A3 rifle which has been specially selected for accuracy. A specialized trigger group with setting function is then added. At the press of a button, the user can set the trigger to a one-pound pull in semi-automatic mode, requiring less force to pull and further enhancing accuracy at longer ranges.

The G3 SG/1 includes a folding bipod, detachable scope mount and a raised cheek rest in the stock. Also, the grip is contoured to fit more comfortably in the hand. The G3 SG/1 retains all standard features of the G3A3, including rotary diopter iron sights and a combination flash suppressor/grenade launching spigot.

Heckler & Koch HK94 SG/1

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

9mm Parabellum

Operation: Delayed Blowback

Safety: Frame-mounted on left side, 0-1 selector switch

Sights: Rotary diopter rear, hooded post front, scope mnt

Barrel: 16" (406mm)

Weight: 9.25lbs. (4.2kg)

Magazine Capacity:
15 rounds, detachable box
30 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HK94 SG/1	**9mm Para**	**Light Carbine**	**3**	**15 clip**	**SA**	**9M**	**4.2**	**12/15 days**	**1,525 ¥**

- SL2 Sniper Series Smartlink hardware available +1,200¥.
- Does not include scope.

The HK94 SG/1 is actually a light carbine reworked to fill a sniper role, designed for occasions when a high-velocity round might overpenetrate its target and compromise the safety of hostages or other non-hostiles in close proximity to the target.

Though rather unconventional for a sniper role, this weapon is submachine gun-sized (in fact, it is a semi-automatic carbine version of the MP5), making it very portable. It uses the same delayed blowback roller-locked system of operation as all other Heckler & Koch rifles, making it known enough to be servicable by anyone who has operated any HK weapon before.

The HK94 SG/1 weapon system is rounded out by an adjustable cheek rest on the stock, a Harris Bipod and a detachable scope mount.

Heckler & Koch MSG-90

[MSG90A1 Designated Marksman's Rifle]

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: Ambidextrous, 0-1-20 selector switch

Sights: None; scope mount

Barrel: 23.6" (600mm)

Weight: 14.1 lbs. (6.4 kg)

Magazine Capacity:
5 rounds, detachable box
20 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
MSG90	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SA**	**9S**	**6.4**	**9/7 days**	**5,620 ¥**
MSG90A1	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SA**	**9S**	**6.4**	**9/7 days**	**5,750 ¥**

- SL2 Sniper Series Smartlink hardware available +1,200¥.
- Scope not included.

The MSG90 offers many of the same features found on the PSG1, but weighs only 14 pounds. Accuracy is sub-MOA with match ammunition. Major features include:

- An extended ambidextrous safety/selector lever
- PSG1 trigger mechanism with crisp three pound trigger pull and adjustable trigger shoe
- Buttstock with adjustable length butt plate and vertically adjustable cheekpiece
- 10x Hensoldt telescopic sight
- Heavyweight polygonal barrel with harmonic stabilizer to induce consistent barrel “whip” for increased accuracy
- uses 5-round or 20-round magazines (standard G3)
- Forward assist for silent loading
- T-rail for accessory attachment

The MSG90A1 was developed for the U.S. Department of Defense. The MSG90A1 includes a threaded barrel and flash hider, (which will also accept a sound suppressor) and backup iron sights. The scope must be removed to use the iron sights. The A1 also has an improved MSG90 buttstock with rubber buttpad, indexing lines on the buttpad and cheekpieces.

Heckler & Koch PSG/1

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

7.62x51mm NATO

Operation: Delayed Blowback

Safety: Frame-mounted on left side, 0-1-20 selector switch

Sights: None; scope mount

Barrel: 25.6" (650mm)

Weight: 17.9 lbs. (8.1 kg)

Magazine Capacity:
5 rounds, detachable box
20 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
PSG/1	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SA**	**9S**	**8.1**	**9/7 days**	**9,850 ¥**

- No iron sights.
- Includes 6x42mm illuminated mil-dot reticle scope (level 1). Scope mount cannot be removed.
- Tripod functions as a rest and does not provide any recoil compensation benefits.

Precision accuracy at extremely long ranges demands a truly specialized rifle. HK responded to the task by designing the ultimate long range firearm. The Prazisions Schutzen Gewehr 1.

A heavyweight barrel, trigger mechanism with a constant three pound trigger pull, adjustable buttstock, and adjustable handgrip are some of the features that make the PSG1 more accurate than any other semi-automatic rifle.

Each PSG/1 rifle is shipped with an assortment of accessories that do more than just round out the rifles' usefulness, they complement the rifle itself, turning it into a complete system for the marksman. This includes a specially-fitted aluminum alloy hard case for transportation and protection, extra magazines, adjustable sling, cleaning and maintenance equipment, as well as a user tool kit.

Also included with each rifle is a Swiss-made tripod, that functions as a unique shooting support for the rifle, especially when used from a benchrest. These accessories, provided with every PSG/1, make the PSG/1 truly alone in its class.

The steel shell of the receiver itself is nitro-carburized (in a process similar to what is done to the USP pistol slides) to increase surface hardness and to provide yet another level of accuracy enhancing reinforcement. The nitro-carburizing process also helps to prevent the sort of finish damage to the gun that rough handling can sometimes produce. The end result of all of this strengthening and reinforcing is a receiver that mates bank-vault tight to the heavy barrel, to provide the highest level of accuracy. The barrel and receiver assembly are virtually locked together tight enough so that, just like the operating parts in a glass bedded bolt action rifle, there is minimal movement or play. This allows the roller-locked action of the PSG/1 to return and lock up consistently shot after shot after shot.

KAC Stoner SR-25 (Mk11 MOD 0)

Knight's Armament Company
Vero Beach, FL CAS

7.62x51mm NATO (.308 Win)

Operation: Gas, Direct

Safety: Frame-mounted on left side, 0-1 selector switch

Sights: Folding aperture rear, folding post front, M1913 rail

Barrel: Varies

Weight: Varies

Magazine Capacity:
20 rounds, detachable box

Modes of Fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SR-25MR	**7.62mm NATO**	**Sniper Rifle**	**NA**	**20 clip**	**SA**	**9S**	**4.9**	**4/48 hrs**	**2495 ¥**
Mk11-0	**7.62mm NATO**	**Sniper Rifle**	**NA**	**20 clip**	**SA**	**9S**	**3.5**	**10/30 days**	**4550 ¥**
SR25KSD	**.338 Whisper**	**Assault Rifle**	**2**	**20 clip**	**SA/FA**	**10M**	**3.8**	**6/7 days**	**2895 ¥**

- Apply a +2 suppression modifier to the Mk11 MOD 0 when suppressor is attached.
- Apply a +4 suppression modifier to the SR25K-SD at all times.
- See rules for Suppression.

The SR-25 was a collaborative development of AR-15/M16 inventor Eugene Stoner and C. Reed Knight of Knight's Armament Company (KAC). The SR-25 is essentially an improved M16 chambered for the 7.62mm NATO cartridge and accurized for use as a match rifle or sniper support weapon.

The **SR-25 Match Rifle** is the basic model, including a 24" (609mm) cold hammer-forged free-floating target barrel. A carbon fiber handguard is included, attaching directly to the receiver without applying any force to the barrel. Though no targeting devices are provided, the SR-15's flat top receiver and gas block include Picatinny rail mounts precision machined directly into them. Knight's can provide detachable iron sights or scope rings as an option.

Mk11 MOD 0 is a military designation originally applied by the United States Navy for a sniper support weapon system based on the SR-25 and originally deployed by the SEALs. It is still in use today by several countries, including the UCAS and CAS. The Mk11 MOD 0 includes a 20" (508mm) cold hammer-forged, free-floating target barrel, Knight's Rail Adapter System (RAS) consisting of four Picatinny rails for mounting various devices, flip-up front and rear detachable iron sights, Harris swiveling bipod, a Leupold 3.5-10x40mm variable power scope with mil-dot reticle, heavy duty scope mounts and a Knight's SR-25 Quick Detach sound suppressor offering -28dB of noise reduction. This rifle is also gauranteed to shoot 1 MOA.

The **SR25K-SD** is an integrally suppressed fully-automatic version of the SR-25, designed to fire the the subsonic .338 Whisper cartridge for maximum performance during stealthy operations. The SR25K-SD includes a 16.5" (419mm) cold hammer-forged free-floating barrel surrounded by a full-length suppressor with a coaxial vortex baffle stack for a very impressive -34dB of noise reduction. Adding 10cc of water to the system offers an additional -10dB of reduction. Other features include a full-length Picatinny rail along the top of the rifle, flip-up front and rear detachable iron sights and a retractable stock for improved compactness.

Springfield Armory M21 Tactical Rifle

Springfield Armory
Geneseo, IL UCAS

7.62x51mm NATO (.308 Win)

Operation: Gas, Regulated

Safety: Garand type, two position sliding

Sights: Adjustable aperture rear, protected post front, SM

Barrel: 22" (558mm)

Weight: 11.6 lbs. (5.3 kg)

Magazine Capacity:
10 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M21	**7.62mm NATO**	**Sniper Rifle**	**NA**	**10 clip**	**SA**	**9S**	**3.5**	**4/48 hrs**	**2975 ¥**

- Includes M1A scope mount and Harris bipod.

The M21 Tactical rifle is the ultimate in auto-loading accuracy. In active duty with elite spec-ops groups world-wide, the M21 is the ultimate tool for the law enforcement sharpshooter. The M21 is equipped with an adjustable cheekpiece stock, thus maintaining perfect head alignment with the scope. The M21 incorporates all of the finest features embodied in our M1A Super Match rifle. Accurate, reliable and powerful, the M21 rifle remains the world class standard for sustained precision fire.

Scope not included. 20-round magazines available.

Steyr-Mannlicher SSG Tactical Rifles

[SSG PIV with suppressor] [other SSG models]

Steyr Mannlicher AG & Co. KG
Steyr, Austria

7.62x51mm NATO (.308 Win)

Operation: Bolt Action

Safety: Two-position sliding

Sights: None; scope mount

Barrel: Varies

Weight: Varies

Magazine Capacity:
5 rounds, detachable rotary

Modes of fire:
Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
SSG PI	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SS**	**9S**	**4.1**	**7/7 days**	**1,400 ¥**
SSG PII	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SS**	**9S**	**4.25**	**7/7 days**	**1,400 ¥**
SSG PIIK	**7.62 NATO**	**LMG**	**2**	**5 clip**	**SS**	**9S**	**3.7**	**7/7 days**	**1,320 ¥**
PII McM	**7.62 NATO**	**Sniper Rifle**	**NA**	**5 clip**	**SS**	**9S**	**4.8**	**6/6 days**	**1,600 ¥**
PIIK McM	**7.62 NATO**	**LMG**	**2**	**5 clip**	**SS**	**9S**	**4.5**	**6/6 days**	**1,550 ¥**
SSG-PIV	**7.62 NATO**	**Sport Rifle**	**3**	**5 clip**	**SS**	**9S**	**3.8**	**7/14 days**	**1,550 ¥**

- SL2 Sniper Series Smartlink hardware available +1,200¥.
- Scope not included.

Since its first development in 1969, the Steyr SSG family has emerged as the premier counter sniper rifle in the world. Used by more than fifty countries worldwide, the SSG family has proven to be the benchmark in performance and reliability.

SSG PI: This was the first of the SSG counter sniper rifles developed by Steyr Mannlicher. It also has the unique distinction of being the world's first synthetic-stocked centerfire production rifle. Originally called the "SSG 69", this rifle has served as one of the world's premier counter sniper rifles for over 25 years. The rear sight attached to its 650mm (25.6") barrel is adjustable for windage and the front sight is adjustable for elevation.

SSG PII: This rifle has many of the same characteristics as the PI but is tailored specifically for the police marksman and target shooter alike. The SSG PII features a heavier 650mm (25.6") barrel without sights and a larger, knob-style bolt handle.

The **SSG PIIK** (SSG Police Kurz), differs only from the SSG PII in barrel length. This 20" barrel version of the PII meets the requirements of the urban police marksman who requires a short overall length in a very accurate rifle.

SSG PII McMillan: The SSG PII McMillan combines the optimum interface- the renowned Steyr SSG PII fitted to the world class McMillan stock, a black hand laminated fiberglass stock custom designed and produced by McMillan for Steyr. Features include an adjustable cheekpiece and the capability to accept Steyr SBS type stock spacers to adjust the length of pull. A forearm rail is provided for the attachment of bi-pods, handstop assemblies or special sling swivel attachments.

SSG PIIK McMillan: This rifle combines the optimum interface- the renowned Steyr SSG PIIK fitted to the world class McMillan stock, a black hand laminated fiberglass stock custom designed and produced by McMillan for Steyr. Features include an adjustable cheekpiece and the capability to accept Steyr SBS type stock spacers to adjust the length of pull. A forearm rail is provided for the attachment of bi-pods, handstop assemblies or special sling swivel attachments.

SSG PIV: This rifle was designed for the urban police marksman who requires accuracy in a short rifle. The SSG PIV incorporates a 16" barrel with a removable flash hider. With the flash hider removed, the barrel is threaded for the use of suppression devices or muzzle brakes.

All SSG rifles include an integrated receiver rail for Steyr SSG QD scope mounts, with rings available in 1", 26mm and 30mm models.

Coupled with a 7.62mm tungsten-carbide discarding sabot round, the SSG can immobilize military-grade armored personnel at extreme ranges. The SSG PIV rifles use a modified 5-round Schoenauer rotary spool magazine, a feature that leads to less loading malfunctions.

UCAS M54 Scout/Sniper Weapon System

UCAS Marine Corps
Quantico, VA UCAS

7.62x51mm NATO, .300 WSM

Operation: Bolt Action

Safety: Two-position sliding

Sights: None; M1913 rail

Barrel: 16.5" (419mm)

Weight: 7.5 lbs. (3.4 kg)

Magazine Capacity:
10 rounds, detachable box

Modes of fire:
Safe, Fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M54	**7.62 NATO**	**Sport Rifle**	**2**	**5 clip**	**SS**	**9S**	**3.4**	**7/7 days**	**2,640 ¥**
M54A1	**7.62 NATO**	**Sport Rifle**	**2**	**5 clip**	**SS**	**9S**	**3.6**	**7/14 days**	**3,150 ¥**
M54A2	**.300 WSM**	**Sniper Rifle**	**2**	**4 clip**	**SS**	**12S**	**3.4**	**7/7 days**	**2,640 ¥**
M54A3	**.300 WSM**	**Sniper Rifle**	**2**	**4 clip**	**SS**	**12S**	**3.6**	**7/14 days**	**3,150 ¥**

- M54 is the basic rifle, with bipod and rangefinding scope (Level 2 which can work with Smartlink 2 systems).
- M54A1 includes Smartlink 2 hardware.
- M54A2 is chambered for .300 WSM cartridge.
- M54A3 is chambered for .300 WSM cartridge and includes Smartlink 2 hardware.
- If bipod is removed, increase Conceal to 3.

The M54 Scout/Sniper Weapon System is based on the Remington Model 750 short action. It is a heavy barrel, bolt-action, magazine fed rifle that is optimized for accuracy with 7.62x51mm NATO (.308 Winchester) match grade ammunition. With scope, the rifle weighs approximately 7.5 pounds. It is equipped with a 10-round, M14-type detachable box magazine. 20 round magazines are also available.

This weapon is hand-made by specially trained and qualified armorers at Quantico, Virginia. The unique characteristics of the M54 S/SWS are: commercial competition-grade heavy barrel, synthetic stock and butt pad, Harris bipod, and a modified 2 1/2 lb. trigger pull. In addition, internal parts and bolt assembly are all plated a nickel/PTFE self-lubricating, corrosion-resistant finish. The M54A1 includes ADVAT.328-compliant Smartlink hardware.

M54A2 and A3 variants are chambered for the .300 Winchester Short Magnum cartridge. 4, 8 and 16 round magazines are available. The M54A3 also includes ADVAT.328-compliant Smartlink hardware.

All weapons are designed to shoot less than one half minute of angle (MOA).

Accuracy International AW50

Accuracy International, Ltd.
Portsmouth, England, U.K.

.50 Browning Machine Gun

Operation: Bolt Action

Safety: Garand type, two position sliding

Sights: None; M1913 Picatinny rail used for scope mounting

Barrel: 27" (686mm)

Weight: 33 lbs. (15 kg)

Magazine Capacity: 5 rounds, detachable box

Modes of fire: Safe, fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
AW50	**.50 BMG**	**HSR**	**NA**	**5 clip**	**SS**	**14D**	**15**	**6/7 days**	**14,125 ¥**

- +2 Recoil modifier. Muzzle brake provides -2 recoil compensation.
- Includes folding stock (no conceal bonus), bipod, rear monopod and Picatinny rail scope mount.
- Scope not included.

The AW50 rifle is based on the same design and ergonomic principles as the other rifles in the AW family and is built to function reliably with all of the various types of .50 BMG ammunition. Its features render the cartridge more manageable while still maintaining maximum precision and strength. These include a built-in anti-recoil system, an adjustable third supporting leg to help with precise aiming, a folding stock for slightly compacted carry and an overall weight (excluding ammunition) of 15 kg (33 lbs). An optional suppressor, which effectively reduces the rifle's report, muzzle flash, smoke and ground dust disturbance, only increases the overall length by 381mm (15").

Typical sighting systems include a fixed 10x, a variable 3-12x or a variable 4-16x, each with .1 mil rad. or 1/2 MOA clicks, laser protection and a mil dot range finding reticle. These are secured by a one piece mount to a Picatinny-type rail. Iron sights can also be fitted for emergency use.

The AW50 is supplied in a metal case that accomodates spare magazines, carrying handle, sling, cleaning and tool kits.

A padded soft case is available which will hold the rifle (folded) and all essentials. It can be carried by a sling harness on the shooter's back or attached to steel loops for parachute drops.

AET IIR20 Individual Interdiction Rifle

[Tony Neophytou and his rifle.]

Armaments Éireann-Tír Armagh, Ulster, Tír na nÓg

20x83mm MG151

Operation: Bolt Action

Safety: two position

Sights: None; M1913 Picatinny rail used for scope mounting

Barrel: 39.37" (1000mm)

Weight: 57.3 lbs. (26 kg)

Magazine Capacity:
3 rounds, detachable box

Modes of fire:
Safe, fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
IIR20	20x83mm	HSR	NA	3 clip	SS	20D	26	GM Discretion	9,600 ¥
IIR145	14.5x114mm	AMR	NA	3 clip	SS	20D	29	GM Discretion	9,850 ¥

- +5 Recoil modifier. The muzzle brake and hydraulic damper offer -4 recoil compensation.
- See 20x83mm MG151.

The AET Individual Interdiction Rifle, 20mm is made under license from Mechem Engineering Company of Silverton, South Africa. Manufacture is carried out by General Industrial Corporation (GIC), Armagh, Ulster, Tir Nan Og.

Firing a cartridge originally designed during WWII for anti-aircraft use, the IIR20 is a versatile anti-materiel rifle mostly due to the wide range of ammunition types available for it. The 20x83mm German-designed MG151 can be aquired in three major payloads:

> **MK3 Series, Armor Piercing Discarding Sabot (APDS)**. Contains a 580-grain tungsten carbide penetrator inside of a plastic discarding sabot. This payload is readily capable of engaging area targets at over 2200 meters, and point targets at just over 1800 meters. Incendiary, Tracer, and Depleted Uranium penetrator versions are available.
>
> **MK5 Series, High-Explosive Dual Purpose (HEDP)**. 1680-grain warhead contains a point-and-graze fuze, PBXN-9 explosive and a fluted copper shaped-charge liner. Arming delay is adjustable. Incendiary and Tracer versions are available.
>
> **MK9 Series, High-Explosive Armor Piercing Incendiary (HEAP-I)**. The 1622-grain warhead contains zircomium incendiary mixture followed by a pyrotechnically initiated composition A6 explosive core which surrounds a 680-grain tungsten carbide penetrator. Tracer versions are available.

The IIR20 can also be broken down into two major units for transport by small, mobile 2-man interdiction teams. This weapon can be loaded by a 3-round side-mounted detachable box magazine, or each single round can be loaded into the chamber by hand.

The IIR20 includes a high-efficiency muzzle brake which reduces felt recoil by as much as 40%. A folding bipod is attached to the receiver, as is a monopod to the bottom of the shoulder stock. A picatinny rail mount compatible with most optics mounts also comes standard with the IIR20.

The IIR system is also available chambered in the powerful 14.5x114mm Soviet cartridge.

More information on this rifle can be found at Valery Shilin's Gun Club.

Barrett M82A1

Barrett Firearms Mfg., Inc.
Murfreesboro, TN CAS

.50 Browning Machine Gun

Operation: Short Recoil

Safety: Left side, two position

Sights: M1913 Picatinny rail, backup flip iron sights

Barrel: 29" (736mm)

Weight: 28.5 lbs. (12.9 kg)

Magazine Capacity: 10 rounds, detachable box

Modes of fire: Safe, Semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M82A1	**.50 BMG**	HSR	**NA**	**10 clip**	**SA**	**14D**	**12.9**	**8/21 days**	**7,300 ¥**
M82A1M	**.50 BMG**	HSR	**NA**	**10 clip**	**SA**	**14D**	**13**	**12/30 days**	**7,420 ¥**

- +3 Recoil modifier. The muzzle brake offers -2 recoil compensation.
- Includes bipod, Picatinny rail scope mount and folding iron sights.
- Scope not included.

The Barrett Model 82A1 rifle gained worldwide popularity after pioneering the return of shoulder fired big-bore rifles for shooting enthusiasts. As a result of its unique operating cycle, the M82A1 easily fires the largest commercially available cartridge in the world, the .50 caliber. The semi-automatic operation offers the user the capability of rapidly placing multiple aimed shots on a given target. The unique operating cycle fires the .50 caliber machine gun cartridge yet develops the lowest recoil force of any .50 caliber rifle.

The M82A1 operates on the short-recoil principle developed by the famed American gun designer, John M. Browning. Founder Ronnie Barrett adapted this operating principle to a shoulder fired rifle. The recoiling barrel and bolt assembly acting against innovative spring and buffer assemblies replace the sharp recoil impact with a longer-acting lower recoil force. To further reduce the recoil load, the M82A1 is fitted with a dual chamber muzzle brake. The muzzle brake redirects high velocity gun gas to lower recoil by almost 70%. The net effect is a rifle with the felt recoil of a 12-gauge shotgun.

With these time-proven methods and innovative designs, the Barrett M82A1 offers safety, rugged durability, and reliability to the big-bore enthusiast.

Barrett .50 caliber rifles are now in service world-wide for EOD (Explosive Ordnance Disposal) use. Users have found that mounting the Barretts on vehicles is a rapid and cost-effective method of clearing military airport runways from unexploded ordnance. Others have found the Barrett as an effective means of detonating land mines once they have been detected.

A number of design modifications have been made to enable the Model 82A1M-series rifles to adapt to the latest military and law enforcement requirements. These changes include:

- Long M1913 (Picatinny) optical rail to accommodate all sighting and aiming devices.
- Quick detachable bipod with spike feet.
- Monopod to reduce fatigue in operations of long duration.
- Rear Grips to aid in times of inclement weather.
- No-tools removable carry handle.
- Lightweight bolt carrier—reduces weight by .5kg (1 lb)
- Adjustable scope rings—allows fullest range of scope elevation adjustment.
- Removable muzzle brake to ease barrel replacement in the field.
- New rear sight calibrated for Raufoss (Mk211 MOD 0) multipurpose ammunition.

Barrett M95 (M107)

Barrett Firearms Mfg., Inc.
Murfreesboro, TN CAS

.50 Browning Machine Gun

Operation: Bolt Action

Safety: Left side, two position

Sights: None; M1913 Picatinny rail for scope mounting

Barrel: 29" (736mm)

Weight: 22 lbs. (10 kg)

Magazine Capacity:
5 rounds, detachable box

Modes of fire:
Safe, fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M95	**.50 BMG**	HSR	**NA**	**5 clip**	**SS**	**14D**	**10**	**6/7 days**	**5,250 ¥**

- +3 Recoil modifier. The muzzle brake offers -2 recoil compensation.
- Includes bipod and Picatinny rail scope mount.
- No iron sights. Scope not included.

The Model 95 is a perfect rifle for the shooting enthusiasts who enjoys firing a smaller, lightweight .50 caliber rifle with emphasis on accuracy and durability. The robust bullpup design results in a compact rifle with no sacrifice on accuracy or velocity thanks to its cryogenically treated 29-inch (73.7 cm) barrel, the same length as the Model 82A1. Recoil is reduced by the dual-chamber muzzle brake and specially designed recoil pad.

The rugged 3-lug bolt of the Model 95 locks rigidly into the barrel extension to accommodate the widest variety of factory ammunition loads. The adjustable bipod may easily be detached by removing a single quick-release pin. The Model 95 is set up to mount a variety of telescopic sights and with good ammunition this combination usually produces minute of Angle (MOA) accuracy. The Model 95 may be disassembled for cleaning without tools.

Barrett .50 caliber rifles are now in service world-wide for EOD (Explosive Ordnance Disposal) use. Users have found that mounting the Barretts on vehicles is a rapid and cost-effective method of clearing military airport runways from unexploded ordnance. Others have found the Barrett as an effective means of detonating land mines once they have been detected.

10 round magazines are available.

Barrett M99 BIG SHOT

Barrett Firearms Mfg., Inc.
Murfreesboro, TN CAS

.50 Browning Machine Gun

Operation: Bolt Action

Safety: Left side two position

Sights: None; M1913 Picatinny rail for scope mounting

Barrel: 33" (838mm)

Weight: 25 lbs. (11.36 kg)

Magazine Capacity: None; single shot

Modes of fire: Safe, fire

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M99	**.50 BMG**	HSR	**NA**	**1**	**SS**	**14D**	**11.4**	**6/7 days**	**3,120 ¥**

- +3 Recoil modifier. The muzzle brake offers -2 recoil compensation.
- Includes bipod and Picatinny rail scope mount.
- No iron sights. Scope not included.

What makes the BIG SHOT unique is its rugged aluminum alloy receiver with cantilevered barrel and multi-lug bolt design. The interior of the 33-inch (838mm) barrel is machined to the same exacting specifications of all Barrett products and inspected for dimensional compliance with state-or-the-art air gaging. The exterior of the barrel is unfluted to maximize the rigidity and therefore, the accuracy of the system.

Accurate scope mounting on the BIG SHOT is facilitated by the M1913 Picatinny (modified Weaver) rail that is formed as an integral part of the receiver. This rail has become the new industry standard and allows easy removal and reattachment of scopes and minimal effect on zero.

The simple, straightforward design of the BIG SHOT makes disassembly easy and maintenance a snap. Three quick release pins secure the trigger and bolt guide to the receiver. Remove these pins and the entire rifle can be easily disassembled for cleaning and lubrication. A fourth quick release pin removes the adjustable bipod to accommodate bench rest shooting.

Steyr IWS 2500 Anti-Matériel Rifle

[IWS 2500]

Steyr-Mannlicher AG & Co. KG
Steyr, Austria

15.2x170mm Steyr AMR

Operation: Long Recoil

Safety: two position

Sights: None; M1913 Picatinny rail used for scope mounting

Barrel:
47.24" (1200mm) smoothbore

Weight: 43.8lbs. (19.9kg)

Magazine Capacity:
8 rounds, detachable box

Modes of fire:
Safe, semi-automatic

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
IWS2500	**15.2x170mm**	**AMR**	**NA**	**8 clip**	**SS**	**20D**	**20**	**GM Discretion**	**14,775 ¥**

- Treat custom ammo as SLAP.
- +5 Recoil modifier. The muzzle brake and hydraulic damper offer -4 recoil compensation.
- Even though the IWS 2500 is a semi-automatic rifle and needs no intervention to re-chamber a round, the hydro-pneumatic system takes a second to revert back to battery position after being fired. Consider it a Complex Action to fire the weapon in semi-automatic mode.

Unfortunately, the word "sniping" suggests anti-personnel shooting, which gives many people the wrong idea about the Steyr Individual Weapon System 2500, product of Steyr's Project AMR 5095. The IWS 2500 is primarily intended for the destruction of high-tech, vulnerable equipment emplacements and the like (hence anti-materiel).

The AMR fires a monstrous 15.2mm armor-piercing fin-stabilized discarding sabot projectile at very close to 5,000 feet per second. The 5.5mm fin-stabilized tungsten carbide flechette can punch through 4 centimeters of rolled steel armor at ranges of up to 900 meters. This will make short work of armored radar emplacements, lightly armored vehicles, and just about anything else that stands between it and its target.

The IWS 2500 has an extreme range of over 2,000 meters, making the presence of the weapon completely unnoticeable until -or in some cases- long *after* impact.

To balance the punishing recoil, the IWS uses the long recoil system of operation, making the entire reciever an effective recoil adjuster. The barrel itself sits inside a sleeve-type hydro-pneumatic system which is normally found on artillery weapons rather than anything generally associated with a sniper rifle. A large muzzle brake is fitted to the barrel. All of these systems cut the felt recoil to that of a modern assault rifle.

Smartlink II electronics, a folding Bipod and a rear monopod are fitted as standard. An M1913 Picatinny rail is standard equipment for scope mounting.

All of this complexity makes man-portability of this weapon hindered at best, but portability isn't normally an issue when your target is sitting miles away.

Colt M79 Grenade Launcher

Colt Manufacturing Corp.
Hartford, CT UCAS

40x46mm Grenade, LV

Operation: Manual; Breech

Safety: two position sliding, tang mounted

Sights: Folding adjustable leaf rear, protected post front

Barrel: 14" (356mm)

Weight: 6.0 lbs. (2.72 kg)

Ammunition Capacity:
1 round, breech loaded

Modes of fire: Safe, fire

Muzzle Velocity: 250 fps

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M79	**40x46mm LV**	GL	**3**	**1 breech**	**SS**	**per grenade**	**3**	**6/5 days**	**700 ¥**

The M79 Grenade Launcher is a simple, breech loaded, single shot weapon. The M79 was designed as a close support weapon for the infantry, and was intended to bridge the gap between the maximum throwing distance of a hand grenade, and the lowest range of supporting mortar fire. An area of between 50 and 300 meters.

Used most extensively during the Vietnam War, the M79 gave infantrymen more range and versatility than hand grenades, which were mostly ineffective in jungle environments.

The M203 came along later to replace the M79, using the same basic principles. It added even more vesatility by being mounted under the barrel of an M16 assault rifle or CAR-15 carbine.

Low tech. Tres useful.

More information on the M79 can be found here.

Heckler & Koch HK69A1 Grenade Launcher

Heckler & Koch GmbH
Oberndorf/Neckar, Germany

40x46mm Grenade, LV

Operation: Manual; Breech

Safety: Ambidextrous two position, frame mounted

Sights: 2; flip aperture rear, ladder rear, post front

Barrel: 14" (356mm)

Weight: 5.8 lbs. (2.63 kg)

Ammunition Capacity: 1 round, breech loaded

Modes of fire: Safe, fire

Muzzle Velocity: 250 fps

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
HK69A1	**40x46mm LV**	GL	**4**	**1 breech**	**SS**	**per grenade**	**2.7**	**6/5 days**	**600 ¥**

Includes retractable stock. +1 Conceal when stock is retracted.

Lightweight at only 5.8 pounds, the HK69A1 is a break-open action grenade launcher designed to fire a variety of low velocity 40mm ammunition (including CS, HE, AP, non-lethal and flares) out to ranges of 400 meters. The combination sight has a flip-up dual aperture for short ranges (50-100 meters) and a ladder sight for long range targets (100-400 meters). The simple break open action and separate manual hammer allows the HK69A1 to be loaded and unloaded without being cocked. The HK69A1 also uses an ambidextrous safety lever.

More information on the HK69A1 can be found at HKPRO.

Carswell M443 20mm Grenade launcher

No Picture Available

Sandoval Military Systems, Inc.
Tacoma UCAS

20x35mm Grenade

Operation: Slide

Safety: two position sliding, mounted inside trigger guard

Sights: Flip leaf rear, uses rifle's front sight or Smartlink

Barrel: 10" (305mm)

Weight: 4.85 lbs. (2.2 kg)

Magazine Capacity: 5-round tubular magazine

Modes of fire: Safe, fire

Muzzle Velocity: 850 fps

Model	Caliber	Range	Conceal	Ammo	Mode	Damage	Weight	Availability	Cost
M443	**20x35mm**	**Sniper Rifle**	**-2**	**3 mag**	**SS**	**per grenade**	**2.2**	**14/27 days**	**1,560 ¥**

This under-slung 20mm Grenade Launcher has been fitted with the Rangefinder ATG package that is compatible with any ADVAT.328-compliant Smartlink II system. The M443 is designed to fire various 20mm Air-Timed Grenades that are compatible with the .328 protocol. However, it is also capable of firing standard 20mm armor-piercing munitions, various flechette rounds, shot rounds, flares, and virtually any other type of 20x35mm ammunition.

The CAS Army Rangers have just accepted this weapon for service.

Reflex Sights

Reflex sights are non-magnifying sights designed specifically for fast target acquision at relatively short ranges. In all instances, these sights consists of a reticle, most often in the form of a single red dot (though not always), projected onto a transparent surface through which the user looks in order to aquire his target. Because of the design characteristics of these sights, parallax is eliminated and eye relief is unlimited. This allows the user to move freely behind the sight and aim with both eyes open, allowing a much wider field of peripheral vision, enhancing situational awareness and target aquisition speed. Thus, shooting becomes more reflexive, hence the name. Time is not wasted lining up four points on a plane (as with iron sights) or adjusting position to maximize the field of view (as with conventional magnifying scopes), nor is the reticle projected onto the target itself (as with laser sights). As long as the user can line up the reticle with the target, regardless of the reticle's position within the transparent surface, he will hit the target.

Some reflex sights use laser holography as a means of generating a targeting reticle. In this type of reflex sight, light, masked into the shape of a targeting reticle, is projected onto a transparent surface through which the user aims, making a hologram. The reticle itself appears three-dimensional, floating at a pre-determined "distance" beyond the muzzle of the firearm. In other words, it functions like the Heads Up Display (HUD) found on jet fighters. (Members of the Environmental Research Institute of Michigan, where laser holography was invented, developed the HUD as well as this kind of reflex sighting system.) The user looks through the transparent "recording surface", places the reticle onto the target and fires.

M16-based rifle with Aimpoint Comp M red dot sight and AN/PVS-14 NVD.

Red Dot sights are a sub-category of reflex sights. They were the first type of reflex sight to be developed and are still the most common by far. They can be found in tubular form (such as Aimpoint's Comp M), or in the single lens reflector form that most of us associate with reflex sights. Red Dot sights are non-holographic. They simply reflect the light generated by an LED off of a transparent spherical or parabolic reflector and into the user's eyes. The transparent reflector is spectrally coated to reflect wavelengths of red light, which the LED emits. All other wavelengths transmit through the reflector. Because of the off-axis abberation presented by a single spherical or parabolic reflector, only a dot is of practical use as an aiming point. Thus the term "red dot" is used to describe these sights. The user simply looks through the reflector, places the red dot onto the target and fires. Again, as long as the user can line up the dot with the target, regardless of the dot's position within the reflector, he will hit the target.

Trijicon ACOG Reflex II

Reflex sights are powered by either commonly available batteries or a light-gathering fiber optic that directs light into a tritium power cell, which illuminates the reticle. Battery life is dependent upon which intensity setting is chosen. Because night vision devices amplify light waves, very low intensity settings can be used when NVDs are employed. These low intensity settings consume less power to operate, thus battery life will be maximized in this mode. In addition to manually adjusting the reticle's intensity, some reflex sights include a means of automatically adjusting the intensity of the targeting reticle in relation to ambient light conditions. Using fiber optics or photosensitive diodes, the brightness of the reticle can be adjusted automatically to improve the reticle's contrast to the target area. For instance, when a target is seen in full sunlight, the reticle must also be particularly intense so that it does not blend into the background. However, in darkness, a very bright reticle will likely dazzle the user, making it difficult to acquire a target. Thus, the reticle must be somewhat subdued but readily visible to the shooter in that environment. When battery power is low, LED circuitry provides a visual indication.

Game Effect

Reflex sights provide a -1 Target Number modifier for firearms tests at all ranges for pistols, shotguns, submachine guns and light carbines. Because the reticle is likely to obscure the target at longer ranges and no form of ballistic drop compensation is provided, reflex sights provide no bonus at ranges beyond medium for all rifle and machine gun classes.

Reflex Sights	Mount	Conceal	Effect	Weight	Avail	Cost
Aimpoint Comp M2 (Red Dot)	Top	-1	-1 TN	0.25	3/36 hrs	370 ¥
ATN Ultra Sight Digital (Red Dot)	Top	-1	-1 TN	0.12	3/36 hrs	250 ¥
C-More Systems Railway (Red Dot)	Top	-1	-1 TN	0.14	3/36 hrs	250 ¥
EoTech Holographic Weapon Sight	Top	-1	-1 TN	0.25	3/36 hrs	350 ¥
Trijicon ACOG Reflex II	Top	-1	-1 TN	0.12	3/36 hrs	470 ¥

Sources: US Patent Office; 4402605, 4665622, 5483362, 5653034, 6373628.

Damage Maximum

As stated on page 114, the maximum damage that can be dealt by a single attack is deadly. This damage maximum is modified downwards according to the Hit Location Table, but still cannot be raised above deadly. The Power Rating increase rule for melee attacks (page 123) remains unchanged.

> **Example:** Duke finds himself cought in a bar brawl, and decides to leave as quickly as possible, but at the exit, he faces a drunken Ork who behaves like the sun would shine out of his behind.Duke decides to ignore such premature behavior, but also decides to give him a good punch, just to make sure he will be able to leave in safety, with nobody following him.He attacks with all his combat pool dice and the GM says that the visibility in that part of the bar is normal, so he scores 8 successes.The Ork makes his test, but since the GM decides he is so drunk that he takes a +1 modifier to his roll he scores only 2 sucesses. Duke has attacked unarmed, so his base damage is (Str)M Stun. Duke's Strength is 7, which means the damage of the blow is 7M Stun.The GM states that he sets the Hit Location Roll for this particular attack to be a high shot without a modifier, because he thinks the standard unarmed attack wouldn't go against the legs of an opponent, unless stated otherwise. The roll rsults in an 8, which is a hit to the arm. The damage is reduced to 7L. The 6 remaining successes normally would raise this damage to Deadly, but the maximum damage level for this body part is Serious.Since this is a melee attack however, the two remaining successes increase the power level of the attack by 1, resulting in 8S.The Ork is wearing only a bullet-proof vest, so he is completely unarmored at this part of his body. Therefore, he makes his body roll against 8 and the unlucky drunk Ork scores no success, so he recieves a serious stun wound.He is still concious, but he decides to stay out of further confrontation by hoding his arm and walking away quickly.Duke just can't help flashing a smile, and leaves the bar.

ARMOR MODIFICATION FOR USE WITH THE HIT LOCATION SYSTEM

You need to know what armor protects what location.The problem here is, that standard rules assume that a piece of armor covering a greater area of the body provides better protection. Since this acts against the concept of using hit locations, you have to substitute the Ballistic and Impact ratings with more general ones, based on material.Upcoming Supplements will contain some examples for material, which should be quite common.The new values presented here replace the old ones only if you use the hit location system, of course. Otherwise the protection would be much too high.

Ratings of the standard armor in SR3

The standard armor of SR3 is shown in a table on page 3. For a description of 'Enc', see 'Combat Pool Loss and Armor Layering'. Some stats have been changed to go with all the additional rules.

Shields

Since Shields don't protect the same Location all the time they have to be handled differently.They should always count as layered armor, but to avoid needless calculations the values were simply halved, which is already factored into the table below. That means you should not include the shields into your calculation for layering armor (If you really want to, double the ballistic and impact ratings given in the table).
When hit while carrying a shield, roll 1D6. The Target Number for that roll is stated in the table. If the roll succeeds, you may add the shield's protection to the protection of the location, which has been hit.

Optional Rule for shield use

Some GMs might allow players to learn a special active shield skill, which should be linked to the Strength Attribute. Opposing to normal rules, every full 3 points of skill decrease the Target Number of the D6 roll by 1, but a rolled 'one' will always be a failure.

COMBAT POOL LOSS AND ARMOR LAYERING

Of course, since the area of the body covered by armor is no longer related to Ballistic or Impact ratings, encumberance rules have to be reevaluated, too.
Armor encumberance is handled per SR3 rules on page 285 with the following modifications: In the Armor Tables is a column marked Enc, which, you guessed it, means encumberance. Add up ALL encumberance of all Armor worn. Use this score to compare with the Quickness Attribute instead of the Ballistic or Impact Ratings. For every point higher than your Quickness, you get the penalty to quickness-related skills and movement, for every two Points higher you lose one Combat Pool die.

OTHER ARMOR

For those of you who are familiar with the former editions of Shadowrun, you may want to use the common types of armor presented in the good old Street Samurai Catalog. The data you need is shown in a table on the next page.

NEW ARMOR

Even more important, you may want to have certain pieces of armor you didn't even think of before, because there has never been such a thing as an 'unprotected spot'. On the next page there is some basic equipment for the street fortress type of character on the go, who thinks protection is more important than mobility.

More Firearms	Conceal	Ammo	Mode	Damage	Weight	Cost
DSA SA58 Carbine	3	20	SA/FA	9S	6	2,900
Colt M23A2, modified	3	30	SA/BF/FA	9M	6	5,025
Robar QR2	NA	5	SS	14S	4.05	5,490
						12,240

Weapon Modifications	Caliber	Modifications
Glock 19	9mm Parabellum	Smartlink I, FSSG, maritime spring cups (underwater firing), tritium sights, threaded barrel, suppressor, 3 extra magazines.
Springfield Armory Mil-Spec Operator	.45 ACP	Smartlink I (external, w/palm induction grips), tritium night sights, threaded barrel, suppressor, 3 extra Wilson 8-round magazines.
Mossberg 590	12 Gauge, 3"	Ghost ring sights, light forearm, tactical sling.
DSA SA58 Para Congo	7.62x51mm NATO	Smartlink II, suppressor, folding stock, rail handguard, scope mount, ACOG 4x32 (Mag 1), tactical sling, 5 extra magazines.
Colt M23A2 (Modification based on M4A1 SOPMOD)	.300 Whisper	Smartlink II, suppressor, RAS forearm, ACOG Reflex Sight, visible/IR light module, laser rangefinder, forward handgrip, tactical sling, 5 extra magazines.
M203A4 Grenade Launcher	40mm Grenade	Mounts to M23A2 upper. Rangefinder.
Robar QR2	7.62x51mm NATO	Smartlink II, Level 3 optical scope w/low-light and rangefinder, retractable bipod, tactical sling.

Ammuniton	Count	Effect	Weight	Cost
9mm Para, Glaser Safety Slug	50	Frangible	1	140
9mm Para, JHP	300	Expanding	6	90
9mm Para, JHP (Subsonic)	300	Expanding, -1 Power	6	90
.45 ACP, JHP (Subsonic)	300	Expanding	6	90
.45 ACP +P, JHP	300	+1 Power, Expanding	6	120
.300 Whisper, HPBT Match (Subsonic)	300	Match	6	375
.300 Whisper, AP (Supersonic)	300	x0.75 Armor	6	600
7.62x51mm NATO, AP	200	x0.5 Armor	6	200
7.62x51mm NATO, HPBT Match	200	Match	6	200
7.62x51mm NATO, Match Explosive (PIE)	50	+1 Power	1	200
12 gauge 3" Magnum 00 Buckshot	60	+1 Power	0.6	60
Total Cost				**2,229**

Explosives	Count	Effect	Weight	Cost
40mm Grenade, Defensive HE	5	10S (-0.5/meter)	5	600
40mm Grenade, Offensive IPE AP	5	15S (-1/meter)	5	600
Flashbangs (Flash/Stun Grenade)	10	15S Stun (-2/meter)	5	400
Total Cost				**1,600**

Overt Body Armor Rig	Rating	Weight	Cost
Overt Armor Suit (Woodland Camo)	4/1	2	800
Medium Tactical Vest w/ Mil-spec Plates (OD Green)	7/5 (12/8)	8	2,500
Nomex/Kevlar Knee Pads (OD Green)	1/4	0.5	100
Nomex/Kevlar Elbow Pads (OD Green)	1/4	0.3	100
Webbing/Load Bearing Vest w/ Water Bladder (OD Green)	-	0.2	50
Ballistic Helmet w/ Face Shield (OD Green)	6/4	2.6	750
Thigh Holster w/ Retention Loop, 2 Magazine Pouches (OD Green)	-	0.2	100
Thigh Sheath for Cougar Knife, 1 Pistol Magazine Pouch (OD Green)	-	0.2	50
Tranceiver, Sound Filter Headset, Subvocal Mic (Encrypt/Decrypt 8)	8	1.5	4,000
Total Cost			**8,450**

SMF Body Armor Rig	Rating	Weight	Cost
Ruthenium Armor Wetsuit (Ruthenium Polymer, +2 scanners)	3/1	2	40,000
Ballistic Helmet w/ Face Shield (Ruthenium Polymer Coated)	6/4	2.6	5,250
Light Tactical Vest w/ secure pockets/holsters	4/3	2	600
Thigh Holster w/ Retention Loop, 2 Magazine Pouches	-	0.2	100
Thigh Sheath for Cougar Knife, 1 Pistol Magazine Pouch	-	0.2	50
Tranceiver, Sound Filter Headset, Subvocal Mic (Encrypt/Decrypt 8)	8	1.5	4,000
Total Cost			**50,000**

Miscellaneous Tactical Gear	Rating	Weight	Cost
Tactical Backpack (OD Green)	-	0.3	150
Grease Paint Kit	-	0.1	10
Medkit	3	3	200
Survival Kit	-	2	100
Low-Light/Infrared Goggles (x1-20)	2	0.3	2,700
Nomex Gloves			100
Ghillie Suit	-	1.5	100
5 Flash Packs	-	1	1,250
Balaclava (Black)	-	-	30
Total Cost			**4,890**

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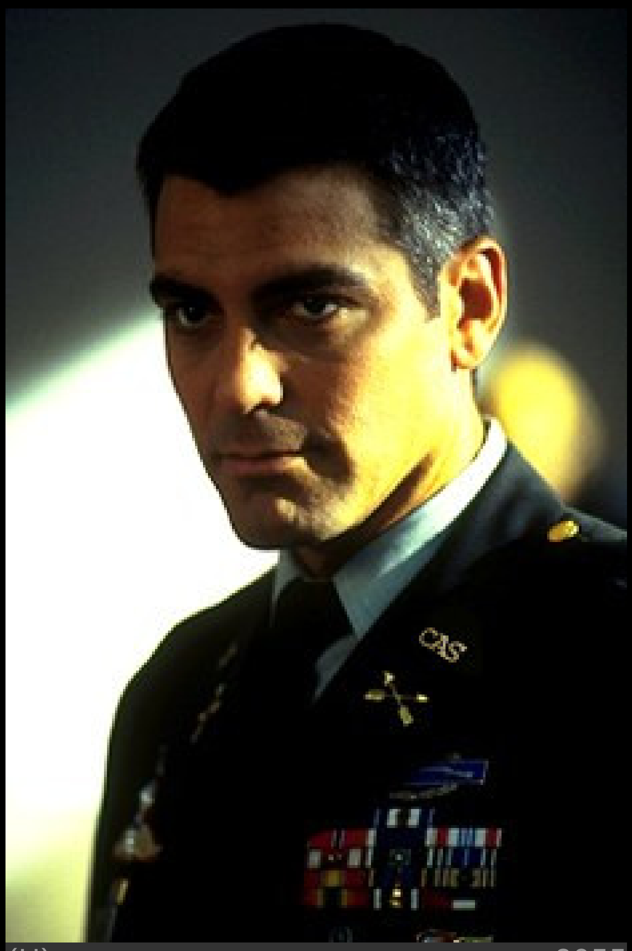
NOFORN

Biographic Sketch

United Canadian and American States/Confederated Amercian States
Jeremy Ivan **KOSTAS**
May 2061



(U) 2055

(U) NAME: Jeremy Ivan ***Kostas*** (KOZ-taz).

(C) POSITION: Military Special Projects (military rank of Master Sergeant), Special Activities Division, Covert Action Staff, Directorate of Operations, Central Intelligence Agency, United Canadian and American States.

(C) PERSONAL DATA: Jeremy Ivan Kostas was born at Pope Air Force Base outside of Fayetteville, North Carolina on March 22, 2025. His father was a pilot, and a high-ranking officer stationed there. His mother was a school teacher. Father transferred to Sheppard AFB Wichita Falls, Texas when his unit (18th Air Support Operations Group) chose to become part of the CAS military in 2034. Parents divorced at this time. Mother moved to Owings Mills, Maryland, UCAS. Lived with his mother until a disagreement sent him to his father's at age 16. Graduated from Hirschi High School, Wichita Falls, TX. Because of his father's position, he was able to become a UCAS/CAS dual citizen. Enrolled into the CAS Army on his 18th birthday. After basic training, volunteered for Airborne training and was assigned to 3rd Army, 82nd Aiborne Division (3rd Brigade, 505th Parachute Infantry Regiment, 1st Battalion, A Company), volunteered for transfer to 75th Ranger Regiment, 1st Battalion, for training at Fort Benning, Georgia.

By the end of his four year term, Kostas had been attached to the 3/75th Rangers Regiment (Airborne), training and operating in various theaters for four years. He achieved E-5 pay grade (SGT) and attained a Bachelor of Science degree in Mechanical Engineering from Columbus State University. Upon graduation, Sgt Kostas was offered a transfer to the Army Corps of Engineers, but declined. Two years later, he'd passed the Army Special Forces Qualification Course and underwent training at the JFK Special Warfare Center and School (MOS 18C). Graduated and was assigned to 10th Special Forces Group (09/20/47, E-7 pay grade). Later turned down an offer to join the Combat Applications Group (1st SFOD-Delta) to persue a life in the private sector, and was given an honorable discharge from service with a rank of Master Sergeant (E-8) from Fort Bragg, NC (03/22/55). Exemplary service record.

Taking a rest while on manuvers with the Green Berets, Morocco, 02/54

Jeremy Ivan Kostas was killed along with wife Sarah McGregor Kostas (05/31/55) in an automobile accident with New Hampshire Congressman Nick Murray, who had been driving while intoxicated near Baltimore, MD UCAS. Congressman Murray was also killed in the accident.

AUTH 595421-T7885:90 APPEND TO FILE:

(C-EE) SUBJECT was pronounced DOA at Franklin Square Hospital, Baltimore, MD. Approved for high-risk medical reclamation. Post "mortem", SUBJECT was recruited by the United Canadian and American States Central Intelligence Agency, Directorate of Operations, 06/21/55. SUBJECT has been involved in operations of varying types and degrees, though the bulk of SUBJECT's work has been as an asset attached to the Military Special Projects (MSP) unit within the Special Activities Division (SAD) under the Covert Action Staff. Along with a squad of similar individuals commanded directly by the Deputy Director of Operations (DDO), SUBJECT's unit, **[NEED TO KNOW. LEVEL EE CLEARANCE REQUIRED.]** Achieved security level A-4. SUBJECT was involved in the interdiction of several BTL manufacturing rings involving several major players of yakuza and mafia organized crime rings, in Moscow, 2057. Recieved Intelligence Star for that mission. Was assigned to several international operations involving state and corporate officials that had been marked either for termination or extraction from hostile environments. **[Further records of operational details are sealed. NEED TO KNOW. LEVEL EE CLEARANCE REQUIRED.]**

UPDATE 1/27/60:

SUBJECT is believed to be KIA during Operation: Falling Star (intellgence gathering) which was aborted 12/20/60. Though no definitive information has yet been uncovered (the suspect body was burned beyond possible identification; DNA evidence inconclusive), two case officers and one agent reported to seeing SUBJECT directly contact an agent prior to entering said agent's place of residence. The residence was destroyed by an explosion minutes later. Details on Operation: Falling Star can be confirmed through DDO if that information is found relevant to current operations or investigations.

Prepared by:
CIA/DDI/OCR - LCooper

Contact:
Robert Caan
703.482.0263
rcaan@cia.gov.ucas
distancertain@roaster2.net (anonymous)

He had minor problems adjusting to civilian life, but things were getting easier. *Twelve years in the military straight out of high school...* It was going to take some adjustment time to get used to the "real world" again. That first step of finding a job had been taken care of. He wasn't so worried about that any more.

"What's the name of the place again?" She asked.

"Ch2M Hill. I'm going to help design equipment for building roads and bridges and all kinds of boring engineer crap like that."

"Kind of a weird name, don't you think? What's it supposed to mean?" They always talked like this when they put away the groceries.

"Uh... I'm not sure, really. probably the usual. Some version of the founder's names," he laughed. "But I'll get right on that, LT."

She turned to him and smiled, then walked closer. "You're not a Master Sergeant anymore, so I'm not your Lieutentant. Understand, Mr. Kostas? Do it again and you'll get a PW the likes of which you won't soon forget!" Her eyes were inches from his. Sarah was funny. He married her because of that. She always had something planned. Occasionally that meant pulling your boxers up to your ears when you least expected it. A Power Wedgie.

A look of shock crossed Jeremy's face, the kind you'd expect to see the instant a person finds themself in the midst of a massive PW. "Yessir," he replied in a pained voice, followed by the smile that Sarah loved so much.

She kissed him, putting her arms around his shoulders. "When do you start, smart ass?"

"Next Monday. We've got a few days to play with." She smiled crookedly. He loved that smile. The first time he saw her, off base at that old convenience store he and the guys would go to, she smiled at him like that. It meant she wanted something. He smiled back because he knew. She was so beautiful. Even when she didn't think so. Especially when she didn't know.

"Well, let's start it off right, then." She kissed him again, more passionately than the first time. "Put down the peanut butter, *Master*," she said in some kind of a sexy accent with pause for effect, "Sergeant." He laughed at her and followed her to the bedroom.

>>next>>

Contacts

BACK

Level 1 Contacts	Type
Scott Cennis	Fixer (Portland, Tir Tairngire)
Cowboy	Arms Dealer (Houston, CAS)
Davis Jackson (D-North Carolina)	Politician (CAS Senator)
Oliver Ten Feathers	Politician (Sioux Tribal Council)
Charles Evans-Stevenson (R-Maryland)	Politician (UCAS Congressman)
Arnold Spencer	Politician (House of Lords, UK)
Rory O'Halloran	UCAS CIA Case Officer

Level 2 Contacts	Type	Location	Cost
Gordon DelMarco	Fixer	Richmond, VA CAS	10,000
Max Wallace	Fixer	Boston, MA UCAS	10,000
Ivy Tanner	Fixer	Los Angeles, CFS	10,000
Esteban Aguilar	Fixer	Guadalahara, Aztlan	10,000
Jimmy Quickstep	Fixer	Phoenix, PCC	10,000
Orrie Crosby	Fixer	Denver	10,000
Grey Knight	UCAS NSA	(varies)	10,000
Auggie Kerry	Mechanic	Circle, Sioux Nation	10,000
Bunker	Armorer	Boston, MA UCAS	10,000
Chris Crisci	Mafia Soldier	Chicago, IL UCAS	10,000
Yashi Himata	Yakuza Soldier	Chicago, IL UCAS	10,000
Tracy Brille	Ares Secretary	Seattle, UCAS	10,000
Oscar Jacobs	DocWagon HTR Pilot	Seattle, UCAS	10,000
Total Cost			**130,000**

Advanced Armament Corporation, Lilburn, GA CAS								
Pistol Suppressors	**Caliber**	**Method**	**Mount**	**Conceal**	**Effect**	**Weight**	**Avail**	**Cost (¥)**
Pilot [0.98"x5.5"]	.22 Rimfire	Dry	Thread	-2	+4	0.09	3/36 hrs	325
Recon [0.98"x5.5"]	.22 Rimfire	Dry	Thread	-2	+4	0.18	3/36 hrs	300
Scarab [1.0"x5.5"]	.22 Rimfire	Dry	Thread	-2	+4	0.15	3/36 hrs	450
Slim-Lite [0.88"x6.0"]	.22 Rimfire	Dry	Thread	-2	+4	0.14	3/36 hrs	395
Stinger [0.98"x3.1"]	.22 Rimfire	AE	Thread	-1	+4	0.1	3/36 hrs	395
Evolution-9 [1.25"x7.2"] RB	9mm	Wet	Thread	-2	+3/+4	0.3	3/36 hrs	595
M9-SD [1.25"x7.0"]	9mm	Wet	Snap	-2	+3/+4	0.2	3/36 hrs	595
Phantom [1.25"x7.0"]	9mm	Wet	Thread	-2	+3/+4	0.15	3/36 hrs	495
Scorpion [1.0"x4.0"]	9mm	AE	Thread	-1	+2	0.06	3/36 hrs	550
Spider [1.25"x4.9"]	9mm	AE	Thread	-2	+3	0.1	3/36 hrs	350
Spider II [1.0"x6.0"]	9mm	AE	Thread	-2	+3	0.09	3/36 hrs	450
Entry [1.38"x7.38"]	.40"	Wet	Thread	-2	+3/+4	0.21	3/36 hrs	525
Eclipse [1.38"x7.4"]	.45"	Wet	Thread	-2	+3/+4	0.21	3/36 hrs	550
Tactical [1.38"x7.0"]	.45"	Wet	Thread	-2	+3/+4	0.2	3/36 hrs	595
Orion [1.25"x7.0"]	.45"	AE	Thread	-2	+3	0.2	3/36 hrs	495

SMG Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Avenger [1.25"x10"]	9mm	Dry	Uzi	-2	+3	0.35	6/36 hrs	525
CAC9 [1.75"x11.5"]	9mm	Dry	MAC	-2	+2	0.56	6/36 hrs	285
Navy [1.25"x7.5"]	9mm	Wet	3-Lug	-2	+3/+4	0.22	6/36 hrs	550
Striker II [1.5"x8.0"]	9mm	Dry	3-Lug	-2	+3	0.22	6/36 hrs	525
Raptor-40 [1.5"x9.3"]	.40"	Dry	3-Lug	-2	+3	0.34	6/36 hrs	525
Defender [1.38"x8.8"]	.45"	Wet	3-Lug	-2	+2/+4	0.31	6/36 hrs	595

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
G36-SD [1.5"x6.0"]	5.56mm	Dry	QD	-1	+2	0.54	6/36 hrs	525
Krinkov [1.5"x6.0"]	5.45mm	Dry	AK	-1	+2	0.54	6/36 hrs	525
Krinkov [1.5"x6.0"]	7.62mm LV	Dry	AK	-1	+2	0.54	6/36 hrs	525
M4-2000 [1.5"x7.0"]	5.56mm	Dry	QD	-1	+2	0.70	6/36 hrs	625
Ranger [1.5"x6.0"]	5.56mm	Dry	Thread	-1	+2	0.53	6/36 hrs	525
Cyclone [1.5"x8.0"]	7.62mm	Dry	Thread	-1	+2	0.88	3/36 hrs	550
M40-SD [1.5"x9.0"]	7.62mm	Dry	QD	-1	+2	0.79	3/36 hrs	625

This file has been adapted in part from **Noise Suppressors** by Rob Thomas for the game **Millennium's End**. (Thanks Rob.)

AWC Systems Technology

Pistol Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Backdraft [0.95"x3.5"]	.22 Rimfire	Dry	Thread	-2	+4	0.12	3/36 hrs	485
Archangel III [1.0"x5.5"]	.22 Rimfire	Dry	Thread	-1	+4	0.17	3/36 hrs	575
Abraxas [0.98"x5.75"]	9mm or .40"	Wet	Thread	-2	+3/+4	0.16	3/36 hrs	595
Nexus [1.375"x8.0"] RB	.45"	Wet	Thread	-2	+3/+4	0.45	3/36 hrs	795
Recoil Regulator (Neilsen)	Any	-	Thread	-	Special	0.135	3/36 hrs	250

SMG Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
MK9 [2.0"x12.0"]	9mm or .45"	Dry	Any	-2	+3	0.9	6/36 hrs	650
MK9S [1.75"x11.5"]	9mm or .45"	Dry	Any	-2	+2	0.9	6/36 hrs	650
CQB/SMG [1.6"x8.0"]	9mm	Wet	Any	-2	+3/+4	0.8	6/36 hrs	725
CQB/SMG [1.6"x10.0"]	.40"	Wet	Any	-2	+3/+4	0.85	6/36 hrs	750

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Raider [1.5"x6.7"]	5.56mm	Dry	QD	-1	+2	0.67	6/36 hrs	895
Optima II [1.58"x7.25"]	5.56mm	Dry	QD	-1	+2	0.69	6/36 hrs	650
Thundertrap [1.6"x8.5"]	7.62mm	Dry	Thread	-1	+2	0.78	6/36 hrs	950
Turbodyne [2.0"x14.0"]	.50 BMG	Dry	Thread	-1	Special	1.5	6/36 hrs	1495

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DVC Armaments

Pistol Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Companion [1.0"x6.0"]	.22 Rimfire	Dry	Thread	-2	+4	0.3	3/36 hrs	400

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Crusader [1.6"x7.75"]	5.56mm	Dry	Thread	-1	+2	0.97	6/36 hrs	600
Valor [1.62"x9.0"]	7.62mm	Dry	Thread	-1	+2	0.97	6/36 hrs	600
Titan [2.5"x16.0"]	.50 BMG	Dry	Thread	-3	Special	3.8	6/36 hrs	980

Knight's Armament Company

Pistol Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
Snap-On [1.5"x6.0"]	9mm	W&M	Snap	-2	+3	0.3	6/72 hrs	500
OHG [1.37"x7.5"]	.45	Wet	Thread	-2	+3/+4	0.43	6/72 hrs	1,500

SMG Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
MP5 [1.37"x7.75"]	9mm	Wet	3-Lug	-1	+3/+4	0.64	6/72 hrs	1,200

Rifle Suppressors	Caliber	Method	Mount	Conceal	Effect	Weight	Avail	Cost (¥)
M4QD [1.52"x6.6"]	5.56mm	Dry	Snap	-1	+2	0.64	6/72 hrs	1,200
SR-25 [1.52"x8.5?"]	7.62mm	Dry	Snap	-1	+2	0.64	6/72 hrs	1,400

5.45x18mm Soviet

select a cartridge

SHADOWRUN AND FIREARMS

5.45x18mm Soviet

Weapon Type	Base Damage Code
Hold-Out	6L
Light Pistol	6L

Primary Bullet: AP	Case: Rimless, Straight	Reload: No
Bullet Mass (gr): 40	Case Length (in/mm): 0.71/18	Count/Box: 100
Velocity (fps): 1035	Primer: Centerfire, Berdan	Conceal/Box: 8

Suppression: +6 to Perception Tests involving a suppressed weapon firing this cartridge.

Payloads Available	Effect	Cost / 100
Armor Piercing	-1 Armor Rating	8 ¥
Full Metal Jacket	Regular	5 ¥

Description

A bottlenecked automatic cartridge designed for the Soviet PSM pistol in the 1970's.

The specially designed bullet (steel tip/lead filler) has been reported to produce limited armor-piercing effects against certain types of light body armor.

.25 Automatic (.25 ACP, 6.35mm Browning)

Weapon Type	Base Damage Code
Hold-Out	4L
Light Pistol	4L

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 45-50	Case Length (in/mm): 0.62/15.75	Count/Box: 50
Velocity (fps): 810-760	Primer: Centerfire, Boxer, SP	Conceal/Box: 9

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	8 ¥
Jacketed Hollowpoint	Hollowpoint Rules	8 ¥
Frangible	Flechette Rules	110 ¥

Description

Designed by John Moses Browning and introduced in 1908 by Colt as a light self-defense round for small a pocket automatic pistol, also developed by John Browning.

The .25 ACP is generally considered to be underpowered for a self-defense weapon, but its small size can be an advantage in a very small hold-out pistol. Accuracy makes a big difference.

.32 Automatic (7.65mm Browning)

Weapon Type	Base Damage Code
Hold-Out	5L
Light Pistol	6L

Primary Bullet: FMJ	Case: Semi-rimmed, Straight	Reload: Yes
Bullet Mass (gr): 60-71	Case Length (in/mm): 0.68/17.3	Count/Box: 50
Velocity (fps): 970-800	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Jacketed Hollowpoint	Hollowpoint Rules	10 ¥
Frangible	Flechette Rules	135 ¥

Description

A semi-rimmed automatic pistol cartridge developed by John Browning in 1899.

The .32 Auto is commonly considered to be the absolute least powerful cartridge adequate for self-defense. Still a popular cartridge in small hold-out pistols.

9mm Makarov (9x18mm Russian Makarov)

Weapon Type	Base Damage Code
Hold-Out	4M
Light Pistol	5M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 90-100	Case Length (in/mm): 0.71/18	Count/Box: 50
Velocity (fps): 1060-885	Primer: Centerfire, Berdan	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	12 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	15 ¥
Frangible	Flechette Rules	135 ¥

Description

A rimless pistol cartridge developed in 1946 by Nikolai Makarov. The Makarov automatic pistol was accepted for use by Soviet military forces in 1951.

This round is considered adequate for self-defense, but should not be confused with the more powerful 9mm Parabellum.

.380 Automatic (.380 ACP, 9x17mm, 9mm Kurz, 9mm Short)

Weapon Type	Base Damage Code
Hold-Out	4M
Light Pistol	5M
Submachine Gun	5M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 85-95	Case Length (in/mm): 0.67/17	Count/Box: 50
Velocity (fps): 900-1000	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥

Description

The .380 Auto is a light automatic pistol cartridge, and yet another popular design by firearms genius John Browning.

This cartridge is common on both sides of the Atlantic. First offered by Colt in the early 1900's with their popular pocket pistols, and later in more famous designs, the Wather PP and PPK.

7.62mm Tokarev (7.62x25mm Russian Tokarev)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	6M
Machine Pistol	6M
Submachine Gun	7M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 87	Case Length (in/mm): 0.97/24.6	Count/Box: 50
Velocity (fps): 1390	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Full Metal Jacket +P	+1 Power	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
APDS	-35%/10%	35 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

A bottlenecked centerfire cartridge which was developed in 1930 by Fedor Tokarev for the Russian TT33 automatic pistol.

The 7.62mm Tokarev is adequate for self-defense, though it is sometimes considered a bit light for military use. A hotter version of this cartridge was developed in Czechoslovakia in the early 1950's.

Very common in Russia and former Warsaw Pact nations.

.30 Mauser (7.63x25mm Mauser)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	6M
Machine Pistol	6M
Submachine Gun	7M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 86	Case Length (in/mm): 0.99/25.1	Count/Box: 50
Velocity (fps): 1160-1440	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Full Metal Jacket +P	+1 Power	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
APDS	-35%/10%	35 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

Hugo Borchardt developed a relatively light load of the .30 Mauser to go along with his automatic pistol; the first in the world to see commercial success. Both were produced by Ludwig Loewe & Co. (later DWM) in 1893.

Identical to the 7.62mm Tokarev in measurement and performance, the .30 Mauser is the Tokarev's senior by nearly 40 years.

9mm Parabellum (9x19mm Luger, 9mm NATO)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	7M
Machine Pistol	7M
Submachine Gun	8M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 100-147	Case Length (in/mm): 0.75/19	Count/Box: 50
Velocity (fps): 1300-975	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Full Metal Jacket +P/+P+	+1 Power	18 ¥
Jacketed Hollowpoint +P/+P+	HP Rules +1 Power	20 ¥
SJESC (Light Armor Piercing)	-25% Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

"Prepare for war." The standard 9mm round popularized by gangsta rappers everywhere.

Developed in 1902 for the famous Luger automatic pistol, this round is still a very popular, even standard automatic self-defense cartridge. In 1985 it was adopted as the standard handgun cartridge of the US Military for the M9 (Beretta 92FS) pistol.

The 9mm Parabellum is one of the most common cartridges of any kind throughout the world.

Use this data for the **9x21mm IMI** cartridge. Case length is .83"/21mm.

.38 Super Automatic (.38 Super)

Weapon Type	Base Damage Code
Hold-Out	6M
Medium Pistol	8M

Primary Bullet: FMJ	Case: Semi-rimmed, Straight	Reload: Yes
Bullet Mass (gr): 115-130	Case Length (in/mm): 0.90/22.86	Count/Box: 50
Velocity (fps): 1300-1150	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

A moderately powerful semi-rimmed automatic cartridge developed by Colt in 1929.

The .38 Super is more commonly found in pistol competitions than anywhere else. It is mostly available in Colt-manufactured handguns. It is very adequate for self-defense purposes.

.40 Smith & Wesson (.40 S&W)

Weapon Type	Base Damage Code
Hold-Out	6M
Medium Pistol	8M
Submachine Gun	9M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.85/21.5	Count/Box: 50
Velocity (fps): 1325-905	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

The .40 S&W came about in 1990. The FBI was using a sub-loaded version of the 10mm Auto as its standard field cartridge. Smith & Wesson realized that those ballistics could be achieved with a shorter case, allowing for a more comfortable grip in the FBI's issued automatic pistols, which Smith & Wesson also provided.

The .40 S&W is a very popular self-defense cartridge, and can be swapped with the .357 SIG by replacing just the barrel.

.45 ACP (.45 Automatic Colt Pistol)

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	8M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 165-230	Case Length (in/mm): 0.898/22.8	Count/Box: 50
Velocity (fps): 1140-855	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply for +P ammunition.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
+P (Full Metal Jacket)	+1 Power	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Explosive	+1 Power	115 ¥
Frangible	Flechette Rules	140 ¥

Description

Introduced in 1905 by John Browning, the .45 Automatic Colt Pistol has been an American standard for 95 years to date, and will probably continue to be for many years to come.

Adopted by the United States Ordnance Department along with the Colt 1911 automatic pistol, the .45 ACP was the primary military handgun cartridge for 74 years until it was replaced by the 9mm Parabellum/M9 pistol in 1985.

The ultimate in self-defense cartridges, and very easy to suppress as well.

.45 GAP (.45 Glock Automatic Pistol)

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	8M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 165-230	Case Length (in/mm): 0.755/19.1	Count/Box: 50
Velocity (fps): 1050-755	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply for +P ammunition.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Explosive	+1 Power	115 ¥
Frangible	Flechette Rules	140 ¥

Description

Introduced in 2003 as a joint project between Glock, who developed the gun, and Speer, who developed the cartridge.

The idea behind the .45 GAP was to create a cartridge capable of .45 ACP ballistics that could be used in the Glock 17 frame. Making slight changes to the .45 ACP case in order to safely contain the higher pressures generated in the shorter case, it seems that Glock and Speer have succeeded in creating another marketable .45 handgun cartridge.

9x23mm Winchester

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 124	Case Length (in/mm): 0.90/23	Count/Box: 50
Velocity (fps): 1460	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

Developed by Winchester for IPSC competition in the mid 1990's, the 9x23mm was an attempt to create the lightest recoiling load that will qualify for "Major Power Factor" under IPSC rules.

Having a lengthened and strengthened 9mm Parabellum case, the 9x23mm doesn't do much that the .357 SIG hasn't already accomplished. It can however be chambered in some 9mm Para weapons with only a new barrel, magazine and recoil spring.

.357 SIG

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	9M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 90-147	Case Length (in/mm): 0.865/22	Count/Box: 50
Velocity (fps): 1725-1170	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Additional: Suppression is much easier with the .40 S&W. Weapons firing the .357 SIG can be converted to fire the .40 S&W with only a change of barrels.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	x0.75 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

A very powerful and accurate, necked pistol cartridge designed to match the ballistics of the .357 Magnum's 125 grain bullet load from a pistol with a 4" barrel. Developed by SIG in 1994.

The .357 SIG is actually more of an enhanced 9mm Parabellum than an "automatic .357", as it is commonly marketed. It uses a .40 S&W case necked down to accept .355" (9mm) bullets.

Any weapon firing the .40 S&W cartridge can be converted to fire the .357 SIG by replacing just the barrel, and vice versa.

10mm Automatic (10x25mm Norma, Centimeter)

Weapon Type	Base Damage Code
Heavy Pistol	9M
Submachine Gun	9M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.99/25	Count/Box: 50
Velocity (fps): 1360-950	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Soft Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

A powerful rimless automatic cartridge introduced in 1983 for the Bren Ten combat pistol. Developed by a small California firm under the direction of Jeff Cooper and designed as a more powerful alternative to the .45 ACP.

Though this cartridge has lost favor due to the advent of the .40 S&W, its attractions cannot be discounted. The 10mm Auto is capable of ballistics far beyond the capabilities of the .40 S&W, but due to its relatively heavy recoil, it is probably better suited in a submachine gun than a pistol at these loadings.

.400 COR-BON

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Pistol	9M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.90/22.86	Count/Box: 50
Velocity (fps): 1450-1250	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	18 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

Developed by COR-BON president Peter Pi in 1996, the .400 COR-BON consists of a .45 ACP case necked down to a .40 caliber bullet. With a bullet of the same weight, this combination produces velocities in excess of anything the .40 S&W and 10mm Auto cartridges are capable of.

Any weapon designed to fire the .45 ACP can be modified to fire the .400 COR-BON by swapping just the barrel.

.40 Super

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Pistol	10M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.984/25	Count/Box: 50
Velocity (fps): 1800-1300	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply. Most pistols designed to fire this cartridge will fail to cycle ammunition loaded to subsonic velocities.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	18 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

The .40 Super is an offshoot of the .45 Super, and was developed by Triton Ammunition in 1996. It is intended as a silhouette competition round.

The .40 Super essentially consists of a .45 Super case lengthened to 25mm and necked to accept a .400" bullet. This launches the .40 Super into the .41 Magnum range, in terms of ballistic potential.

Any weapon designed to fire the .45 Super can be modified to fire the .40 Super by swapping just the barrel.

.44 Auto Mag (.44 Automatic Magnum)

Weapon Type	Base Damage Code
Heavy Pistol	10M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 180-300	Case Length (in/mm): 1.29/33	Count/Box: 20
Velocity (fps): 1610-950	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: Velocity Control rules apply.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Soft Armor Piercing	-2 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Explosive	+1 Power	120 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	50 ¥

Description

Developed by Harry Sanford of AMT and introduced in 1973 for the AMT Auto Mag pistol, in an attempt to bring .44 Magnum ballistics to an automatic pistol design.

Also popularized by Clint Eastwood's *Dirty Harry Callahan* in the movie *Sudden Impact*, the .44 Auto Mag is fully the equal of the .44 Magnum.

The .44 Auto Mag is considered to be far too powerful for self-defense purposes. Though with the consideration of some metahuman races, this cartridge could easily make a comeback.

.440 COR-BON Magnum

Weapon Type	Base Damage Code
Heavy Pistol	10S

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 240-300	Case Length (in/mm): 1.285/32.6	Count/Box: 20
Velocity (fps): 1610-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: No.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Expanding Full Metal Jacket	Hollowpoint Rules	30 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥
Soft Point, Bonded Core	Hollowpoint Rules	35 ¥
Round Nosed Solid	-2 Armor Rating	30 ¥
Explosive	+1 Power	90 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	50 ¥

Description

Another development of COR-BON president Peter Pi, the .440 COR-BON Magnum consists of a .50 Action Express case necked down to a .44 caliber bullet. This combination produces velocities, energy and ranges in excess of anything the .50 Action Express or .44 Magnum are capable of.

Any weapon designed to fire the .50 Action Express can be modified to fire the .440 COR-BON Magnum by swapping just the barrel.

.45 Super

Weapon Type	Base Damage Code
Hold Out	7M
Heavy Pistol	9M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 185-230	Case Length (in/mm): 0.898/22.8	Count/Box: 50
Velocity (fps): 1450-1200	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply. Most pistols designed to fire this cartridge will fail to cycle ammunition loaded to subsonic velocities.

Additional: +1 Recoil Modifier. Can be fired from .45 ACP pistols with fully supported chambers (this excludes many M1911 variants), but requires a heavy recoil spring to cycle ammunition properly. A pistol modified or designed to use the .45 Super cannot reliably cycle standard .45 ACP loads, though most can fire .45 ACP +P ammunition without problems.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	20 ¥
Frangible	Flechette Rules	160 ¥
Explosive	+1 Power	115 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	75 ¥

Description

Introduced in 1994 by Ace Custom .45's, Inc., the .45 Super can be called a ".45 ACP on steroids."

Designed as a practical magnum load for any .45 ACP pistol, the .45 Super is dimensionally identical to the .45 ACP. Through the use of a thicker case, the .45 Super allows almost any pistol chambered in .45 ACP to fire bullets at velocities far beyond what the .45 ACP can safely provide, with only the change of a heavier recoil spring.

This higher velocity comes at the price of heavier recoil.

.45 Winchester Magnum (.45 Win Mag)

Weapon Type	Base Damage Code
Heavy Pistol	11M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 185-260	Case Length (in/mm): 1.198/30.4	Count/Box: 20
Velocity (fps): 1850-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	20 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	25 ¥
Jacketed Hollowpoint	Hollowpoint Rules	30 ¥
Explosive	+1 Power	120 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	100 ¥

Description

Introduced in 1979 by Winchester. This cartridge has been adopted as a standard chambering for the Thompson/Center Contender competition pistols. There have been a number of semi-automatic pistols developed for use with this cartridge, notably the Wildey Magnum and the LAR Grizzly.

.475 Wildey Magnum

Weapon Type	Base Damage Code
Heavy Pistol	10S

Primary Bullet: JSP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 250-300	Case Length (in/mm): 1.295/32.8	Count/Box: 20
Velocity (fps): 1850-1610	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	25 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	40 ¥
Explosive	+1 Power	140 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	120 ¥

Description

Gun maker and wildcat cartridge designer Wildey Moore introduced this cartridge for use in a gas-operated semi-automatic pistol also of his own construction.

The .475 Wildey Magnum is one of the most powerful handgun cartridges on earth. It was featured in the movie *Death Wish III*.

.50 Action Express

Weapon Type	Base Damage Code
Heavy Pistol	9S

Primary Bullet: JHP	Case: Rebated, Straight	Reload: Yes
Bullet Mass (gr): 300-325	Case Length (in/mm): 1.285/32.6	Count/Box: 20
Velocity (fps): 1580-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	25 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥
Reverse Ogive	Reverse Ogive Rules	40 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Explosive	+1 Power	140 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	120 ¥

Description

Introduced in 1988 by Action Arms president Evan Whildin as a product improvment for the IMI Desert Eagle automatic pistol.

The .50AE uses a rebated rim of the same diameter as the .44 Magnum. It also has the same case length and overall length. This means that in order to fire the .50AE, the only changes that need to be made to a Desert Eagle chambered in .44 Magnum are a new .50AE barrel and magazine.

Revolver Cartridges

Three loadings of .44 Magnum.

Revolver cartridges are almost always straight-walled, rimmed cartridges. Aside from revolvers, many of these cartridges are commonly used in single-shot pistols, lever-action carbines, bolt-actions and other types of manually-operated repeating firearms. Because these cartridges headspace against their wide rim, shorter, less powerful (and softer recoiling) cartridges can be used in most firearms chambered for magnum cartridges. Such is the case with the .357 Magnum and .38 Special, the .44 Magnum and .44 Special, and the .454 Casull and .45 Colt.

Excepting the Desert Eagle, there are few automatic pistols designed to fire these cartridges. Said pistols must be specially designed to avoid feeding mishaps common with rimmed cartridges that are stacked in a box magazine. This comes at the expense of the weapon's size and ammunition capacity.

It is stated in Shadowrun canon that revolvers cannot be suppressed. This is not necessarily true. Basically, it's not worth the cost and effort to design and manufacture a suppressed revolver. But if you've got a good idea and a lot of money, it can be done. Therefore, rules for suppression are stated with the cartridges.

Click here to view Revolver Cartridges

Carbine Cartridges

(L to R) 4.6x30mm HK,
5.7x28mm FN,
.30 Carbine

Technically, a carbine is "A short rifle, usually to the design of a standard infantry rifle, but intended for use by engineers, artillery, and similar troops whose primary equipment is not the shoulder arm but who require one for self-defense."

This means that a carbine can fire just about any cartridge that will work in a small rifle. What I have listed here as "carbine cartridges" are sort of odd cartridges that really don't fall into any other category, but could easily be used to good effect in a short, light rifle.

Click here to view Carbine Cartridges

When using any rifle cartridge, apply a **standard x0.75 Armor Code rating** unless stated otherwise.

5.45x39mm Soviet M74 (5.45x39mm Russian)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 52	Case Length (in/mm): 1.535/39	Count/Box: 50
Velocity (fps): 2950	Primer: Centerfire, Berdan, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	12 ¥
Light Armor Piercing	x0.5 Armor	25 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	12 ¥
Tracer	Tracer	+30 ¥/box

Description

The standard Russian assault rifle cartridge introduced in 1974 in the AK-74.

The bullet is almost 1" long and is composed of a mild steel core with a lead filler, and air space in the nose. This causes the bullet to tumble on impact, causing a severe wound.

Though this round does not have quite the energy of the 5.56mm NATO, it does have a comparable wounding effect.

5.56x45mm NATO (.223 Remington)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.77/45	Count/Box: 50
Velocity (fps): 3300-2870	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Light Armor Piercing	x0.5 Armor	30 ¥
Ballistic Tip	Hollowpoint + Match	18 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed by Bob Hutton for Eugene Stoner's AR-15 rifle, which was adopted by the US military in 1964 as the M-16. The cartridge was introduced commercially shortly thereafter by Remington as the .223 Remington. Adopted by NATO in 1982 after a slight redesign.

This round was adopted in order to increase hit probability at a range of about 500 meters. It accomplishes that job well, though the round does have its detractors.

More...

5.8x42mm Chinese Type 95

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 65	Case Length (in/mm): 1.65/42	Count/Box: 50
Velocity (fps): 3180	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Light Armor Piercing	x0.5 Armor	30 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

This cartridge first appeared in the Chinese QBZ95 bullpup assault rifle in 1995.

Relatively little is known about the 5.8x42mm outside of China. It would appear to have all the properties necessary to outperform all previous assault rifle cartridges in terms of exterior ballistics and possibly terminal ballistics as well.

6x48mm Optimum

Weapon Type	Base Damage Code
Carbine	7S
Assault Rifle	8S
Sport Rifle	8S
Sniper Rifle	8S
Light Machine Gun	8S

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 85-100	Case Length (in/mm): 1.88/48	Count/Box: 50
Velocity (fps): 3150-2900	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	16 ¥
Light Armor Piercing	x0.5 Armor	35 ¥
Polymer Tip Boat Tail	Hollowpoint, Match	16 ¥
Subsonic HPBT (Velocity Controlled)	-3 Power, no armor bonus	16 ¥
Tracer	Tracer	+30 ¥/box

Description

This cartridge was created by militaria and firearm journalist Stan Crist, "to provide a single, relatively lightweight round that can be used in the standard infantry rifle, sniper rifle, and machine gun, thereby simplifying logistics."

Ballistically, the 6mm Optimum falls between the 5.56x45mm and 7.62x51mm cartridges. It retains many ballistic qualities of the 7.62x51mm, while reducing recoil to a more manageable level.

6.8x43mm Special Purpose Cartridge (6.8mm SPC)

Weapon Type	Base Damage Code
Carbine	9M
Assault Rifle	10M
Light Machine Gun	10M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 115	Case Length (in/mm): 1.69/43	Count/Box: 50
Velocity (fps): 2650	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	16 ¥
Light Armor Piercing	x0.5 Armor	35 ¥
Polymer Tip Boat Tail	Hollowpoint, Match	16 ¥
Subsonic HPBT (Velocity Controlled)	-3 Power, no armor bonus	16 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed jointly by Remington and the US Military in order to provide users of the M16/ M4 platform rifles with enhanced ballistic performance.

Data collected after firefights throughout the 1980s and 1990s suggested that common loads for the 5.56x45mm were not doing the trick they were supposed to. The 6.8x43mm is an attempt at improving ballistic performance with the caveat of fitting the cartridge into an existing action.

7.62x39mm Soviet M43 (7.62x39mm Russian)

Weapon Type	Base Damage Code
Carbine	9M
Assault Rifle	9M
Sport Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 110-150	Case Length (in/mm): 1.535/39	Count/Box: 50
Velocity (fps): 2500-2100	Primer: Centerfire, Berdan, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	18 ¥
Light Armor Piercing	x0.5 Armor Rating	35 ¥
Armor Piercing Discarding Sabot	x0.25 Armor Rating	45 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power, no armor bonus	18 ¥
Tracer	Tracer	+30 ¥/box

Description

The standard Russian assault rifle cartridge introduced in 1943 for use in the SKS semi-automatic rifle. It was replaced 1974 by the 5.45x39mm and the AK-74.

Still in use due to the sheer number of rifles manufactured in this caliber, the 7.62x39mm Soviet and rifles that fire it are available almost anywhere on the planet.

Sniper Rifle Cartridges

> **snip·er** *n. 1. A skilled military shooter detailed to spot and pick off enemy soldiers from a concealed place. 2. One who shoots at other people from a concealed place.* **-The American Heritage Dictionary**

Today, the "official sniper rifle cartridge" for most militaries is the 7.62x51mm NATO, which was developed for infantry use shortly after World War II! While capable of neutralizing targets at distances of about 900 meters, the good old 7.62mm NATO really begins to become unstable that far out, and instability equals unpredicatability.

For that reason, the US military became interested in developing a cartridge specifically designed for highly accurate, long-range anti-personnel work in the early 1980's. The .338 Lapua Magnum was the product of that research. As of 2002, the big .338 has seen a respectable level of acceptance (mostly in European countries), but it has a long way to go if it is to eclipse the track record of the venerable 7.62x51mm NATO.

Something that's more common for non-military units such as the US Secret Service, police SWAT and other similar units is the use of high-powered sporting rifle cartridges such as the 7mm Remington Magnum or the .300 Winchester Magnum in target-grade rifles. These cartridges fall between the 7.62mm NATO and the .338 Lapua Magnum in terms of ballistic performance. However...

The cartridges listed here are available from several factories with match-grade components, which facilitate accuracy.

Click here to view Sniper Rifle Cartridges

Suppressed Rifle Cartridges

L to R: .338 Whisper with 300 grain Sierra MatchKing HPBT, .375 Whisper with 300 grain Hornady SPBT, and .500 Whisper with M20 APIT.

Developed in the early 1990s by J.D. Jones of SSK Industries, the Whisper® series of cartridges were designed to be capable of competition accuracy at both supersonic and subsonic velocities. In addition, these cartridges had to be easily chambered in common automatic and bolt-action rifle designs. Therefore, they were based on cases with the same head dimensions as the militarily- and commercially-common 7.62x51mm NATO (.308 Winchester) and 5.56x45mm NATO (.223 Remington) cartridges. As a practical conversion, the Whispers were quickly noted for their possible tactical applications in suppressed rifles.

At around the same time (possibly even a few years earlier), Russian small arms designers began developing a new cartridge from the 7.62x39mm M43 case. Necked up to accept a heavy 9mm bullet, this cartridge was designed specifically for suppressed applications, unlike J.D. Jones' Whisper® series which were developed to cover a wide range of uses, at both subsonic and supersonic velocities.

Essentially, suppressed rifle cartridges consist of smaller-than-normal rifle cases packed with bullets that are heavier and/or larger in diameter than normal. The small case provides enough space to burn powder in an efficient manner (unlike most sub-loaded rifle cases) while the heavy rifle bullet keeps velocity in check.

Other than being unusually heavy, the type of bullets commonly used in these cartridges are a little special. Match rifle bullets provide a streamlined, ballistically efficient shape which translates to less drag, helping the bullet retain energy at longer ranges. You might want to familiarize yourself with the rules I've devised for match ammunition and expanding bullets before proceeding.

Some of these cartridges are available in either subsonic or supersonic loadings. Subsonic cartridges **DO NOT** recieve the standard x0.75 Armor Rating Modifier for rifle cartridges. Supersonic loads for these cartridges DO recieve the standard x0.75 Armor Rating Modifier.

Click here to view Suppressed Rifle Cartridges

Anti-Matériel Rifle Cartridges

In the early 1980's, the US military began to examine the potential of small arms to destroy vulnerable, expensive enemy matériel. A highly mobile two-man team would be used to infiltrate enemy held territory. Using a heavy rifle to destroy equipment such as forward radar arrays, missiles, parked aircraft, personnel carriers, etc... the team would destroy their target(s) at long range, then move as quickly as possible out of the area.

Looking back at what was available, the first rifles developed for this use were designed around the .50 Browning Machine Gun cartridge in the early 1980's. While apparently nearing the end of its life as a heavy machine gun cartridge, the .50 BMG also left something to be desired in terms of accuracy and ballistic performance for precision work. Partially because of the interest in this particular application, new loads for the .50 BMG were developed, giving the cartridge a new lease on life. The Barrett Model 82A1 was the first rifle of its type to be officially adopted by a military.

Further development was taken on by many companies, Steyr of Austria being particularly notable. Steyr began development of a heavy rifle firing a sabotted 15.2mm projectile. Careful not to call their new rifle a "sniper rifle" because of its purpose, the project was called AMR 5075 for "anti-matériel rifle" in the late 1980's. The term made its way around the industry, and was eventually adopted as an unofficial designation for any especially heavy, long range rifle.

Click here to view Anti-Matériel Rifle Cartridges

4.73x33mm DM11

select a cartridge

SHADOWRUN AND FIREARMS

4.73x33mm DM11 (HK Caseless)

Weapon Type	Base Damage Code
Assault Rifle	9M

Primary Bullet: FMJ-BT	Case: None; HITP Compund	Reload: No
Bullet Mass (gr): 50	Case Length (in/mm): 1.299/33	Count/Box: 50
Velocity (fps): 3050	Primer: Centerfire, Booster	Conceal/Box: 5

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	8 ¥
Light Armor Piercing, Boat Tail	-1 power, x0.5 Armor	15 ¥
Tracer	Tracer	+20 ¥/box

Description

The DM11 caseless cartridge is the end result of almost 20 years of developmental work begun by Heckler & Koch in 1969 for the G11 rifle project.

More information on this round can be found here.
More info on the G11 project can be found at HKPRO.

7.62x25mm DE8025 (.30 ADM)

Weapon Type	Base Damage Code
Medium Pistol	6M
Submachine Gun	7M
Light Carbine	7M

Primary Bullet: FMJ-BT	Case: None; HITP Compound	Reload: No
Bullet Mass (gr): 155	Case Length (in/mm): 0.984/25	Count/Box: 50
Velocity (fps): 1050	Primer: Centerfire, Booster	Conceal/Box: 5

Suppression: +6 modifier to Perception Tests.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	10 ¥
Light Armor Piercing	x0.75 Armor + Match	25 ¥
Ballistic Tip, Expanding	Hollowpoint + Match	35 ¥
Tracer	Tracer	+30 ¥/box

Description (Fictional)

The 7.62x25mm Caseless, or .30 ADM as it is sometimes known, was developed by German weapons designer Christian Auf der Maur for what eventually became the SKSM P-61 pistol.

This is a subsonic caseless cartridge for the integrally suppressed SKSM P-61 pistol, designed for clandestine operations.

10x24mm M309LP (10x24mm HK Short Caseless)

Weapon Type	Base Damage Code
Heavy Pistol	9M
Submachine Gun	9M
Light Carbine	10M

Primary Bullet: FMJ	Case: None; HITP Compound	Reload: No
Bullet Mass (gr): 210	Case Length (in/mm): 0.99/25	Count/Box: 50
Velocity (fps): 1200	Primer: Electronic, Booster	Conceal/Box: 8

Suppression: Velocity Control rules apply. -3 Power.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	8 ¥
Jacketed Hollow Point	Expanding	9 ¥
Expanding Full Metal Jacket	Expanding	10 ¥
M309LP Light Armor Piercing	-1 Armor Rating	30 ¥
Explosive (PIE)	+1 Power	55 ¥
M309 High Pressure Explosive (PIE)	12S +1 Power	?

Description (Fictional)

This cartridge originated from the M41A Pulse Rifle in the movie *Aliens*.

I've toned this cartridge down a bit because in reality it would be more of a pistol round than a rifle round. The "LP" stands for Low Pressure.

The *Aliens: Colonial Marines Technical Manual* states that 210 grain explosive tipped bullet is fired at 840 meters per second (2755 fps) from the M41A, which weighs 4.9kg (10.8 lbs) fully loaded. That's a very heavy rifle and whole lot of recoil for an automatic weapon.

10x28mm M250 (10x28mm HK Long Caseless)

Weapon Type	Base Damage Code
Heavy Machine Gun	12D

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 230	Case Length (in/mm): 1.1/28	Count/Box: 50
Velocity (fps): 3200 (est.)	Primer: Electronic, Booster	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
M250 Explosive (FEX)	Regular	10 ¥

Description (Fictional)

This cartridge originated from the M56 Smart Gun in the movie *Aliens*.

Ballistics listed put this cartridge up pretty high on the energy scale at 5230 fpe at the muzzle. That's a whole lot of kinetic energy. More than enough to drop a charging elephant in its tracks. Then you've got the explosives...

5.45x18mm Soviet

Weapon Type	Base Damage Code
Hold-Out	6L
Light Pistol	6L

Primary Bullet: AP	Case: Rimless, Straight	Reload: No
Bullet Mass (gr): 40	Case Length (in/mm): 0.71/18	Count/Box: 100
Velocity (fps): 1035	Primer: Centerfire, Berdan	Conceal/Box: 8

Suppression: +6 to Perception Tests involving a suppressed weapon firing this cartridge.

Payloads Available	Effect	Cost / 100
Armor Piercing	-1 Armor Rating	8 ¥
Full Metal Jacket	Regular	5 ¥

Description
A bottlenecked automatic cartridge designed for the Soviet PSM pistol in the 1970's.

The specially designed bullet (steel tip/lead filler) has been reported to produce limited armor-piercing effects against certain types of light body armor.

.25 Automatic (.25 ACP, 6.35mm Browning)

Weapon Type	Base Damage Code
Hold-Out	4L
Light Pistol	4L

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 45-50	Case Length (in/mm): 0.62/15.75	Count/Box: 50
Velocity (fps): 810-760	Primer: Centerfire, Boxer, SP	Conceal/Box: 9

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	8 ¥
Jacketed Hollowpoint	Hollowpoint Rules	8 ¥
Frangible	Flechette Rules	110 ¥

Description
Designed by John Moses Browning and introduced in 1908 by Colt as a light self-defense round for small a pocket automatic pistol, also developed by John Browning.

The .25 ACP is generally considered to be underpowered for a self-defense weapon, but its small size can be an advantage in a very small hold-out pistol. Accuracy makes a big difference.

.32 Automatic (7.65mm Browning)

Weapon Type	Base Damage Code
Hold-Out	5L
Light Pistol	6L

Primary Bullet: FMJ	Case: Semi-rimmed, Straight	Reload: Yes
Bullet Mass (gr): 60-71	Case Length (in/mm): 0.68/17.3	Count/Box: 50
Velocity (fps): 970-800	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Jacketed Hollowpoint	Hollowpoint Rules	10 ¥
Frangible	Flechette Rules	135 ¥

Description
A semi-rimmed automatic pistol cartridge developed by John Browning in 1899.

The .32 Auto is commonly considered to be the absolute least powerful cartridge adequate for self-defense. Still a popular cartridge in small hold-out pistols.

9mm Makarov (9x18mm Russian Makarov)

Weapon Type	Base Damage Code
Hold-Out	4M
Light Pistol	5M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 90-100	Case Length (in/mm): 0.71/18	Count/Box: 50
Velocity (fps): 1060-885	Primer: Centerfire, Berdan	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	12 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	15 ¥
Frangible	Flechette Rules	135 ¥

Description
A rimless pistol cartridge developed in 1946 by Nikolai Makarov. The Makarov automatic pistol was accepted for use by Soviet military forces in 1951.

This round is considered adequate for self-defense, but should not be confused with the more powerful 9mm Parabellum.

.380 Automatic (.380 ACP, 9x17mm, 9mm Kurz, 9mm Short)

Weapon Type	Base Damage Code
Hold-Out	4M
Light Pistol	5M
Submachine Gun	5M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 85-95	Case Length (in/mm): 0.67/17	Count/Box: 50
Velocity (fps): 900-1000	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥

Description
The .380 Auto is a light automatic pistol cartridge, and yet another popular design by firearms genius John Browning.

This cartridge is common on both sides of the Atlantic. First offered by Colt in the early 1900's with their popular pocket pistols, and later in more famous designs, the Wather PP and PPK.

.22 Long Rifle

Weapon Type	Base Damage Code
Hold-Out	4L
Light Revolver/Pistol	5L
Sport Rifle	5M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 29-42	Case Length (in/mm): .595/15.1	Count/Box: 500
Velocity (fps): 1680-1220	Primer: Rimfire	Conceal/Box: 4

Suppression: Velocity control rules apply. +6 to Perception Tests involving a suppressed weapon firing this cartridge.

Additional: Though this cartridge is rimmed, it is used in some light automatic pistols designs such as the Ruger Mark II and the Browning Buck Mark.

Payloads Available	Effect	Cost / 500
Round Nosed Lead	Regular	8 ¥
Wadcutter/Semi-wadcutter	Regular	8 ¥
Lead Hollowpoint	Regular	8 ¥
+P (Hyper Velocity Hollowpoint)	+1 Power	9 ¥
Tracer	Tracer rules	+5 ¥/box
Subsonic Lead Hollowpoint	-1 Power	8 ¥

Description
A very light, small and handy rimfire cartridge used mostly for casual plinking and varmint hunting in many weapon types. Bullet diameter is .223".

Not an adequate choice for a self-defense weapon, but its small size can pack a nasty suprise in a very small hold-out pistol.

When someone says "I've got a .22," more often than not they mean a gun that fires this cartridge.

.32 Harrington & Richardson Magnum (.32 H&R Magnum)

Weapon Type	Base Damage Code
Hold-Out	5L
Light Revolver	5M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 85-95	Case Length (in/mm): 1.08/27.4	Count/Box: 50
Velocity (fps): 1100-815	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Frangible	Flechette Rules	140 ¥

Description
The .32 H&R Magnum is the result of a joint development by Federal Cartridge Company and Harrington & Richardson, who made the revolvers. It consists of the .32 S&W Long case lengthened to 1.08". Bullet diameter is .312".

Revolvers chambered for this cartridge will also fire .32 S&W and .32 S&W Long cartridges. This is a somewhat popular chambering for small hold-out revolvers.

.357 Magnum

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Revolver	9M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 110-180	Case Length (in/mm): 1.29/32.7	Count/Box: 50
Velocity (fps): 1500-1090	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Soft Armor Piercing	-2 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic Jacketed Hollowpoint (VC)	Hollowpoint Rules -1 Power	8 ¥

Description
A very powerful and accurate rimmed revolver cartridge with a long history and well-deserved respect. Introduced by Smith & Wesson in 1935.

The .357 Magnum is considered a standard revolver self-defense cartridge, and is used commonly in long range handgun competitions.

Weapons chambered for the .357 Magnum may also fire the .38 Special cartridge with no modification.

.38 Special

Weapon Type	Base Damage Code
Hold-Out	4M
Light Revolver	5M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 110-200	Case Length (in/mm): 1.16/29.4	Count/Box: 50
Velocity (fps): 1000-730	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver Cartridge. No adverse effects.

Additional: This cartridge can also be fired from .357 Magnum revolvers.

Payloads Available	Effect	Cost / 50
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
+P (Full Metal Jacket)	+1 Power, -1 Armor Rating	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥

Description
A very accurate rimmed revolver cartridge with a long history and well-deserved respect. Developed by Smith & Wesson in 1902. Bullet diameter is .357".

The .38 Special is considered a standard revolver self-defense cartridge, and is used commonly in handgun competitions.

.41 Magnum

Weapon Type	Base Damage Code
Heavy Revolver	9M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 170-210	Case Length (in/mm): 1.28/32.5	Count/Box: 20
Velocity (fps): 1400-965	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
+P (Full Metal Jacket)	+1 Power	20 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	25 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	15 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	18 ¥

Description
Introduced in 1964 by Remington to coincide with the introduction of Smith & Wesson's Model 57 revolver.

Though the popularity of this cartridge has declined over the years, it is still a perfectly capable medium game handgun hunting load, and a more than adequate self-defense load.

.44 Special

Weapon Type	Base Damage Code
Medium Revolver	8M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 180-246	Case Length (in/mm): 1.16/29.4	Count/Box: 20
Velocity (fps): 1035-750	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Additional: This cartridge can also be fired from .44 Magnum revolvers.

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	14 ¥
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	20 ¥
Wadcutter/Semi-wadcutter	Regular	14 ¥
+P (Full Metal Jacket)	+1 Power	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	25 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	155 ¥

Description
A moderately powerful and accurate rimmed revolver cartridge Introduced by Smith & Wesson in 1907. Bullet diameter is .429".

The .44 Special is usually subloaded by factories, but handloading can bring this cartridge up to nearly the equal of the .44 Magnum (+P, 9M). It is completely adequate as a self-defense cartridge, and is used commonly in handgun competitions.

.44 Magnum

Weapon Type	Base Damage Code
Heavy Revolver	10M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 180-250	Case Length (in/mm): 1.28/32.5	Count/Box: 20
Velocity (fps): 1500-1180	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: No.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	14 ¥
Hard Cast Lead	Regular	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	25 ¥
Wadcutter/Semi-wadcutter	Regular	15 ¥
Reverse Ogive	Reverse Ogive Rules	25 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	160 ¥

Description
Considered the premier heavy revolver cartridge by many, the .44 Magnum is a standard by which all others are judged. Introduced by Remington in 1955. Bullet diameter is .429".

Popularized by Clint Eastwood's *Dirty Harry* movies, the .44 Magnum was considered the world's most powerful commercial handgun cartridge for some time.

The .44 Magnum is considered to be far too powerful for self-defense purposes. However, it is commonly used as a handgun hunting cartridge and in long range handgun competitions.

.45 Colt

Weapon Type	Base Damage Code
Heavy Revolver	8M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 185-255	Case Length (in/mm): 1.29/32.7	Count/Box: 20
Velocity (fps): 1100-800	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Additional: This cartridge can also be fired from .454 Casull revolvers.

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	13 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
+P, (Full Metal Jacket)	+1 Power, -1 Armor Rating	18 ¥
+P, (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Frangible	Flechette Rules	155 ¥

Description
Originally a blackpowder cartridge, the .45 Colt was introduced in 1873 for use in Colt's famous "Peacemaker" revolver. Bullet diameter is .454".

Known as "the cartridge that tamed the west," the modern smokeless powder version of the .45 Colt is a heavy rimmed revolver cartridge readily adequate for self-defense use and beyond.

Heavily loaded smokeless powder versions (+P) of the .45 Colt are not suitable for use in the older blackpowder pistols, and could lead to serious injury if used.

.454 Casull

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 240-300	Case Length (in/mm): 1.39/35.3	Count/Box: 20
Velocity (fps): 1915-1355	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Jacketed Hollowpoint	Hollowpoint Rules	30 ¥
Jacketed Soft Point	Hollowpoint Rules	30 ¥
Hard Cast Lead Flat Point	Regular	30 ¥

Description
Developed by Dick Casull and Jack Fulmer in 1957, and originally introduced under the name .454 Mangum Revolver.

Known as one of the world's most powerful handgun cartridges, the .454 Casull is capabable of reaching energy levels very close to 2000 foot-pounds at the muzzle.

.475 Linebaugh

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 370-440	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 1495-1000	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity Control rules apply.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	30 ¥
Jacketed Soft Point	Hollowpoint Rules	30 ¥
Jacketed Hollowpoint	Hollowpoint Rules	40 ¥

Description
Developed by John Linebaugh in 1988. This is another contender for the "world's most powerful handgun cartridge."

The .475 Linebaugh is based off of the .45-70 Government case, cut to 1.5" and reamed to accept .475" bullets up to 440 grains. Boom.

.500 Linebaugh

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 400-500	Case Length (in/mm): 1.405/35.7	Count/Box: 20
Velocity (fps): 1320-1250	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	30 ¥
Jacketed Soft Point	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥

Description
Another development of John Linebaugh, and yet another contender for the "world's most powerful handgun cartridge."

The .500 Linebaugh is based off of the .348 Winchester case, cut to 1.405" and reamed to accept .510" bullets of up to 500 grains. KA-BLAM.

.500 Smith & Wesson Magnum

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 275-440	Case Length (in/mm): 1.625/41.2	Count/Box: 20
Velocity (fps): 1665-1625	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional: +3 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	60 ¥
Jacketed Soft Point	Hollowpoint Rules	60 ¥
Jacketed Hollowpoint	Hollowpoint Rules	58 ¥

Description
Developed as a joint venture between Smith & Wesson (who designed and built the revolvers) and Peter Pi's Cor-Bon, who developed the ammunition, the .500 Magnum was announced at the 2003 SHOT Show. The S&W Model 500 was then crowned the most powerful production revolver in existence.

7.62mm Tokarev (7.62x25mm Russian Tokarev)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	6M
Machine Pistol	6M
Submachine Gun	7M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 87	Case Length (in/mm): 0.97/24.6	Count/Box: 50
Velocity (fps): 1390	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Full Metal Jacket +P	+1 Power	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
APDS	-35%/10%	35 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

A bottlenecked centerfire cartridge which was developed in 1930 by Fedor Tokarev for the Russian TT33 automatic pistol.

The 7.62mm Tokarev is adequate for self-defense, though it is sometimes considered a bit light for military use. A hotter version of this cartridge was developed in Czechoslovakia in the early 1950's.

Very common in Russia and former Warsaw Pact nations.

.30 Mauser (7.63x25mm Mauser)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	6M
Machine Pistol	6M
Submachine Gun	7M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 86	Case Length (in/mm): 0.99/25.1	Count/Box: 50
Velocity (fps): 1160-1440	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	10 ¥
Full Metal Jacket +P	+1 Power	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
APDS	-35%/10%	35 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

Hugo Borchardt developed a relatively light load of the .30 Mauser to go along with his automatic pistol; the first in the world to see commercial success. Both were produced by Ludwig Loewe & Co. (later DWM) in 1893.

Identical to the 7.62mm Tokarev in measurement and performance, the .30 Mauser is the Tokarev's senior by nearly 40 years.

9mm Parabellum (9x19mm Luger, 9mm NATO)

Weapon Type	Base Damage Code
Hold-Out	5M
Medium Pistol	7M
Machine Pistol	7M
Submachine Gun	8M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 100-147	Case Length (in/mm): 0.75/19	Count/Box: 50
Velocity (fps): 1300-975	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Full Metal Jacket +P/+P+	+1 Power	18 ¥
Jacketed Hollowpoint +P/+P+	HP Rules +1 Power	20 ¥
SJESC (Light Armor Piercing)	-25% Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

"Prepare for war." The standard 9mm round popularized by gangsta rappers everywhere.

Developed in 1902 for the famous Luger automatic pistol, this round is still a very popular, even standard automatic self-defense cartridge. In 1985 it was adopted as the standard handgun cartridge of the US Military for the M9 (Beretta 92FS) pistol.

The 9mm Parabellum is one of the most common cartridges of any kind throughout the world.

Use this data for the **9x21mm IMI** cartridge. Case length is .83"/21mm.

.38 Super Automatic (.38 Super)

Weapon Type	Base Damage Code
Hold-Out	6M
Medium Pistol	8M

Primary Bullet: FMJ	Case: Semi-rimmed, Straight	Reload: Yes
Bullet Mass (gr): 115-130	Case Length (in/mm): 0.90/22.86	Count/Box: 50
Velocity (fps): 1300-1150	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

A moderately powerful semi-rimmed automatic cartridge developed by Colt in 1929.

The .38 Super is more commonly found in pistol competitions than anywhere else. It is mostly available in Colt-manufactured handguns. It is very adequate for self-defense purposes.

.40 Smith & Wesson (.40 S&W)

Weapon Type	Base Damage Code
Hold-Out	6M
Medium Pistol	8M
Submachine Gun	9M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.85/21.5	Count/Box: 50
Velocity (fps): 1325-905	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

The .40 S&W came about in 1990. The FBI was using a sub-loaded version of the 10mm Auto as its standard field cartridge. Smith & Wesson realized that those ballistics could be achieved with a shorter case, allowing for a more comfortable grip in the FBI's issued automatic pistols, which Smith & Wesson also provided.

The .40 S&W is a very popular self-defense cartridge, and can be swapped with the .357 SIG by replacing just the barrel.

.45 ACP (.45 Automatic Colt Pistol)

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	8M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 165-230	Case Length (in/mm): 0.898/22.8	Count/Box: 50
Velocity (fps): 1140-855	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply for +P ammunition.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
+P (Full Metal Jacket)	+1 Power	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Explosive	+1 Power	115 ¥
Frangible	Flechette Rules	140 ¥

Description

Introduced in 1905 by John Browning, the .45 Automatic Colt Pistol has been an American standard for 95 years to date, and will probably continue to be for many years to come.

Adopted by the United States Ordnance Department along with the Colt 1911 automatic pistol, the .45 ACP was the primary military handgun cartridge for 74 years until it was replaced by the 9mm Parabellum/M9 pistol in 1985.

The ultimate in self-defense cartridges, and very easy to suppress as well.

.45 GAP (.45 Glock Automatic Pistol)

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	8M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 165-230	Case Length (in/mm): 0.755/19.1	Count/Box: 50
Velocity (fps): 1050-755	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply for +P ammunition.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Explosive	+1 Power	115 ¥
Frangible	Flechette Rules	140 ¥

Description

Introduced in 2003 as a joint project between Glock, who developed the gun, and Speer, who developed the cartridge.

The idea behind the .45 GAP was to create a cartridge capable of .45 ACP ballistics that could be used in the Glock 17 frame. Making slight changes to the .45 ACP case in order to safely contain the higher pressures generated in the shorter case, it seems that Glock and Speer have succeeded in creating another marketable .45 handgun cartridge.

9x23mm Winchester

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 124	Case Length (in/mm): 0.90/23	Count/Box: 50
Velocity (fps): 1460	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

Developed by Winchester for IPSC competition in the mid 1990's, the 9x23mm was an attempt to create the lightest recoiling load that will qualify for "Major Power Factor" under IPSC rules.

Having a lengthened and strengthened 9mm Parabellum case, the 9x23mm doesn't do much that the .357 SIG hasn't already accomplished. It can however be chambered in some 9mm Para weapons with only a new barrel, magazine and recoil spring.

.357 SIG

Weapon Type	Base Damage Code
Hold-Out	6M
Heavy Pistol	9M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 90-147	Case Length (in/mm): 0.865/22	Count/Box: 50
Velocity (fps): 1725-1170	Primer: Centerfire, Boxer, SP	Conceal/Box: 6

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Additional: Suppression is much easier with the .40 S&W. Weapons firing the .357 SIG can be converted to fire the .40 S&W with only a change of barrels.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Light Armor Piercing	x0.75 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

A very powerful and accurate, necked pistol cartridge designed to match the ballistics of the .357 Magnum's 125 grain bullet load from a pistol with a 4" barrel. Developed by SIG in 1994.

The .357 SIG is actually more of an enhanced 9mm Parabellum than an "automatic .357", as it is commonly marketed. It uses a .40 S&W case necked down to accept .355" (9mm) bullets.

Any weapon firing the .40 S&W cartridge can be converted to fire the .357 SIG by replacing just the barrel, and vice versa.

10mm Automatic (10x25mm Norma, Centimeter)

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Pistol	9M
Submachine Gun	9M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.99/25	Count/Box: 50
Velocity (fps): 1360-950	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Soft Armor Piercing	-1 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

A powerful rimless automatic cartridge introduced in 1983 for the Bren Ten combat pistol. Developed by a small California firm under the direction of Jeff Cooper and designed as a more powerful alternative to the .45 ACP.

Though this cartridge has lost favor due to the advent of the .40 S&W, its attractions cannot be discounted. The 10mm Auto is capable of ballistics far beyond the capabilities of the .40 S&W, but due to its relatively heavy recoil, it is probably better suited in a submachine gun than a pistol at these loadings.

.400 COR-BON

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Pistol	9M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.90/22.86	Count/Box: 50
Velocity (fps): 1450-1250	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	18 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	15 ¥

Description

Developed by COR-BON president Peter Pi in 1996, the .400 COR-BON consists of a .45 ACP case necked down to a .40 caliber bullet. With a bullet of the same weight, this combination produces velocities in excess of anything the .40 S&W and 10mm Auto cartridges are capable of.

Any weapon designed to fire the .45 ACP can be modified to fire the .400 COR-BON by swapping just the barrel.

.40 Super

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Pistol	10M

Primary Bullet: JHP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 135-200	Case Length (in/mm): 0.984/25	Count/Box: 50
Velocity (fps): 1800-1300	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply. Most pistols designed to fire this cartridge will fail to cycle ammunition loaded to subsonic velocities.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	18 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power	12 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -2 Power	15 ¥

Description

The .40 Super is an offshoot of the .45 Super, and was developed by Triton Ammunition in 1996. It is intended as a silhouette competition round.

The .40 Super essentially consists of a .45 Super case lengthened to 25mm and necked to accept a .400" bullet. This launches the .40 Super into the .41 Magnum range, in terms of ballistic potential.

Any weapon designed to fire the .45 Super can be modified to fire the .40 Super by swapping just the barrel.

.44 Auto Mag (.44 Automatic Magnum)

Weapon Type	Base Damage Code
Heavy Pistol	10M

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 180-300	Case Length (in/mm): 1.29/33	Count/Box: 20
Velocity (fps): 1610-950	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: Velocity Control rules apply.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Soft Armor Piercing	-2 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Explosive	+1 Power	120 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	50 ¥

Description

Developed by Harry Sanford of AMT and introduced in 1973 for the AMT Auto Mag pistol, in an attempt to bring .44 Magnum ballistics to an automatic pistol design.

Also popularized by Clint Eastwood's *Dirty Harry Callahan* in the movie *Sudden Impact*, the .44 Auto Mag is fully the equal of the .44 Magnum.

The .44 Auto Mag is considered to be far too powerful for self-defense purposes. Though with the consideration of some metahuman races, this cartridge could easily make a comeback.

.440 COR-BON Magnum

Weapon Type	Base Damage Code
Heavy Pistol	10S

Primary Bullet: JHP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 240-300	Case Length (in/mm): 1.285/32.6	Count/Box: 20
Velocity (fps): 1610-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: No.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Expanding Full Metal Jacket	Hollowpoint Rules	30 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥
Soft Point, Bonded Core	Hollowpoint Rules	35 ¥
Round Nosed Solid	-2 Armor Rating	30 ¥
Explosive	+1 Power	90 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	50 ¥

Description

Another development of COR-BON president Peter Pi, the .440 COR-BON Magnum consists of a .50 Action Express case necked down to a .44 caliber bullet. This combination produces velocities, energy and ranges in excess of anything the .50 Action Express or .44 Magnum are capable of.

Any weapon designed to fire the .50 Action Express can be modified to fire the .440 COR-BON Magnum by swapping just the barrel.

.45 Super

Weapon Type	Base Damage Code
Hold Out	7M
Heavy Pistol	9M
Submachine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 185-230	Case Length (in/mm): 0.898/22.8	Count/Box: 50
Velocity (fps): 1450-1200	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: This cartridge is inherently supersonic. Velocity Control rules apply. Most pistols designed to fire this cartridge will fail to cycle ammunition loaded to subsonic velocities.

Additional: +1 Recoil Modifier. Can be fired from .45 ACP pistols with fully supported chambers (this excludes many M1911 variants), but requires a heavy recoil spring to cycle ammunition properly. A pistol modified or designed to use the .45 Super cannot reliably cycle standard .45 ACP loads, though most can fire .45 ACP +P ammunition without problems.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	20 ¥
Frangible	Flechette Rules	160 ¥
Explosive	+1 Power	115 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	75 ¥

Description

Introduced in 1994 by Ace Custom .45's, Inc., the .45 Super can be called a ".45 ACP on steroids."

Designed as a practical magnum load for any .45 ACP pistol, the .45 Super is dimensionally identical to the .45 ACP. Through the use of a thicker case, the .45 Super allows almost any pistol chambered in .45 ACP to fire bullets at velocities far beyond what the .45 ACP can safely provide, with only the change of a heavier recoil spring.

This higher velocity comes at the price of heavier recoil.

.45 Winchester Magnum (.45 Win Mag)

Weapon Type	Base Damage Code
Heavy Pistol	11M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 185-260	Case Length (in/mm): 1.198/30.4	Count/Box: 20
Velocity (fps): 1850-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 9

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	20 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	25 ¥
Jacketed Hollowpoint	Hollowpoint Rules	30 ¥
Explosive	+1 Power	120 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	100 ¥

Description

Introduced in 1979 by Winchester. This cartridge has been adopted as a standard chambering for the Thompson/Center Contender competition pistols. There have been a number of semi-automatic pistols developed for use with this cartridge, notably the Wildey Magnum and the LAR Grizzly.

.475 Wildey Magnum

Weapon Type	Base Damage Code
Heavy Pistol	10S

Primary Bullet: JSP	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 250-300	Case Length (in/mm): 1.295/32.8	Count/Box: 20
Velocity (fps): 1850-1610	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	25 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	40 ¥
Explosive	+1 Power	140 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	120 ¥

Description

Gun maker and wildcat cartridge designer Wildey Moore introduced this cartridge for use in a gas-operated semi-automatic pistol also of his own construction.

The .475 Wildey Magnum is one of the most powerful handgun cartridges on earth. It was featured in the movie *Death Wish III*.

.50 Action Express

Weapon Type	Base Damage Code
Heavy Pistol	9S

Primary Bullet: JHP	Case: Rebated, Straight	Reload: Yes
Bullet Mass (gr): 300-325	Case Length (in/mm): 1.285/32.6	Count/Box: 20
Velocity (fps): 1580-1400	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: No.

Additional +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	25 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥
Reverse Ogive	Reverse Ogive Rules	40 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Explosive	+1 Power	140 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	120 ¥

Description

Introduced in 1988 by Action Arms president Evan Whildin as a product improvment for the IMI Desert Eagle automatic pistol.

The .50AE uses a rebated rim of the same diameter as the .44 Magnum. It also has the same case length and overall length. This means that in order to fire the .50AE, the only changes that need to be made to a Desert Eagle chambered in .44 Magnum are a new .50AE barrel and magazine.

4.6x30mm HK MP7

Weapon Type	Base Damage Code
Medium Pistol	5M
Submachine Gun	5M
Light Carbine	5M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 25	Case Length (in/mm): 1.18/30	Count/Box: 100
Velocity (fps): 2380	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Additional Info: Because of this cartridge's velocity, FMJ ammunition automatically receives a x0.75 Armor Rating modifier. This modifier does not apply to frangible or deformation loads.

Payloads Available	Effect	Cost/100
Full Metal Jacket	x0.75 Armor Rating	30 ¥
Armor Piercing	x0.5 Armor Rating	35 ¥
Frangible	+1 Power, 2x BallisticAR	35 ¥
Deformation	+1 Power, 1.5x BallisticAR	30 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed to compete directly with Fabrique Nationale's P90 Personal Defense Weapon, the Heckler & Koch MP7 was developed during the 1990's and announced officially in 2001.

Like the 5.7x28mm FN cartridge, the 4.6x30 HK is essentially a small rifle cartridge with a copper-jacketed steel bullet that exhibits improved body armor penetration capabilities at ranges up to 200 meters.

5.7x28mm FN P90

Weapon Type	Base Damage Code
Medium Pistol	5M
Submachine Gun	6M
Light Carbine	6M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 32-55	Case Length (in/mm): 1.10/28	Count/Box: 100
Velocity (fps): 2345-985	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: Velocity Control rules apply. -3 Power.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost/100
Full Metal Jacket Boat Tail (FMJ-BT)	x0.75 Armor Rating	30 ¥
Light Armor Piercing	x0.5 Armor Rating	40 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power, -1 DL	45 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed in the late 1980's by Fabrique Nationale for the P90 Personal Defense Weapon. Designed to replace the 9mm Parabellum.

Essentially a small rifle cartridge with a copper-jacketed steel/aluminum bullet, the 5.7x28mm exhibits improved body armor penetration capabilities at ranges up to 200 meters.

.30 Carbine

Weapon Type	Base Damage Code
Heavy Revolver	9M
Light Carbine	10M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 85-110	Case Length (in/mm): 1.29/32.7	Count/Box: 50
Velocity (fps): 2460-1900	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost/50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	35 ¥
Frangible	Flechette Rules	140 ¥
Subsonic Jacketed Hollowpoint (VC)	Hollowpoint Rules -1 Power	30 ¥
Tracer	Tracer	+30 ¥/box

Description

The .30 Carbine was developed by Winchester during WWII for a weapon intended to fill the gap between a rifle and a handgun. The result was the M1 Carbine.

The .30 Carbine cartridge has since been chambered in some revolvers. This is a relatively simple procedure because the .30 Carbine case is the same length as the .357 Magnum's.

When using any rifle cartridge, apply a **standard x0.75 Armor Code rating** unless stated otherwise.

5.45x39mm Soviet M74 (5.45x39mm Russian)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 52	Case Length (in/mm): 1.535/39	Count/Box: 50
Velocity (fps): 2950	Primer: Centerfire, Berdan, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	12 ¥
Light Armor Piercing	x0.5 Armor	25 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	12 ¥
Tracer	Tracer	+30 ¥/box

Description

The standard Russian assault rifle cartridge introduced in 1974 in the AK-74.

The bullet is almost 1" long and is composed of a mild steel core with a lead filler, and air space in the nose. The causes the bullet to tumble on impact, causing a severe wound.

Though this round does not have quite the energy of the 5.56mm NATO, it does have a comparable wounding effect.

5.56x45mm NATO (.223 Remington)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.77/45	Count/Box: 50
Velocity (fps): 3300-2870	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Light Armor Piercing	x0.5 Armor	30 ¥
Ballistic Tip	Hollowpoint + Match	18 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed by Bob Hutton for Eugene Stoner's AR-15 rifle, which was adopted by the US military in 1964 as the M-16. The cartridge was introduced commercially shortly thereafter by Remington as the .223 Remington. Adopted by NATO in 1982 after a slight redesign.

This round was adopted in order to increase hit probability at a range of about 500 meters. It accomplishes that job well, though the round does have its detractors.

More...

5.8x42mm Chinese Type 95

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 65	Case Length (in/mm): 1.65/42	Count/Box: 50
Velocity (fps): 3180	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Light Armor Piercing	x0.5 Armor	30 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

This cartridge first appeared in the Chinese QBZ95 bullpup assault rifle in 1995.

Relatively little is known about the 5.8x42mm outside of China. It would appear to have all the properties necessary to outperform all previous assault rifle cartridges in terms of exterior ballistics and possibly terminal ballistics as well.

6x48mm Optimum

Weapon Type	Base Damage Code
Carbine	7S
Assault Rifle	8S
Sport Rifle	8S
Sniper Rifle	8S
Light Machine Gun	8S

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 85-100	Case Length (in/mm): 1.88/48	Count/Box: 50
Velocity (fps): 3150-2900	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	16 ¥
Light Armor Piercing	x0.5 Armor	35 ¥
Polymer Tip Boat Tail	Hollowpoint, Match	16 ¥
Subsonic HPBT (Velocity Controlled)	-3 Power, no armor bonus	16 ¥
Tracer	Tracer	+30 ¥/box

Description

This cartridge was created by militaria and firearm journalist Stan Crist, "to provide a single, relatively lightweight round that can be used in the standard infantry rifle, sniper rifle, and machine gun, thereby simplifying logistics."

Ballistically, the 6mm Optimum falls between the 5.56x45mm and 7.62x51mm cartridges. It retains many ballistic qualities of the 7.62x51mm, while reducing recoil to a more manageable level.

6.8x43mm Special Purpose Cartridge (6.8mm SPC)

Weapon Type	Base Damage Code
Carbine	9M
Assault Rifle	10M
Light Machine Gun	10M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 115	Case Length (in/mm): 1.69/43	Count/Box: 50
Velocity (fps): 2650	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	16 ¥
Light Armor Piercing	x0.5 Armor	35 ¥
Polymer Tip Boat Tail	Hollowpoint, Match	16 ¥
Subsonic HPBT (Velocity Controlled)	-3 Power, no armor bonus	16 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed jointly by Remington and the US Military in order to provide users of the M16/M4 platform rifles with enhanced ballistic performance.

Data collected after firefights throughout the 1980s and 1990s suggested that common loads for the 5.56x45mm were not doing the trick they were supposed to. The 6.8x43mm is an attempt at improving ballistic performance with the caveat of fitting the cartridge into an existing action.

7.62x39mm Soviet M43 (7.62x39mm Russian)

Weapon Type	Base Damage Code
Carbine	9M
Assault Rifle	9M
Sport Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 110-150	Case Length (in/mm): 1.535/39	Count/Box: 50
Velocity (fps): 2500-2100	Primer: Centerfire, Berdan, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	18 ¥
Light Armor Piercing	x0.5 Armor Rating	35 ¥
Armor Piercing Discarding Sabot	x0.25 Armor Rating	45 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-2 Power, no armor bonus	18 ¥
Tracer	Tracer	+30 ¥/box

Description

The standard Russian assault rifle cartridge introduced in 1943 for use in the SKS semi-automatic rifle. It was replaced 1974 by the 5.45x39mm and the AK-74.

Still in use due to the sheer number of rifles manufactured in this caliber, the 7.62x39mm Soviet and rifles that fire it are available almost anywhere on the planet.

.22 Long Rifle

Weapon Class	Base Damage Code
Hold-Out	4L
Light Revolver/Pistol	5L
Sport Rifle	5M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: No
Bullet Mass (gr): 29-42	Case Length (in/mm): 0.595/15.1	Count/Box: 500
Velocity (fps): 1680-1220	Primer: Rimfire	Conceal/Box: 4

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable (+6 to Peception Tests).

Additional: Though this cartridge is rimmed, it is used in some light automatic pistols designs such as the Ruger Mark II and the Browning Buck Mark.

Payloads Available	Effect	Cost / 500
Round Nosed Lead	Regular	8 ¥
Wadcutter/Semi-wadcutter	Regular	8 ¥
Lead Hollow Point	Regular	8 ¥
+P (Hyper Velocity Hollow Point)	+1 Power	9 ¥
Subsonic Lead Hollow Point	-1 Power	8 ¥
Tracer	Tracer rules	+10 ¥/box

Description

A very light, small and handy rimfire cartridge introduced in 1887 and used mostly for casual plinking and varmint hunting in many different types of firearms. Bullet diameter is .223".

Not an adequate choice for a self-defense weapon, but its small size can pack a nasty suprise in a very small hold-out pistol.

When someone says "I've got a .22," more often than not they mean a gun that fires this cartridge.

.22 Hornet (5.6x35Rmm)

Weapon Class	Base Damage Code
Heavy Revolver	8M
Carbine	9M
Sport Rifle	9M

Primary Bullet: JSP	Case: Rimmed, Necked	Reload: Yes
Bullet Mass (gr): 40-55	Case Length (in/mm): 1.377/35	Count/Box: 50
Velocity (fps): 2700-2400	Primer: Centerfire, Boxer, SR	Conceal/Box: 6

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier with *non-expanding* bullet types.

Payloads Available	Effect	Cost / 50
Pointed Soft Point	Expanding	12 ¥
Flat Point	Expanding	12 ¥

Description

Developed during the 1920's at the Springfield Arsenal in Massachusetts, produced commercially by Winchester in the 1930's. Bullet diameter is .223".

The .22 Hornet was the pioneer small-bore high velocity cartridge. No other cartridge of this type has ever caught on as fast or achieved such widespread popularity.

.223 Remington (5.56x45mm NATO)

Weapon Class	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.77/45	Count/Box: 50
Velocity (fps): 3300-2870	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier with *non-expanding* bullet types.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Pointed Soft Point	Expanding	10 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Polymer Tip Boat Tail	Expanding + Match	18 ¥
Light Armor Piercing	-1 power, x0.5 Armor	30 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 8L	14 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 8L + Match	14 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed by Bob Hutton for Eugene Stoner's AR-15 rifle, which was adopted by the US military in 1964 as the M-16. The cartridge was introduced commercially shortly thereafter by Remington as the .223 Remington. Adopted by NATO in 1982 after a slight redesign. Bullet diameter is .224".

This round was adopted in order to increase hit probability at a range of about 500 meters. It accomplishes that job well, though the round does have its detractors.

More...

.22-250 Remington (.22 Varminter, .22 Wotkyns Original Swift)

Weapon Class	Base Damage Code
Carbine	9M
Sport Rifle	10M
Sniper Rifle	10M

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.912/48.5	Count/Box: 20
Velocity (fps): 4135-3200	Primer: Centerfire, SR	Conceal/Box: 5

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier with *non-expanding* bullet types.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Pointed Soft Point	Expanding	10 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Polymer Tip Boat Tail	Expanding + Match	18 ¥
Light Armor Piercing	-1 power, x0.5 Armor	30 ¥
Tracer	Tracer	+30 ¥/box

Description

This cartridge consist of the 250-300 Savage case necked down to accept .224" dimeter bullets, the same bullets as the .223 Remington (5.56x45mm NATO).

This is a very popular high velocity overbore cartridge used most often for long-range varmint hunting. It has seen limited use benchrest competition and police sharpshooting rifles.

.243 Winchester (6.16x52mm)

Weapon Class	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 58-105	Case Length (in/mm): 2.045/51.9	Count/Box: 20
Velocity (fps): 3750-2900	Primer: Centerfire, SR	Conceal/Box: 8

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier with *non-expanding* bullet types.

Payloads Available	Effect	Cost / 20
Hollow Point Boat Tail, Match	Match	18 ¥
Pointed Soft Point	Expanding	12 ¥
Polymer Tip Boat Tail	Expanding + Match	18 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 5M	14 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 5M + Match	14 ¥

Description

Introduced by Winchester in 1955, the .243 is the .308 Winchester case necked down to accept .243" (6mm) bullets.

Since its introduction, the .243 Winchester has become one of the most popular American hunting cartridges. It is well known for its versatility, used for anything from long range varmint hunting to deer to police sharpshooting.

25-06 Remington

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 75-120	Case Length (in/mm): 2.494/63.3	Count/Box: 20
Velocity (fps): 3500-2940	Primer: Centerfire, SR	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier with *non-expanding* bullet types.

Payloads Available	Effect	Cost / 20
Pointed Soft Point	Expanding	12 ¥
Polymer Tip Boat Tail	Expanding + Match	20 ¥

Description

Introduced by Remington in 1969, the 25-06 is based on the 30-06 case necked down to accept .257" bullets with no other changes.

The 25-06 is popular in North America for varmint and deer hunting. Bullets in .257" caliber are somewhat limited to hunting types.

6.5x55mm Swedish Mauser (6.5mm Swedish)

Weapon Class	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 85-160	Case Length (in/mm): 2.165/5.49	Count/Box: 20
Velocity (fps): 3100-2550	Primer: Centerfire, Boxer, SR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier.

Payloads Available	Effect	Cost/20
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	12 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Subsonic SP (Velocity Controlled)	-5 Power	12 ¥

Description

Another very versatile cartridge, the 6.5x55mm was adopted by the Swedish Army in 1894, and is still a very popular hunting and target shooting cartridge in Scandinavia and Europe.

Prior to WWII, it was it was almost unknown in North America. Low recoil and superb accuracy are the two main contributing factors to this cartridge's rise in popularity.

.260 Remington (6.5mm-08 A-Square)

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 100-160	Case Length (in/mm): 2.025/51.4	Count/Box: 20
Velocity (fps): 3335-2750	Primer: Centerfire, Boxer, SR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier.

Payloads Available	Effect	Cost/20
Hollow Point Boat Tail, Match	Match	12 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Pointed Soft Point	Expanding	12 ¥
Subsonic SP (Velocity Controlled)	-5 Power	12 ¥

Description

This cartridge was introduced by A-Square in 1996 as the 6.5-08. Remington introduced their version of the cartridge in 1999.

The .260 Remington fires the same .264" bullets as the 6.5x55mm Swedish, but has slightly more case capacity giving it a slight upper hand as far as ballistic performance is concerned.

.270 Winchester

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 90-160	Case Length (in/mm): 2.54/64.5	Count/Box: 20
Velocity (fps): 3500-2800	Primer: Centerfire, Boxer, SR	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier.

Payloads Available	Effect	Cost/20
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	12 ¥
Polymer Tip Boat Tail	Expanding + Match	20 ¥

Description

A very popular North American hunting cartridge, the .270 was introduced by Winchester in 1925 and developed a handsome following due mostly to gun writer Jack O'Connor.

This is another cartridge based on the 30-06 case, necked down to accept .277" bullets and lengthened to 2.54".

7x57mm Mauser (7mm Spanish Mauser)

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 100-175	Case Length (in/mm): 2.235/56.7	Count/Box: 20
Velocity (fps): 3300-2440	Primer: Centerfire, Boxer, SR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier.

Payloads Available	Effect	Cost/20
Pointed Soft Point	Expanding	12 ¥
Flat Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	12 ¥
Polymer Tip Boat Tail	Expanding + Match	20 ¥

Description

The 7x57mm was introduced in 1892 along with the Model 92 Mauser rifle, modified and used by Spain during the Spanish American War. Bullet diameter is .284".

The 7x57mm has been called one of the best all-around sporting cartridges available, despite its military genesis.

7mm-08 Remington

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: JSP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 100-175	Case Length (in/mm): 2.035/51.7	Count/Box: 20
Velocity (fps): 3000-2400	Primer: Centerfire, Boxer, SR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a +1 Target Number penalty at medium range, +2 at long and +3 at extreme range.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier.

Payloads Available	Effect	Cost/20
Pointed Soft Point	Expanding	12 ¥
Flat Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	12 ¥
Polymer Tip Boat Tail	Expanding + Match	20 ¥

Description

Introduced by Remington in 1980, the 7mm-08 Remington consists of the .308 Winchester case necked down to accept .284" bullets.

Due to a generally better aerodynamic shape, bullets of the same weight fired from the 7mm-08 have been known to outperform the .308 Winchester at longer ranges.

7mm Remington Magnum (7mm Rem Mag)

Weapon Class	Base Damage Code
Sport Rifle	11S
Sniper Rifle	11S

Primary Bullet: JSP	Case: Belted, Necked	Reload: Yes
Bullet Mass (gr): 85-160	Case Length (in/mm): 2.5/63.5	Count/Box: 20
Velocity (fps): 3100-2550	Primer: Centerfire, Boxer, LR	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost/20
Pointed Soft Point	Expanding	15 ¥
Flat Point	Expanding	15 ¥
Hollow Point Boat Tail, Match	Match	22 ¥
Polymer Tip Boat Tail	Expanding + Match	22 ¥

Description

The 7mm Remington Magnum was introduced by Remington along with their Model 700 bolt-action rifle in 1962. Both rifle and cartridge have become North American standards since. Bullet diameter is .284".

This is a very powerful overbore cartridge, known to be relatively tough on barrels. It is commonly used for long range deer/elk hunting, but has shown advantages when used for long range sniping.

30-30 Winchester

Weapon Class	Base Damage Code
Carbine	8S
Sport Rifle	8S

Primary Bullet: JFP	Case: Rimmed, Necked	Reload: Yes
Bullet Mass (gr): 100-170	Case Length (in/mm): 2.04/51.8	Count/Box: 20
Velocity (fps): 2100-2600	Primer: Centerfire, Boxer, LR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receive the rifle velocity armor penetration modifier. Pointed bullets should not be loaded into rifles with tubular magazines. Recoil will set them off. Use Carbine ranges. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Flat Point	Expanding	10 ¥

Description

The 30-30 Winchester was introduced in 1895 in the Winchester Model 94 lever-action rifle. Bullet is .308" in diameter.

The 30-30 was the first small-bore, smokeless powder sporting cartridge commercially available and is still a very popular choice for deer hunting. I own a Winchester Model 94 in 30-30 myself.

.303 British

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S
Medium Machine Gun	9S

Primary Bullet: SP	Case: Rimmed, Necked	Reload: Yes
Bullet Mass (gr): 123-215	Case Length (in/mm): 2.21/56.3	Count/Box: 20
Velocity (fps): 2180-3015	Primer: Centerfire, Boxer, LR	Conceal/Box: 6

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	12 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 8M + Match	20 ¥

Description

The .303 British was the official military rifle cartridge of England and the British Empire from its adoption in 1888 until the 7.62x51mm NATO was adopted in 1953. Bullet is .311" in diameter.

Originally a blackpowder cartridge, the .303 British was one of the first military cartridges to transfer to smokeless powder in the late 19th century.

This is a popular hunting cartridge in (former) British-ruled countries.

.308 Winchester (7.62x51mm NATO)

Weapon Class	Base Damage Code
Battle Rifle	9S
Sport Rifle	9S
Sniper Rifle	9S
Medium Machine Gun	9S

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 110-200	Case Length (in/mm): 2.015/51.1	Count/Box: 20
Velocity (fps): 3200-2400	Primer: Centerfire, Boxer, LR	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	12 ¥
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	20 ¥
Polymer Tip Boat Tail	Expanding + Match	25 ¥
Armor Piercing	x0.25 Armor Rating	40 ¥
Armor Piercing Incendiary	AP + Incendiary	60 ¥
Explosive (PIE)	+1 Power	80 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 8M	12 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 8M + Match	20 ¥
Tracer	Tracer rules	+50 ¥/box

Description

".308 Winchester" is the commercial name for the 7.62x51mm T65 military cartridge developed in the US and adopted by NATO in 1954. Bullet is .308" in diameter.

The .308 Winchester cartridge is one of the more widely known cartridges throughout the world, due to its acceptance by NATO. It has seen use in battle rifles, machine guns, sniper rifles, hunting rifles, target rifles... You name it, the .308 has probably been used for it and to very good effect as well.

7.62x53Rmm Russian (7.62x54mm Russian Rimmed)

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S
Medium Machine Gun	9S

Primary Bullet: FMJ	Case: Rimmed, Necked	Reload: No
Bullet Mass (gr): 150-185	Case Length (in/mm): 2.1/53.5	Count/Box: 20
Velocity (fps): 2885-2580	Primer: Centerfire, Berdan, LR	Conceal/Box: 6

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	12 ¥
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	20 ¥
Armor Piercing	x0.25 Armor Rating	45 ¥
Armor Piercing Incendiary	AP + Incendiary	60 ¥
Explosive (PIE)	+1 Power	80 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 7M	12 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 8M + Match	20 ¥
Tracer	Tracer rules	+50 ¥/box

Description

Adopted by Russia in 1891 with the Mosin-Nagant bolt-action rifle, the standard rifle of the Soviet Army through WWII. Bullet is .310" in diameter.

More commonly found in Asian and eastern European countries formerly under Soviet rule, the 7.62x53Rmm Russian is a popular hunting cartridge as well as a sniper rifle cartridge, used most notably in the Dragunov SVD semi-automatic rifle.

30-06 Springfield (30-06 Government, 7.62x63mm)

Weapon Class	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S
Medium Machine Gun	9S

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 110-220	Case Length (in/mm): 2.494/63.3	Count/Box: 20
Velocity (fps): 3400-2410	Primer: Centerfire, Boxer, LR	Conceal/Box: 6

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps or below), this cartridge automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	12 ¥
Pointed Soft Point	Expanding	12 ¥
Hollow Point Boat Tail, Match	Match	20 ¥
Polymer Tip Boat Tail	Expanding + Match	25 ¥
Armor Piercing	x0.25 Armor Rating	40 ¥
Armor Piercing Incendiary	AP + Incendiary	60 ¥
Explosive (PIE)	+1 Power	80 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 8M	12 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 8M + Match	20 ¥
Tracer	Tracer rules	+50 ¥/box

Description

Developed by the US Springfield Arsenal and introduced in 1906 as a spitzer-bulleted replacement for the 30-03 cartridge in the M1903 bolt action rifle. Bullet is .308" in diameter.

The 30-06 was used by the US Army through two world wars in various types of weapons, in that time becoming a popular North American deer and elk hunting cartridge. Today it is a standard by which all other hunting cartridges are judged.

.300 Winchester Short Magnum (.300 WSM)

Weapon Class	Base Damage Code
Sport Rifle	12S
Sniper Rifle	12S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Mass (gr): 150-180	Case Length (in/mm): 2.1/53.3	Count/Box: 20
Velocity (fps): 3250-2940	Primer: Centerfire, Boxer, LR	Conceal/Box: 6

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	15 ¥
Pointed Soft Point	Expanding	15 ¥
Hollow Point Boat Tail, Match	Match	25 ¥
Polymer Tip Boat Tail	Expanding + Match	30 ¥
Armor Piercing	x0.25 Armor Rating	45 ¥
Armor Piercing Incendiary	AP + Incendiary	65 ¥
Explosive (PIE)	+1 Power	85 ¥
Tracer	Tracer rules	+50 ¥/box

Description

The .300 WSM was introduced by Winchester in 2001 following the development of similar "short action magnum" cartridges designed by various smaller companies, including Lazzeroni and COR-BON. Bullet is .308" in diameter.

The .300 WSM, along with other short action magnum cartridges, features a short case designed to feed through most short action rifles. These cases have a larger diameter than most and a sharp shoulder.

More...

.300 Winchester Magnum (.300 Win Mag)

Weapon Class	Base Damage Code
Sport Rifle	12S
Sniper Rifle	12S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Mass (gr): 110-220	Case Length (in/mm): 2.62/66.5	Count/Box: 20
Velocity (fps): 3600-2825	Primer: Centerfire, Boxer, LR	Conceal/Box: 6

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	15 ¥
Pointed Soft Point	Expanding	15 ¥
Hollow Point Boat Tail, Match	Match	25 ¥
Polymer Tip Boat Tail	Expanding + Match	30 ¥
Armor Piercing	x0.25 Armor Rating	45 ¥
Armor Piercing Incendiary	AP + Incendiary	65 ¥
Explosive (PIE)	+1 Power	85 ¥
Tracer	Tracer rules	+50 ¥/box

Description

The .300 Winchester Magnum was introduced by Winchester in 1963 in the Model 70 bolt-action rifle. Both rifle and cartridge have become North American standards since. Bullet is .308" in diameter.

This is very powerful cartridge commonly used for long range deer/elk hunting. It has shown promise as a long range sniping cartridge and adopted by the US Navy in 1992.

8x57mm Mauser (7.92x57mm)

Weapon Class	Base Damage Code
Sport Rifle	10S
Sniper Rifle	10S
Medium Machine Gun	10S

Primary Bullet: FMJ	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 125-227	Overall Length (in/mm): 3.17	Count/Box: 20
Velocity (fps): 3100-2320	Max Diameter (in/mm): .473	Conceal/Box: 6

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable. However, a rifle firing subsonic ammunition must have a barrel with a faster rifling twist than is normal for this caliber. Subsonic ammunition fired *without* High Twist Rifling incurs a cumulative +1 Target Number modifier at ranges beyond short.

Additional Info: Unless loaded to subsonic velocity (@1050 fps), this cartridge automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	12 ¥
Hollow Point Boat Tail, Match	Match	20 ¥
Soft Point	Expanding	12 ¥
Polymer Tip Boat Tail	Expanding + Match	25 ¥
Armor Piercing	x0.25 Armor Rating	40 ¥
Armor Piercing Incendiary	Above + Incendiary	60 ¥
Explosive (PIE)	+1 Power	80 ¥
Subsonic FMJ (Velocity Controlled)	Tracer rules	12 ¥
Subsonic HPBT (Velocity Controlled)	Tracer rules	20 ¥
Tracer	Tracer rules	+50 ¥/box

Description

Originally chambered in the Mauser Model 1888 Commission Rifle, the 8x57mm was used by Germany and several other countries through both World Wars, in both rifles and machine guns.

In 1905, the 8x57mm was enhanced by loading it with spitzer (pointed) shaped bullets, which reduce drag and extend range. Many countries quickly followed. Bullet diameter was also increased from .318" to .323".

Ballistically comparable to the 30-06, the 8x57mm is still a popular cartridge partially because of the sheer number of rifles produced in that caliber.

.338 Winchester Magnum (.338 Win Mag)

Weapon Class	Base Damage Code
Sport Rifle	12S
Sniper Rifle	12S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Mass (gr): 175-250	Overall Length (in/mm): 3.34	Count/Box: 20
Velocity (fps): 3200-2400	Max Diameter (in/mm): .530	Conceal/Box: 6

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point Boat Tail, Match	Match	30 ¥
Soft Point	Expanding	25 ¥
Polymer Tip Boat Tail	Expanding + Match	45 ¥
Armor Piercing	x0.25 Armor Rating	55 ¥
Armor Piercing Incendiary	Above + Incendiary	80 ¥
Explosive (PIE)	+1 Power	100 ¥
Tracer	Tracer rules	+50 ¥/box

Description

The .338 Winchester Magnum was announced in 1958 and is based on the .458 Winchester Magnum case necked down to accept .338" bullets.

It's been said that if a hunter were forced to choose one rifle for every game on Earth, the .338 Win Mag would be a very good choice to load in it. This is a popular cartridge for big game hunting in North America.

.338 Lapua Magnum (8.6x70mm Lap Mag)

Weapon Class	Base Damage Code
Sport Rifle	14S
Sniper Rifle	14S

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 250-300	Overall Length (in/mm): 3.60	Count/Box: 20
Velocity (fps): 2950-2750	Max Diameter (in/mm): .590	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	30 ¥
Hollow Point Boat Tail, Match	Match	45 ¥
Soft Point	Expanding	30 ¥
Polymer Tip Boat Tail	Expanding + Match	50 ¥
Armor Piercing	x0.25 Armor Rating	75 ¥
Armor Piercing Incendiary	Above + Incendiary	90 ¥
Explosive (PIE)	+1 Power	120 ¥
Tracer	Tracer rules	+50 ¥/box

Description

Probably one of the first cartridges ever to be developed specifically for long range anti-personnel sniping/medium range anti-matériel work, Research Armament Co. intruduced this cartridge in 1983 using a necked-down and strengthened .416 Rigby case. Bullet diameter is .338".

Lapua of Finland subsequently adopted the cartridge, altered the case a bit and introduced the cartridge as the .338 Lapua Magnum. Hunting loads are available for this cartridge.

9.3x64mm Brenneke

Weapon Class	Base Damage Code
Sport Rifle	10D
Sniper Rifle	10D

Primary Bullet: SP	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 247-293	Overall Length (in/mm): 3.43	Count/Box: 20
Velocity (fps): 2820-2570	Max Diameter (in/mm): .504	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Boat Tail	Regular	45 ¥
Hollow Point Boat Tail, Match	Match	45 ¥
Soft Point	Expanding	45 ¥
Polymer Tip Boat Tail	Expanding + Match	55 ¥
Armor Piercing	x0.25 Armor Rating	75 ¥
Armor Piercing Incendiary	Above + Incendiary	90 ¥
Explosive (PIE)	+1 Power	120 ¥
Tracer	Tracer rules	+50 ¥/box

Description

A popular European hunting cartridge, the 9.3x64mm was developed by Wilhelm Brenneke around 1910. Ballistically, it is in the same class as the .375 H&H Magnum.

In the late 1990's, a Russian ammunition manufacturer (Barnaul) developed a steel-cored bullet load for this cartridge, which uses the same diameter bullets (.366") as other 9.3mm Russian cartridges. This load was designed for anti-matériel purposes.

.375 Holland & Holland Magnum (.375 H&H)

Weapon Class	Base Damage Code
Sport Rifle	10D

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Mass (gr): 200-350	Overall Length (in/mm): 3.60	Count/Box: 20
Velocity (fps): 3200-2400	Max Diameter (in/mm): .530	Conceal/Box: 7

Suppression: Partial. Other cartridges are more efficient at subsonic velocity.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Round Nose	Regular	50 ¥
Pointed Soft Point	Expanding	50 ¥
Round Nose Soft Point	Expanding	50 ¥
Pointed Soft Point Boat Tail	Expanding + Match	55 ¥
Bronze Solid	Regular	60 ¥

Description

The .375 H&H Magnum is one of the original belted magnum cartridges, originating in 1912. It has been the basis for numerous wildcats. Bullet diameter is .375".

The .375 H&H Magnum is a legendary African hunting cartridge, capable of taking down the biggest creatures on earth without much hassle.

.376 Steyr (9.5x60mm Steyr)

Weapon Class	Base Damage Code
Sport Rifle	10D

Primary Bullet: SP	Case: Rebated, Necked	Reload: Yes
Bullet Mass (gr): 210-300	Overall Length (in/mm): 3.1	Count/Box: 20
Velocity (fps): 3035-2560	Max Diameter (in/mm): .501	Conceal/Box: 7

Suppression: Partial. If subsonic ammunition is used, full suppression is applicable.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Full Metal Jacket Round Nose	Regular	45 ¥
Pointed Soft Point	Expanding	45 ¥
Round Nose Soft Point	Expanding	45 ¥
Polymer Tip Boat Tail	Expanding + Match	50 ¥
Bronze Solid	Regular	55 ¥
Subsonic FMJ (Velocity Controlled)	Drops DC to 10M	40 ¥
Subsonic HPBT (Velocity Controlled)	Drops DC to 9M + Match	40 ¥

Description

The .376 Steyr was announced in 1999 as a heavy chambering for Jeff Cooper's Scout rifle. Bullet diameter is .375".

The .376 Steyr was designed to stop most dangerous game, the Cape Buffalo in particular, from the light, handy, Steyr Scout rifle. It is the heaviest loading available for the Scout.

9x90mm Metallwerk Elisenhütte Nassau (MEN)

Weapon Type	Base Damage Code
Anti Matériel Rifle	13D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 340	Case Length (in/mm): 3.54/90	Count/Box: 100
Velocity (fps): 3440	Primer: Centerfire, Boxer, BMG	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail (Match)	See Above	1,000 ¥
Armor Piercing	See Above	1,250 ¥
Armor Piercing Incendiary	Above + Incendiary	1,580 ¥
Tracer (not available with Match)	Tracer rules	+150 ¥/ box

Description

Developed by Metallwerk Elisenhütte Nassau (MEN) for a long-range, light-anti-matériel automatic sniper rifle (WSG2000) designed but never put into production by Heckler & Koch in the early 1990's.

Based on the .50 BMG case, shortened to 90mm and necked down to 9mm.

.408 Cheyenne Tactical (.408 CheyTac)

Weapon Type	Base Damage Code
Anti-Matériel Rifle	12D

Primary Bullet: Match	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 419 grains	Case Length: NA	Count/Box: 20
Typical Velocity: 2890 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost/20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer (not available with Match)	Tracer rules	+5 ¥/box

Description

Developed by Cheyenne Tactical and Tactical High Energy Impact Systems (THEIS), this cartridge is based on the .505 Gibbs case, strengthened and necked-down to .408".

The .408 CheyTac was designed from the start as a long range, high-energy sniper/anti-matériel rifle cartridge, to fill the void between the 7.62x51mm NATO and .50 BMG cartridges used in sniping roles by militaries at the turn of the 21st century.

.50 Browning (12.7x99mm Browning Machine Gun, .50 BMG)

Weapon Type	Base Damage Code
Anti Matériel Rifle	14D
Heavy Machine Gun	14D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 660-900	Case Length (in/mm): 3.9/99	Count/Box: 100
Velocity (fps): 3080-2550	Primer: Centerfire, Boxer, BMG	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket	See Above	250 ¥
Match (AMAX)	Above + Match	350 ¥
Armor Piercing (M33)	x0.5 Armor Rating	350 ¥
Armor Piercing Incendiary (M20)	x0.5 Armor + Incendiary	450 ¥
Armor Piercing Discarding Sabot (M903)	APDS	750 ¥
High Explosive Armor Piercing Incendiary	APDS+Inc+2 Power+Match	2,200 ¥
Tracer (not available with Match)	Tracer	+150 ¥/box

Description

Yet another invention of John M. Browning, the .50 BMG was designed during WWI and adopted shortly after for use in Browning's M2 machine gun. It is essentially the 30-06 scaled up to .50 caliber.

After many years of being considered inadequate in the role for which it was designed, the .50 BMG made a comback during the 1980's as several new payloads were devised for the round, such as the Saboted Light Armor Penetrator (SLAP).

The .50 BMG also saw resurrection as a anti-matériel sniping round at about the same time.

12.7x108mm Soviet

Weapon Type	Base Damage Code
Anti Matériel Rifle	14D
Heavy Machine Gun	14D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 790	Case Length (in/mm): 4.25/108	Count/Box: 100
Velocity (fps): 2705	Primer: Centerfire, Boxer, VLR	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail	See Above	250 ¥
Match (AMAX)	Above + Match	350 ¥
Armor Piercing	x0.5 Armor Rating	350 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	450 ¥
Armor Piercing Discarding Sabot	APDS	750 ¥
High Explosive Armor Piercing Incendiary	Above+2 Power+Incendiary	2,200 ¥
Tracer (not available with Match)	Tracer	+150 ¥/box

Description

Originally an anti-aircraft munition, the first ground application for the 12.7mm Soviet was in the Soviet DShK heavy machine gun introduced in 1938.

Though slightly longer, it is basically the Russian answer to the US .50 Browning cartridge and is far more common in Asian countries and former Soviet satellite states.

14.5x114mm Soviet

Weapon Type	Base Damage Code
Anti Matériel Rifle	18D
Heavy Machine Gun	18D

Primary Bullet: API	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 990	Case Length (in/mm): 4.49/114	Count/Box: 100
Velocity (fps): 3200	Primer: Centerfire, Boxer, VLR	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail	See Above	850 ¥
Armor Piercing	x0.5 Armor Rating	1,100 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	1,650 ¥
Armor Piercing Discarding Sabot	APDS	1,500 ¥
High Explosive Armor Piercing Incendiary	Above+2 Power+Incendiary	3,100 ¥
Tracer	Tracer	+200 ¥/box

Description

The 14.5x114mm Soviet was introduced in the PTRS and PTRD anti-tank rifles during WWII and has served in various machine guns and anti-materiel rifles since.

The original load was an armor-piercing incendiary round weighing in at 990 grains and fired at a velocity of 3,200 feet per second. That develops over 22,500 foot pounds of kinetic energy. If that's not a busted APC waiting to happen, I don't know what is.

.404 Jeffery (.404 Rimless Nitro Express)

Weapon Class		Base Damage Code	
Sport Rifle		9D	
Primary Bullet: SP	Case: Rimless, Rebated		Reload: Yes
Bullet Mass (gr): 300-400	Overall Length (in/mm): 3.53/89		Count/Box: 20
Velocity (fps): 2600-2125	Max Diameter (in/mm): .544/13.8		Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Expanding	120 ¥
Solid	x0.5 Armor Rating	120 ¥

Description

The .404 Jeffery was introduced in 1909 and was very popular as a general purpose hunting cartridge in Africa for many years afterward.

At the turn of the 21st century, a number of major ammunition makers began developing new magnum cartridges based on the .404 Jeffery case, which was apparently far ahead of its time.

.416 Rigby

Weapon Class		Base Damage Code	
Sport Rifle		10D	
Primary Bullet: SP	Case: Rimless, Necked		Reload: Yes
Bullet Mass (gr): 300-410	Overall Length (in/mm): 3.72/94		Count/Box: 20
Velocity (fps): 2950-2370	Max Diameter (in/mm): .589/14.9		Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Expanding	115 ¥
Full Metal Jacket	Regular	115 ¥
Solid	x0.5 Armor Rating	125 ¥

Description

The .416 Rigby was originally a proprietary cartridge developed by John Rigby & Co. in 1911.

Eventually finding its way into less espensive, non-custom rifles, the .416 Rigby is still a popular safari cartridge even today. Many major ammunition makers still produce it.

.416 Remington Magnum

Weapon Class		Base Damage Code	
Sport Rifle		10D	
Primary Bullet: SP	Case: Rimless, Necked		Reload: Yes
Bullet Mass (gr): 300-400	Overall Length (in/mm): 3.72/94		Count/Box: 20
Velocity (fps): 2850-2400	Max Diameter (in/mm): .589/14.9		Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Hollowpoint	80 ¥
Full Metal Jacket	Regular	80 ¥
Solid	x0.5 Armor Rating	115 ¥

Description

Announced in 1988, the .416 Rem Mag was the first true big-bore dangerous game cartridge developed in America since the .458 Win Mag in 1956. It was designed to fill the performance gap between the .375 H&H and the.458 Win Mag.

Found in several comercially manufactured rifles, the .416 Rem Mag offers true big game performance in a more affordable package.

.444 Marlin

Weapon Class		Base Damage Code	
Sport Rifle		8S	
Primary Bullet: SP	Case: Rimmed, Straight		Reload: Yes
Bullet Mass (gr): 180-300	Overall Length (in/mm): 2.57/65		Count/Box: 20
Velocity (fps): 2500-2085	Max Diameter (in/mm): .514/13		Conceal/Box: 7

Suppression: No.

Additional Info: Because of the types of bullets that this cartridge commonly uses, it **does not** receive the rifle velocity armor penetration modifier. However, if AP bullets are used, apply their standard modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Round Nose Lead	Regular	15 ¥
Hard Cast Lead	-1 Armor Rating	18 ¥
Jacketed Soft Point	Expanding	15 ¥
Jacketed Hollowpoint	Expanding	15 ¥
Wadcutter/Semi-wadcutter	Regular	15 ¥
Reverse Ogive	Reverse Ogive Rules	25 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	160 ¥

Description

.444 Marlin consists of a lengthened .44 Magnum case, using the same case head and bullet dimensions. It was released by Marlin in 1964.

The .44 Marlin was developed for Marlin's model 336 lever action rifle. It outperforms the .44 Magnum in all respects.

.45-70 Government

Weapon Class		Base Damage Code	
Sport Rifle		9S	
Primary Bullet: SP	Case: Rimmed, Straight		Reload: Yes
Bullet Mass (gr): 300-405	Overall Length (in/mm): 2.55/65		Count/Box: 20
Velocity (fps): 2190-1330	Max Diameter (in/mm): .600/15.2		Conceal/Box: 7

Suppression: No.

Additional Info: Because of the types of bullets that this cartridge commonly uses, it **does not** receive the rifle velocity armor penetration modifier. However, if AP bullets are used, apply their standard modifier. x2 recoil modifier.

Payloads Available	Effect	Cost / 20
Round Nose Lead	Regular	20 ¥
Jacketed Soft Point	Expanding	22 ¥
Jacketed Hollow Point	Expanding	22 ¥
Hard Cast Gas Check	-1 Armor Rating	30 ¥
+P Hard Cast Gas Check	+1 Power	50 ¥

Description

Oreiginally a blackpowder cartridge, the .45-70 Government was adopted by the US military in 1873 for use in the Springfield "Trapdoor" single shot rifle. It was also chambered in a number of other popular rifles.

Interest in the .45-70 wained through the war years but picked up again slowly afterward. Loaded with smokeless powders, it is one of the most popular cartridges available for use in lever action rifles, capable of taking any game on Earth with the proper load.

.450 Marlin

Weapon Class		Base Damage Code	
Sport Rifle		10S	
Primary Bullet: SP	Case: Belted, Straight		Reload: Yes
Bullet Mass (gr): 250-450	Overall Length (in/mm): 2.55/65		Count/Box: 20
Velocity (fps): 2500-1830	Max Diameter (in/mm): .532/13.5		Conceal/Box: 7

Suppression: No.

Additional Info: Because of the types of bullets that this cartridge commonly uses, it **does not** receive the rifle velocity armor penetration modifier. However, if AP bullets are used, apply their standard modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Round Nose Lead	Regular	20 ¥
Jacketed Soft Point	Expanding	22 ¥
Jacketed Hollow Point	Expanding	22 ¥
Hard Cast Gas Check	-1 Armor Rating	30 ¥
+P Hard Cast Gas Check	+1 Power	50 ¥

Description

Released in 2000, the .450 Marlin is a product of the tenacity of modern day idiots and litigation specialists. Because it is possible to load the .45-70 to pressures exceeding what some older rifles can safely contain, the .450 Marlin was developed in order to offer high pressure loads without the possibility of being chambered in older .45-70 rifles.

.458 Winchester Magnum (.458 Win Mag)

Weapon Type		Base Damage Code
Sport Rifle		9D
Primary Bullet: SP	Case: Belted, Straight	Reload: Yes
Bullet Mass (gr): 300-510	Overall Length (in/mm): 3.34/64	Count/Box: 20
Velocity (fps): 2500-2040	Max Diameter (in/mm): .532/13.5	Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Hollowpoint	45 ¥
Full Metal Jacket	Regular	45 ¥
Solid	x0.5 Armor Rating	65 ¥

Description

The .458 Win Mag was introduced by Winchester in 1956 to compete with the popular Weatherby Magnum line of cartridges that were commonly used by American hunters on African hunting trips. It is still a popular choice for that purpose today.

.470 Nitro Express

Weapon Type		Base Damage Code
Sport Rifle		10D
Primary Bullet: SP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 500-600	Overall Length (in/mm): 3.98/101	Count/Box: 20
Velocity (fps): 2160-1940	Max Diameter (in/mm): .655/16.6	Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Hollowpoint	180 ¥
Full Metal Jacket	Regular	180 ¥
Solid	x0.5 Armor Rating	200 ¥

Description

Probably the most popular of the Nitro Express series of cartridges, the .470 was introduced by Jeffery in 1907.

The .470 NE is found most often in English-style double guns. Factory-produced ammunition is expensive, so reloading of this cartridge is common to those who use it.

.585 Nyati

Weapon Type		Base Damage Code
Sport Rifle		13D
Primary Bullet: SP	Case: Rebated, Necked	Reload: Yes
Bullet Mass (gr): 545-750	Overall Length (in/mm): 3.525/89.5	Count/Box: 20
Velocity (fps): 2490-1640	Max Diameter (in/mm): .660/16.7	Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives the rifle velocity armor penetration modifier. x4 recoil modifier.

Payloads Available	Effect	Cost / 20
Solid	x0.5 Armor Rating	200 ¥
Solid +P	+1 Power, x0.5 Armor Rating	220 ¥

Description

One of the world's most powerful hunting cartridges, the .585 Nyati was developed by gun writer Ross Seyfried in the 1980s for African big game hunting. "Nyati" is the name for Cape Buffalo in the Bantu language.

In the rifles commonly chambered for this cartridge, recoil has been described as "severe".

.600 Nitro Express (2 8/10", 3")

Weapon Type		Base Damage Code
Sport Rifle		15D
Primary Bullet: SP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 900	Overall Length (in/mm): 3.68/93.4	Count/Box: 20
Velocity (fps): 1850-2050	Max Diameter (in/mm): .805/20.4	Conceal/Box: 7

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier. x3 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Hollowpoint	200 ¥
Full Metal Jacket	Regular	200 ¥
Solid	x0.5 Armor Rating	260 ¥

Description

A somewhat uncommon cartridge, the .600 Nitro Express was introduced in 1899 with a case length of 2 8/10ths inches. In 1901, a version with a 3" case was developed.

The 600 Nitro Express is considered by many to be overpowered for any game on Earth. Ammunition is very expensive.

.700 Nitro Express

Weapon Type		Base Damage Code
Sport Rifle		16D
Primary Bullet: SP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 1000	Overall Length (in/mm): 4.20/106	Count/Box: 20
Velocity (fps): 2000	Max Diameter (in/mm): .890/22.6	Conceal/Box: 7

Suppression: No.

Additional Info: Because of the types of bullets that this cartridge commonly uses, it **does not** receive the rifle velocity armor penetration modifier. However, if solid bullets are used, apply a x0.75 AP modifier. x4 recoil modifier.

Payloads Available	Effect	Cost / 20
Jacketed Soft Point	Hollowpoint	180 ¥
Full Metal Jacket	Regular	180 ¥
Solid	x0.5 Armor Rating	200 ¥

Description

The biggest and the baddest. The .700 Nitro Express was developed in 1988 exactly for that reason and no other.

While it really serves no practical purpose today, in the time of Shadowrun, there are several very large creatures that would most ceratainly be hunted with a gun firing a cartridge like this.

.22 Sniper Subsonic (.22SSS)

Weapon Type	Base Damage Code
Light Pistol/Revolver	4L
Sport Rifle	4M
Sniper Rifle	4M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: No
Bullet Mass (gr): 60	Case Length (in/mm): 0.3/7.6	Count/Box: 500
Velocity (fps): 950	Primer: Rimfire	Conceal/Box: 5

Suppression: +6 to Perception Modifiers.

Additional Info: Use Heavy Pistol ranges. **Suppressor must be removed before firing supersonic ammunition or damage to the weapon could occur.**

Subsonic Payloads	Effect	Cost / 500
Regular	Regular	45 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by Aguila Ammunition in 2000, this cartridge is intended for use in sound-suppressed pistols and rifles chambered for the .22 Long Rifle cartridge.

The .22SSS uses a shortened .22LR case with a heavy 60-grain RNL bullet. Overall length is identical to the .22LR, therefore the .22SSS can be chambered in almost any .22LR weapon.

6.5mm Whisper®

Weapon Type	Base Damage Code
Carbine	5M
Assault Rifle	6M
Sport Rifle	6M
Sniper Rifle	6M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 100-155	Case Length (in/mm): 1.36/34.5	Count/Box: 20
Velocity (fps): 2300-970	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	HP, +3 Power	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge is intended for use in sound-suppressed AR-15's, bolt-action rifles and T/C Contenders.

Based on the .221 Fireball case. Bullet diameter is .264 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

7mm Whisper®

Weapon Type	Base Damage Code
Carbine	6M
Assault Rifle	7M
Sport Rifle	7M
Sniper Rifle	7M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 120-168	Case Length (in/mm): 1.36/34.5	Count/Box: 20
Velocity (fps): 2250-1050	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	+3 Power, HP+Match	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge is intended for use in sound-suppressed AR-15's, bolt-action rifles and T/C Contenders.

Based on the .221 Fireball case. Bullet diameter is .284 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

.300 Whisper®

Weapon Type	Base Damage Code
Carbine	7M
Assault Rifle	8M
Sport Rifle	8M
Sniper Rifle	8M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 125-250	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 2285-980	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Explosive	+1 Power	80 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	+3 Power, HP+Match	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Explosive	+4 Power	80 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge was the first of the Whisper cartridges and is intended for use in sound-suppressed AR-15's.

The .300 Whisper® is probably the most versatile of the Whisper® series cartridges. It is based on the .221 Fireball case. Bullet diameter is .308 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

This cartridge has found limited use in some SWAT and Special Forces units.

.338 Whisper® and .338 Whisper® #2

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 200-300	Case Length (in/mm): 1.47/37.3	Count/Box: 20
Velocity (fps): 1075-1040	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Sport Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	30 ¥
Armor Piercing	x0.75 Armor Rating	45 ¥
Armor Piercing Incendiary	x0.75 Armor Rating	60 ¥
Explosive	+2 Power	60 ¥
Tracer	Tracer	+10 ¥/box

Description

There are actually two versions of the .338 Whisper®. The original .338 Whisper® is based on the 7mm Remington Benchrest case, which simplifies conversion of rifles that use .308 Winchester case head dimensions (.470").

The .338 Whisper® #2 is based on the .221 Fireball case. This allows easier conversion from rifles originally chambered in .223 Remington, such as the AR-15 and variants.

9x39mm Soviet (9.3x39mm Russian Silent)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: AP	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 235-255	Case Length (in/mm): 1.52/38.8	Count/Box: 20
Velocity (fps): 985-920	Primer: Centerfire, Berdan, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Armor Piercing (SP-5, steel core)	x0.75 Armor Rating	35 ¥
Armor Piercing (SP-6, steel tip)	x0.75 Armor Rating	35 ¥
Armor Piercing (PAB-9)	x0.75 Armor Rating	25 ¥
Tracer	Tracer	+50 ¥/box

Description

The 9x39mm Soviet cartridge was developed for the VSS Vintorez sniper rifle and AS Val assault rifle. It has since been chambered in a vast array of Russian assault rifles and submachine guns.

Based on the same principle as the Whisper® cartridges, the 9x39mm uses the 7.62x39mm case necked up to acccept .365" bullets, most commonly AP types.

.375 Whisper®

Weapon Type	Base Damage Code
Carbine	8M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 250-300	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 1050-950	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Ballistic Tip (Expanding)	Expanding	30 ¥
Soft Point, Boat Tail	Expanding	30 ¥

Description

The .375 Whisper is based on the 7mm Remington Benchrest case, which simplifies conversion of rifles that use .308 Winchester case head dimensions (.470").

The .375 Whisper® may fare a little better as a hunting round than its .338 sibling, but in just about any other area, the .338 has it beat largely because of the wider variety of bullet types available for it.

.500 Whisper® and .510 Whisper®

Weapon Type	Base Damage Code
Sport Rifle	9D
Sniper Rifle	9D

Primary Bullet: HPBT Match	Case: Belted or Rimless	Reload: Yes
Bullet Mass (gr): 600-900	Case Length (in/mm): Varies	Count/Box: 20
Velocity (fps): 1050-950	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Sniper Rifle ranges.

Subsonic Payloads	Effect	Cost / 20
Full Metal Jacket (FMJ)	-	50 ¥
Soft Point (Expanding)	Expanding	85 ¥
Advanced Match Accuracy (AMAX)	Match	75 ¥
Armor Piercing	Hollowpoint	75 ¥
Armor Piercing Incendiary	x0.5 Armor	90 ¥
High Explosive Incendiary Armor Piercing	+2 Power, x0.5 Armor	140 ¥
Tracer	Tracer	+10 ¥/box

Description

The .500 Whisper® is intended to provide unmatched long range energy from a suppressed rifle, with the additional possibility of firing .50 BMG payloads at subsonic velocities.

The .500 Whisper® is based on the belted .460 Weatherby Magnum case, trimmed to 2" and necked to accept .510" bullets.

The .510 Whisper® is based on the rimless .338 Lapua Magnum case, trimmed to 1.875" and necked to accept .510" bullets.

Capable of MOA accuracy at 600 meters, the .500 Whisper can be used for light anti-vehicle/materiel work with the proper payload.

Whisper® is a registered trademark of SSK Industries.

Tracer Ammunition

Tracers are available for all kinds of ammuntion and are usually reserved for machine guns for the purpose of aiming. Tracers are not thier own category of ammunition. For example, there are such things as armor piercing tracer munitions, incendiary tracer munitions and armor piercing incendiary tracer munitions.

A bright-burning magnesium compound is added to a specially formed cup in the rear of the jacket of a given ammunition type. When the powder is ignited, it in turn ignites the tracing compound. This leaves a bright luminescent trail behind the bullet in flight.

Beware. Murphy's Law of Combat #25: **Tracers work both ways.**

Type	Game Effect	Availability
Tracer	See page 117, Shadowrun, 3rd Edition.	Same as ammunition type

Tracer	Count	Conceal	Weight	Cost/Box
Pistol/SMG	Per box	NA	nil	+2 ¥
Assault Rifle/Carbine/LMG	Per box	NA	nil	+4 ¥
MMG/Sniper Rifle	Per box	NA	nil	+5 ¥
HMG/Heavy Sniper Rifle	Per box	NA	nil	+10 ¥
Assault Cannon/AMR	Per box	NA	nil	+15 ¥
Shotgun (Slug)	Per box	NA	nil	+5 ¥

4.73x33mm DM11 (HK Caseless)

Weapon Type	Base Damage Code
Assault Rifle	9M

Primary Bullet: FMJ-BT	Case: None; HITP Compund	Reload: No
Bullet Mass (gr): 50	Case Length (in/mm): 1.299/33	Count/Box: 50
Velocity (fps): 3050	Primer: Centerfire, Booster	Conceal/Box: 5

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	8 ¥
Light Armor Piercing, Boat Tail	-1 power, x0.5 Armor	15 ¥
Tracer	Tracer	+20 ¥/box

Description

The DM11 caseless cartridge is the end result of almost 20 years of developmental work begun by Heckler & Koch in 1969 for the G11 rifle project.

More information on this round can be found here. More info on the G11 project can be found at HKPRO.

7.62x25mm DE8025 (.30 ADM)

Weapon Type	Base Damage Code
Medium Pistol	6M
Submachine Gun	7M
Light Carbine	7M

Primary Bullet: FMJ-BT	Case: None; HITP Compound	Reload: No
Bullet Mass (gr): 155	Case Length (in/mm): 0.984/25	Count/Box: 50
Velocity (fps): 1050	Primer: Centerfire, Booster	Conceal/Box: 5

Suppression: +6 modifier to Perception Tests.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	10 ¥
Light Armor Piercing	x0.75 Armor + Match	25 ¥
Ballistic Tip, Expanding	Hollowpoint + Match	35 ¥
Tracer	Tracer	+30 ¥/box

Description (Fictional)

The 7.62x25mm Caseless, or .30 ADM as it is sometimes known, was developed by German weapons designer Christian Auf der Maur for what eventually became the SKSM P-61 pistol.

This is a subsonic caseless cartridge for the integrally suppressed SKSM P-61 pistol, designed for clandestine operations.

10x24mm M309LP (10x24mm HK Short Caseless)

Weapon Type	Base Damage Code
Heavy Pistol	9M
Submachine Gun	9M
Light Carbine	10M

Primary Bullet: FMJ	Case: None; HITP Compound	Reload: No
Bullet Mass (gr): 210	Case Length (in/mm): 0.99/25	Count/Box: 50
Velocity (fps): 1200	Primer: Electronic, Booster	Conceal/Box: 8

Suppression: Velocity Control rules apply. -3 Power.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	8 ¥
Jacketed Hollow Point	Expanding	9 ¥
Expanding Full Metal Jacket	Expanding	10 ¥
M309LP Light Armor Piercing	-1 Armor Rating	30 ¥
Explosive (PIE)	+1 Power	55 ¥
M309 High Pressure Explosive (PIE)	12S +1 Power	?

Description (Fictional)

This cartridge originated from the M41A Pulse Rifle in the movie *Aliens*.

I've toned this cartridge down a bit because in reality it would be more of a pistol round than a rifle round. The "LP" stands for Low Pressure.

The *Aliens: Colonial Marines Technical Manual* states that 210 grain explosive tipped bullet is fired at 840 meters per second (2755 fps) from the M41A, which weighs 4.9kg (10.8 lbs) fully loaded. That's a very heavy rifle and whole lot of recoil for an automatic weapon.

10x28mm M250 (10x28mm HK Long Caseless)

Weapon Type	Base Damage Code
Heavy Machine Gun	12D

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 230	Case Length (in/mm): 1.1/28	Count/Box: 50
Velocity (fps): 3200 (est.)	Primer: Electronic, Booster	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
M250 Explosive (FEX)	Regular	10 ¥

Description (Fictional)

This cartridge originated from the M56 Smart Gun in the movie *Aliens*.

Ballistics listed put this cartridge up pretty high on the energy scale at 5230 fpe at the muzzle. That's a whole lot of kinetic energy. More than enough to drop a charging elephant in its tracks. Then you've got the explosives...

Saeder-Krupp Special Munitions, Pistole 61

Manufacturer:	Saeder-Krupp Special Munitions
Location:	Essen, Germany
Cartridge:	7.62x30mm Caseless DE8025
Primary Load:	155 gr. FMJBT, 51 gr. steel core
Muzzle Velocity:	320 m/s (1050 fps) subsonic
Muzzle Energy:	515 j (380 fpe)
Operation:	Gas
Action:	Double Action Only, 3.5# Pull
Safety:	Biometric, SL Serial # Confirm
Barrel:	88mm (3.5")
Rifling:	Polygonal, 1:25cm RH
Overall Length:	190mm (7.48")
Weight (loaded):	708 g (1.56 lbs)
Sights:	Guttersnipe, Novak, Bo-Mar, none
Smartlink:	Mk251.2, palm/datajack I/O
Magazine Capacity:	8 rounds, detachable box
Modes of fire:	Single shot, semi-automatic
Unit Replacement Cost:	780.72 ¥

The Saeder-Krupp P-61 is a compact, gas-operated, integrally suppressed pistol using the caseless ammunition system. This pistol was developed by Carl Walther Waffenfabrik throughout the 2050's specially for the for the German Kommando Spezialkraefte (KSK) organization as a suppressed pistol of unparalleled performance. Prototypes were delivered in the summer of 2056. After rigorous testing, slight changes were suggested and production was ordered in early 2061.

The P-61 is striker-fired with a double action only (DAO) trigger mechanism, which actuates an electronic ignition system. Manual control surfaces include an ambidextrous magazine release, a combination slide stop/ takedown lever, a combination gas block/slide lock lever for ultra-quiet operation, and an ambidextrous manual safety lever with three positions: safe (**S**), fire (**F**), and cybernetic control (**CC**), which locks the manual trigger mechanism.

Ambient/direct visible and infrared lights, laser sights, designators and rangefinders can be added to an accessory rail molded into the dust cover of the weapon's polymer frame.

Also included is Saeder-Krupp's Mk251.2 Smartlink computer targeting system with ambidextrous palm induction pad. An external jack is provided as a redundant data I/O method. ADVAT.328 compliant, the Mk251.2 smartlink system is considered by many to be one of the better smartlink systems on the market. Smartlink hardware systems are serial coded and function in tandem with the weapon's biometric safety system, which can be disabled per operator preference. SMS proprietary Smartlink software is installed, providing accurized ballistic data, improved data transfer rate, and a total of 256 different reticle and data display combinations. Cybernetic control functions include "safe weapon" and "ready weapon". Upon locking of the trigger mechanism through the manual safety lever, a cybernetic "fire" command may also be employed. Magazine ejection is controlled manually.

A choice of backup iron sights include a fixed Novak 3-dot sight, an adjustable Bo-Mar type, or a low profile, low snag "guttersnipe" type sight. Alternately, the weapon is available without iron sights installed.

At a distance of one meter, the integral suppressor provides -44dB of net sound reduction, leaving the weapon to produce 112 dB of sound pressure, on average. The advanced phase cancellation baffle design mechanically shifts sound wave frequency into the ultrasonic range (above 20 kHz), beyond what can normally be perceived by the human ear. As a result, actual noise reduction may seem greater. Applying approximately 10cc of water to the suppressor system increases equipment-measured performance to an awesome -48dB of net sound reduction for approximately 20-30 rounds of use. However, a small jet of water vapor will be visible. Because of these design features, the P-61 may be operated in potentially explosive environments such as chemical plants, oil refineries or drug labs without the danger of igniting the atmosphere through muzzle or breech blast. While the weapon can be fired with the suppressor removed, it is not recommended and is only suggested as an emergency measure.

In the interest of optimal noise reduction, a lever at the rear of the suppressor can be flipped down to block gas flow to the operating system. This lever also acts as a lock which engages into a slot machined into the right side of the slide; dual insurance against noise created by a reciprocating slide. Basic maintenance can be performed without disassembly of the suppressor unit.

Caseless ammunition in this weapon system is designed to reduce overall signature of discharge and extend range beyond conventional pistol capabilities while delivering enhanced terminal ballistics over a wide range of velocities. There are two loads available for the DE8025 cartridge. Both are available electrically-primed or percussion-primed and develop the same muzzle velocity. With an extremely high ballistic coefficient, air resistance is kept to a minimum making both loads capable of retaining 93% of their muzzle velocity and 87% of their muzzle energy at 100 yards. Propellant is Dynamit Nobel's J-215XP HITP compound; a very clean-burning propellant which keeps fouling and visual signature to an absolute minimum.

DE8025.01 is a molybdenum disulfide-coated, 155-grain full metal jacket boat tail bullet with 51-grain hardened steel penetrator ahead of a lead filler. This is a conventional light armor penetrator, designed to maximize terminal effects against armored personnel.

DE8025.04 consists of a 155-grain bullet with a sectioned lead alloy core ahead of a polymer tip, held in by a thin guilding metal jacket. Upon contact with a semi-liquid medium, the polymer tip is pressed back into the sectioned core. The core is then broken into six fragments of approximately 25 grains each, transferring energy quickly while creating multiple wound cavities.

Though the process is a bit more involved than is common in other handgun designs, the P-61 can be completely dismantled in a matter of seconds with the use of a small tool provided with each pistol. This tool can be stored in a slot located in the backstrap of the pistol's grip. Cleaning is simple, and the factory recommends that the suppressor be removed and emersed in a cleaning solvent every 3,000-4,000 rounds to remove excess powder deposits. The weapon has been known to exceed 8,000 rounds of dry operation between cleanings without noticeable side effects in weapon performance or lifespan.

Though the P-61 has been thoroughly tested to meet all operational requirements of the elite German KSK special forces group, the electrical ignition module can be replaced by a mechanical striker assembly for those who do not wish to rely on electrical power to fire the gun. With the striker assembly in place, the weapon cannot be fired cybernetically. However, space at the bottom of the magazine that is usually consumed by the electrical firing system's power source is used to house one extra round of ammunition, increasing capacity to 9 rounds. Non-battery magazines are color coded to avoid confusion during operation. In the event that a non-battery magazine is accidentally chambered in a P-61 with the electrical firing system installed, the smartlink's onboard power supply performs redundancy and is sufficient to fire about two magazines of ammunition. In this case, the smartlink system will issue a warning to the user. This redundancy may also come in handy during tactical magazine changes.

Game Effects


SOPMOD M4
Accessory Kit
ACOG Reflex
0-300m Range
ACOG 4X Scope
0-600m Range
Visible Laser
0-300m Range
AN/PEQ-2
IR Pointer/Illuminator
0-600m Range
Carrying Handle/Sight
Backup Iron Sight
0-300m Range
Rail Interface System (RIS)
QD Sound Suppressor
30 dB Reduction
Forward
HandGrip
M4A1 Carbine
(5.56 mm NATO)
Visible Light
9 Volt
Special Operations Peculiar Modification to
the M4 Carbine (SOPMOD M4) Accessory Kit
Program Objective: To provide Special Operations Forces the ability to adapt the M4A1 Carbine to increase its operational effectiveness through improved target recognition, acquisition, and hit quality during day and night from Close Quarters to 500 meters.
Program Sponsors: United States Special Operations Command
Program Manager: Crane Division, Naval Surface Warfare Center
SOPMOD M4 Website: http://ammo-eng.crane.navy.mil/408html/sopmod3.htm
M203 Grenade Launcher
with QD Mount
Modified M203
Leaf Sight

Kostas: The Timeline

03/22/25	Jeremy Kostas born.
	Benjamin Martin Elementary, Fayetteville, NC (1-4)
01/10/33	Family moves to Baltimore area.
	Owings Mills Elementary, Owings Mills, MD (4-5)
	Deer Park Magnet, Randallstown, MD (6-8)
	Begins Judo training.
	Randallstown High, Randallstown, MD (9-10)
08/06/41	Moves in with father.
09/02/41	Hirschi High School, Wichita Falls, TX(10-12)
02/15/42	Dual citizenship confirmed by CAS INS.
03/22/43	Joins CAS Army.
05/22/43	High school graduation.
09/13/43	Basic Combat Training, Ft. Benning, GA. Qualifies "expert" in BRM course. Graduates.
01/16/44	Infantry Training School, Ft. Benning, GA. Graduates Airborne qualified (MOS 11B).
01/17/44	Assigned to 82nd Airborne, 3-505-A.
05/06/44	Promoted E-3 (PFC).
44	Begins college courses, Columbus State University, Columbus, GA. Takes most courses over matrix.
45	Volunteers for Rangers.
45	Begins Ranger training.
46	Assigned to 3/75th Ranger Regiment.
03/20/46	Attends Army Sniper School, Ft. Benning, GA.
45	Graduates CAS Army Sniper School.
46	Promoted E-4 (CPL).
06/23/46	Joins CAS Army Marksmanship Unit.
46	Promoted E-5 (SGT).
48	Begins Aikido training in free time.
51	Graduates BS Mechanical Engineering, Columbus State University.
52	CAS Army Special Forces Qualification Course.
53	JFK Special Warfare Center, Fort Bragg, NC. (MOS 18C)
05/31/55	Kostas "dies".
07/01/55	One month recovery.
07/15/55	Two week initiation and psychoanalysis ends.
07/17/55	Officially joins CIA.
02/02/56	Fieldcraft training ends.
01/20/58	Operates for two years, most downrange (Moscow mission 06/15-10/22/2057).
02/10/58	Meets Rory at training base (unspecified).
08/01/58	Takes Rory on as team asset.
11/25/58	Operation in Azerbaijan.
12/20/60	"Falling Star" aborted.
03/13/60	False info posted on Shadowland.
07/17/61	Six-year contract expires, Kostas resigns CIA.
03/13/62	Rory resigns CIA, recruited by Kostas.

Personal Data

Name: Kostas, Jeremy Ivan
Date of Birth: 03/22/25
Place of Birth: Fayetteville, NC USA
SIN: CAS/04933-921-63981

Height: 5'11"/180cm	**Hair:** Brown/Grey
Weight: 180lbs/81.6kg	**Eyes:** Brown

Education:
(1-4) Benjamin Martin Elementary, Fayetteville, NC
(4-5) Owings Mills Elementary, Owings Mills, MD
(6-8) Deer Park Magnet, Randallstown, MD
(9-11) Randallstown High, Randallstown, MD
(11-12) Hirschi High School, Wichita Falls, TX
(BSME) Columbus State University, Columbus, GA
JFK Special Warfare Center, Fort Bragg, NC

Employment History:
Confederated American States Army (2043-2053)
CAS Army Special Forces Command (2053-2055)
CH2M Hill (2055)

Date of Death: 05/31/55

Cause of Death: Cerebral edema due to blunt trauma sustained during an automobile accident.

Father

Name: Kostas, Ivan Genedeyovich
Occupation: Colonel, CASAF (Retired)
Location: Fort Worth, Texas CAS

Mother

Name: Maclean, Marta Yanik
Occupation: School Teacher,
Harford County, MD UCAS
Location: Deceased 09/12/59

Siblings

Name: Maclean, Jessica Anne
Date of Birth: 11/10/37
Occupation: Student, Medical
Location: Aberdeen, MD UCAS

Spouse

Name: Kostas, Sarah MacGregor
Date of Birth: 07/21/29
Occupation: Executive Secretary,
Cross Applied Technolgies
Location: Deceased 05/31/55

Jeremy was still amazed that he could see this well. He'd had vismag before being recruited, but it wasn't anywhere near this quality. There was a fence post with a bright red sign that Jeremy had ranged at 2,027 meters. It read "TRESPASSERS WILL BE SHOT" in a cyrillic script. Jeremy chuckled. The resolution and motion correction were incredible. Who needed satellites anymore?

"Observer's up," he blurted rather unenthusiastically as something was caught in his peripheral vision. *High mag, no field of vision...* He brought down the power, cursed at himself, and zapped the target area with a quick burst of coded infrared lightwaves. "One-five degrees right, three-six-six meters. Heading for the truck." He keyed his radio. "Delta ready."

Rory acquired the target and brought the rifle to his shoulder. With the rifle's forearm resting on his pack, he popped open the scope's covers with his supporting hand and looked through it, pulling the rifle's stock to his shoulder and cheek tightly. Finding the target, the lidar attached to his smartlink confirmed what Jeremy's rangefinder had previously discovered. Data from the weather meter had been collated almost instantly. This information was displayed in the upper left corner of his field of vision and adjusted the scope's reticle for windage and elevation accordingly. "Ready."

"Fire," Jeremy snapped back immediately.

As Rory mumbled words long ago forgotten by all but the Eldar. (Even most Elves only knew Sperethiel; the "new" language.) Everything around him seemed to go into slow motion. The seconds drew out waiting for his for respiratory pause. *3...2...1...* The shot jolted the surrounding foliage as the 175-grain polymer-tipped boat tail bullet was sent into the head of a man running almost perpendicular to their position. He was running from a the back door of a large, two story house to an embankment which seemed to hide an entrance to some kind of underground bunker. But he never made it, falling instantly, as if turned off by a switch. Rory whispered a prayer.

"Nothin' but net," Jeremy confirmed a split second before the radio interrupted. Rory grinned and cycled his rifle's bolt. He didn't quite catch the euphemism, but it sounded positive enough.

"Delta's Ready."

"Taken care of," Jeremy tisked at the Short Range Artillery (SRA) team as he increased the scope's magnification power. The reticle adjusted as Jeremy got a closer look at the downed target. Convinced that the target wasn't going to be getting back up, Jeremy decided to put the smartlink system on standby. This would conserve power and lessen the chances of compromising his position.

Rory scoffed and changed the radio to **COMMAND** channel and thumbed the switch. "Charlie-Niner-November, target down."

The engagement had been going on for nearly eleven minutes, the entire operation for nearly four hours. Jeremy's slightly less-than-legal outfit was outside of a dot on the Iranian map called Füzuli (which used to be in a country called Azerbaijan), mopping up what was described in his field report as a "terrorist operation backed by rogue governmental entities." These particular terrorists were putting together revenue by processing controlled substances, namely opium poppy into heroin, but they also had a small operation manufacturing BTLs in Baku. Heroin wasn't exactly a new idea, but it was a way to make a substantial profit that had worked quite well for literally thousands of years. There was intel that the guy running the show was a local oil magnate as well. If that were true, it probably wouldn't suprise anyone. You couldn't take a piss around here without hitting some kind of an oil rig.

But as far as the drugs were concerned, it was starting to sink in that doing this kind of thing was inconsequential to the big picture. It didn't really matter whether you shut down a single drug operation or twenty of them. The demand was *everywhere*, and it would never go away no matter how hard you tried, at least as far as Jeremy could tell. Attacking the supply end would, at best, cause the price on the street to rise a little until some other person willing to risk everything moved into position to supply the product and reap the profits. Jeremy had the sneaking suspicion that this operation was more about eliminating competition for political supporters of his country, if he could call it that, than trying to stop the drug trade. Of course, this "terrorist operation" would take a shot in the pills as well.

"Roger, Charlie-Niner-November," the radio chirped just before a short burst of automatic fire was heard. Two seconds went by before the radio snapped on again.

"Clear!"

"Clear!"

"Clear!"

"Clear."

"Alright. We're good out here."

Rory sighed, looking at his BattleTac display. "We've got a PRIORITY message. We're rallying to kick the door down."

"Who's rallying?"

Rory grinned. "We are. Me and you."

You've got to be kidding me, Jeremy thought. The mission plan had them penciled in for long range recon and sniper support only. He and Rory had been out here alone eyeballing this place for weeks. It was high time to head back to the rear. But no. Not this time. If this is how it was going to be, he and Rory were going to be grossly ill-prepared. *They* would have to be the aggressors during this particular part of the op. Jeremy huffed and looked at his BattleTac, which displayed the new map. *The crummy thing about pencils,* he thought, *is that you can erase what was written.*

"What if we miss?" Rory could hardly contain the giggles. He figured that he should probably laugh as much as possible while he still had the ability to do so, but it came out a bit desperate. He knew that he was in good hands being partnered with Jeremy, but he also knew that he didn't have Jeremy's experience. Experience made a big difference in keeping a guy in this line of work from getting punctured unintentionally.

There was a moment of silence, then Jeremy stared Rory in the eyes. "Don't miss and you'll be fine."

Rory gritted his teeth and pressed the *send* switch on his radio set. "Alpha-Two-Kilo, this is Charlie-Nine-November, over."

"Receiving, Charlie-Nine-November."

"Charlie is moving."

"Charlie is moving. Out."

"I don't think Floyd likes us very much," Rory scowled.

"We should have more operators for this kind of crap," Jeremy was not pleased. Not only was the wind off of the Caspian Sea particularly chilling, but somehow, as usual, it didn't bother Rory one bit. And not having someone to share in your discomfort only made it a little bit harder to cope. Of course, Rory's nerves we're obviously under some pressure, where Jeremy might as well have been baking a loaf of bread. So it must even out some way, he thought.

"It's difficult to enforce your policy in someone else's country," Rory shrugged.

Jeremy let out a restrained chuckle to the affirmative. "Roger that."

"The way I see it, there's got to be something wrong with a guy with no sense of humor," Rory giggled.

Jeremy conceded and took a deep breath, pulling the ruthenium overshirt from his pack. "What's the data on the opposition? Body armor?"

Rory pulled the camoflauged nylon that covered his left forearm up toward his elbow, revealing the BattleTac system display. Pressing a few buttons not only gave Rory the answers to Jeremy's questions, but stats for the entire operation thus far. "Thirteen square miles traversed and cleared. Thirty-three down, seven on account of you and me. Nothing beyond a three-A vest so far. Mostly Bizons and some AKs and M4s for primaries. An assortment of secondaries. No mines, no explosives. MAJINT is a big fat negative, so far. Exterior ground level is clear. There are six heat sigs in the building on level two. Level one looks clear. Alpha and Bravo are resupplying. They're getting ready to move in and head to the sublevels." Rory looked up at Jeremy. "It looked like the guy you just tagged was wearing some of that three-A. But with all the noise we've been making out here, I'd be suprised if the guys underground haven't strapped on all kinds of shite by now."

The BattleTac quietly vibrated against Rory's arm, drawing his attention. An icon representing an incoming message flashed on the screen. He touched the icon. "Echo Team says they're back in the supply line now. They want to know if we need anything before we move in."

"Yeah. Let's get something a little more appropriate for storming a fucking castle. We'll drop the heavy gear we have with Echo. You brought a suppressor with you this time, right?"

With a slight look of concern crossing his face, Rory took his pack off of his back and rifled through it.

A gunshot rang out through the forest, reverberating off of the trees as Rory's attention reverted to his BattleTac display. "Five heat sigs." Rory snickered. "Drone got that one."

Jeremy took off the upper part of his ghillie suit and replaced it with the ruthenium overshirt, pulling its hood over his head, then attaching a wire to the power source on his belt. The black overshirt fit tightly against the plated armor vest underneath it. Jeremy flicked a switch on the power source. "SMF?"

Rory glanced back at Jeremy, seeing that his figure was breaking up into the background nicely. "Sneaky Mother Fucker," he replied in confirmation. Rory went back to looking through his pack. Finding the suppressor, he showed Jeremy his Manhunter in one hand and its suppressor in the other.

"Alright. Get your shit together and let's get out of here."

>> next >>

It was two o'clock in the afternoon on a Tuesday when Jeremy nodded to the security guard as he entered the casino. He walked straight past the cashier's lobby. Past the din of slot machines, full of thousands of grandparents. Past the entrance to the show. *A Sasquatch?* he thought to himself. *I'm either in Vegas or another freaking dimension.* He walked on, thinking to himself. *You're in Vegas* and *another freaking dimension*. That somehow fit better.

He was determined. This schmuck owed him money and was just stupid enough to show up in Vegas with it. The one consolation with this nitwit was that everyone in Vegas knew him. Maybe even trusted him. Particularly those who knew a thing or two about the shadows. Being hooked up with lots of good resources in two major cities across the old "US of A-holes", as the Los Angelinas called it, was a pretty lucrative business, as long as you knew the right people. And knowing those people made it dangerous. Wiser beings ran up the pole as fast as they could manage and got the fuck out of Dodge for a long while afterward. They just vanished. But for this guy, we'll call him "Odds", it might be his one and only saving grace on this day. He had a very bad habit that kept him in biz for a long, long time. Which is why he knew everyone. Everyone in Las Vegas and LA-la-land, anyway. Interest would have to be taken out this way.

There he was. At the craps table. With his back to the door. Jeremy couldn't help but wonder how addicted someone had to be in order to do something this ignorant.

"Hello, Odds."

Odds grimmaced while throwing his dice and turned around. Slowly. He wasn't that stupid. He face went happy and cordial. "Khamûl! Nice to see you here! How's business?"

"My clients are vegetarians. Needless to say, I'm not really in the mood for any bullshit right now." Jeremy smiled.

"I remember days when they saw brightly," said Odds, "Alas, those days are over."

"Seven out," said the dealer. Odds scowled.

"So you're talking like an Elf, too? How grand. I remember a day when *you* saw brightly, Odds. I think those were behind you when you stopped talking like a gangsta from up on Crenshaw." Jeremy feigned scratching his back, holding his jacket behind the 1911 in his IWB.

"Fuck you, man. You wouldn't last a minute out there."

"Gerelan-o té-makkalos-ha, celénit." Jeremy grinned.

"Yeah, that's what your mama said." Odds slapped the table half-heartedly. "What do you *want*, man?"

"The usual."

"I told you man, I'm out of that. And I don't have no money!"

"You were born in, Odds. You don't get out. Don't be a fuckwit."

"I'm serious," Odds said, returning his attention to the craps table. "My cousin Rudy is out of town and I just threw my stack on that piece of shit right there," he said, giving the table a hard stare.

Jeremy waited for Odds to look up at him. When he finally did, Odds found himself a recipient of the crazy white motherfucker stare. Cold. Emotionless. Universally succinct. Odds obviously thought better of laughing. He didn't really know how a guy called 'Khamûl' would react to it. Jeremy finally spoke. "Rudy's watching the Super Monkey Show. If me and Wally over there," Jeremy nodded to another security guard, "have to take you in the back and beat every last chip out of your stupid ass, I'm going to be a little..." Jeremy hesitated, "Well, I win either way, really. I love Vegas!" Jeremy gave an unexpected smile.

"That motherfucker's name is Wally?" Odds asked, looking at the security guard.

Jeremy managed to contain a chuckle, keeping the stare going with only a slight grin. Wally did look more like an off-duty biker than an on-duty security guard. His crew called him "Fucksteam." Bikers are really not such bad guys after you hand them the keys to a full custom chopper and ride to Sturgis with them. Good place to pick up a few cases of COR-BON, too.

"You can call him 'Fucksteam' if you want."

"Fucksteam?"

Jeremy nodded, then motioned for Odds to follow him. "Tell you what, you win back what you own me tonight and I'll let you walk out of here without bleeding all over that nice suit." 'Nice' being a very subjective word, Jeremy thought.

Odds followed. "Khamûl, come on man. I got kids to feed."

"Bring 'em. I'm comped at the noodle bar." Jeremy walked away.

"Come *on*, man!" Odds stomped and cursed under his breath.

"If you're worried about the kids, maybe you should think about making your trips to Vegas a little less frequent. Dangerous place, Vegas." Odds was lagging behind. "Keep up, Dog. We got shit to do."

Odds sighed and tripped up the stairs like a man wrestling against the direction he was heading. "Where we goin'?"

"To get Rudy."

"Rudy's gon'be pissed! He's watchin' the fuckin' bigfoot, man! The fuckin' show! When's the last time you saw a fuckin' bigfoot for real? Motherfucker been out in the woods for the last fo, fy-thousand years a'somethin' and now he's up in Vegas with the mad skills, making that nigga from Police Academy look like a fuckin' eight-bit Nintendo. Fuckin' bigfoot!"

"Rudy's got more important things to do than think about suckin' down a big, hairy, fifteen-inch monkey dick."

"I'm gon'tell him you said that," Odds said, slightly forgetting his last encounter with this Khamûl fool. *Khamûl. Fuckin' terrorist motherfucker. I'll beat the towel off a motherfucker's head...*

"Be my guest," Jeremy said as he showed the doorman two tickets while waiting for Odds to pass. Odds half-stepped through the door, wondering whether Khamûl was replying to the telling-on threat or commenting about the ass-kicking that flashed through his mind. He passed uncertain. Jeremy followed him in.

The crowd was unexpectedly large. This show was cashing in with the tourists. But even so, it didn't take long to spot a bunch of obnoxious assholes off by themselves, in the middle deck, to the right of the stage. Odds looked at Jeremy with concern.

"Go," Jeremy said. About three quarters of the way there, Rudy looked up and saw Jeremy walking behind his cousin. *That stupid motherfucker*, Rudy said, trying not to move his lips. He shot an unpleasant glare at Odds.

He leaned back in his chair, arms across the tops of the chairs on either side of him. "What the fuck do you want?"

Odds spoke, "Aw, man, Khamûl's here, man! You remember fuckin' Khamûl? He's my boy from Englewood."

"This motherfucker ain't never seen Englewood. What the fuck you talkin'bout? Nigga sit down." Odds sat down. Rudy sat forward.

"Awright. What you want this time?" Rudy asked. Jeremy just stared, half smiling. "Come on, man. I ain't got all night. I got about enough crazy-ass dune coons frontin' on me today." The crew chuckled annoyingly.

Jeremy looked over at Odds. "You gonna tell him about the monkey dick or not?" Odds ingored the goading. Rudy looked over at Odds and shrugged his shoulders. "I just got into town. I need a ride and a call to Rooster."

"Rooster? You think I know that hillbilly motherfucker?"

"I Know you know him." Jeremy pulled two wallet-size photos out of his pocket and handed them to Rudy. "That's you passing your pink slip to him." The picture showed Rudy and a tall, red-haired man otherwise well-dressed in a beaten-up cowboy hat, standing in front of a tweaked-out, new model Toyota Supra. A look of barely contained anger flashed across Rudy's face. Jeremy stared blankly. "I figured as long as you're giving them away, you might want to give one to me, too."

Rudy threw the pictures at Jeremy's feet. "I'll be givin' you the worst beating of ya life if you don't get the fuck out my face right now." Two of the bigger, uglier members of Rudy's crew stood up.

Odds jumped up between them and Jeremy, finally remembering their last encounter. "Aw shit no, Rudy. You don't want to do this, man. You want to help a motherfucker out. An I ain't jokin' neither."

"Neither am I," Jeremy said, standing his ground, staring right into Rudy's face without a flinch for a long minute.

Odds buckled. "Fuck this. I'm gettin' the fuck out of here," he said, turning for the door.

"Odds," Jeremy spoke in a commanding tone, warning Odds not to take another step. He stared right past Rudy's weak head game and concentrated on the minute details of his face, analyzing every movement in order to understand which decision Rudy would make. Most of this analysis took place in the eyes. A pupil dialation, the slight spasm of a muscle, the focus of attention. Rudy flinched. Jeremy showed no emotion. Only the prospect of unpredictability.

"Better wipe that smile off ya face, motherfucker." A funny thing to say, considering there wasn't one. It must have made its way through his eyes.

Jeremy grinned. "The look on yours was amusing enough."

"Don't know when to stop," one of the Ork-thugs mumbled in a low, gravelly voice.

"It won't be with you, Tiny. There are about four more asses to kick on the other side of yours." 'Tiny' lurched forward.

"Calm down, nigga, calm down," Rudy said, getting up slowly, turning his attention to this Khamûl fool. "You can follow me if you want." Rudy walked to the exit. Odds and Jeremy followed him, then the crew. Past the slot machines. Past the cashier's. And out the front doors.

>> next >>

Moving back to his old stomping grounds was strange to him. Things were different. Places rearranged. It had only been twelve years, and the middle class neighborhood he'd been raised in was changed into a drastically different beast. Very trendy. They weren't rich and the people around this part of town seemed to sense that they were living a little beyond their means, at least for the moment. But she had a good job at one of those big corporations that advertised the wonders of their new products on every billboard and magazine back cover within two hundred miles. And he had just finished his first day at Ch2M Hill. He had called her at the office to get an idea of what the night would be like. Dinner on her, she said. Home and then back out.

The drive home was hectic. It had been raining a lot in the past few days, which inevitably meant that everyone else would drive as if they'd never been behind the wheel of a car before. But he spent time at the red lights watching the rain bounce off the hood of his car, reflecting against the tail lights of the car ahead of his. He wondered what she had planned for them tonight. She was always so thoughtful. Far more thoughtful that he thought of himself. His mind was always cranking away at a few things at once, and it usually wasn't about things like flowers or dinner or the color to paint the upstairs bathroom. Years of training tended to make thoughts more tactical or mechanical in nature; ways to solve immediate problems. *If it's stupid, but works, it's not stupid.* And that's pretty much how he ended up with a pink upstairs bathroom.

The light turned green.

>>next>>

She'd decided on a little hole-in-the-wall Italian restaurant called Caparzo's in Essex, right off the bay. The celebration was for his new job and their new life away from the military.

"So when are you gonna get all that stuff removed, Hero?" She called him Hero. That was her pet name for him. He still didn't know why. "Is the Army going to pay to take it out?" It seemed a little odd that she'd bring up this kind of thing at this occasion. She knew they weren't supposed to talk about that. It was an unspoken rule. But she opened subtly enough, so he let it slide, and smiled at her instead.

"They turned it all off. A lot of it I'm stuck with. I told you that already," he replied in a somewhat hushed voice.

"Yeah, but they can still remove some of it, right? I mean, like that thing in the palm of your hand. They can fix that, right?"

"I guess they could, I don't know." Jeremy did his best to seem tense towards this line of questioning. Sarah was smart. She'd get the drift.

"So how was your first day? Oh, Hey! Guess what? Janie says her brother-in-law works there too," Her voice faded out as Jeremy scanned the restaurant. He could feel somebody staring at him. Was it the man with a newspaper in the corner? Their eyes met. The man grinned in a kind of funny way, but turned back to his paper. The immediate trained sense of danger kicked in, but the resulting rush of adrenaline didn't do what it was supposed to. The reflex trigger had been disabled. Damned incovienient that this would become a factor right when he'd mentioned it out loud.

The look on his face told Sarah something wasn't right. She turned around quickly and saw nothing out of the ordinary. "What?"

Jeremy watched the man for a few more seconds, making sure that nothing strange was going to happen. *Shit, he probably works here.* He was wearing one of those shirts that chefs always wear. *He's just waiting for us to leave.* It was kind of late Jeremy thought, and he and Sarah were the only two patrons left.

Nevertheless, it felt odd being so out in the open. In the past, they would never have sat in the middle of a restauant. There was really no where to go if something bad were to happen. This was a bad tactical position. *Christ, why didn't I think of this?*

But things like that didn't matter any more. Who was going to come after him here? Nobody had ever come after him, anyways. He was always the guy who came after other guys.

She put her fork down. "What's wrong?"

The man went on reading his paper like any other normal person would.

"Huh?" Jeremy snapped out of his intensity. "Oh... Nothing."

It was still raining when they left the restaurant. The drive back home was silent, almost.

>>next>>

Jeremy woke up in a haze. His whole body was sore. He tried to open his eyes, but nothing happened. Nothing. Total darkness. Though it was a thoroughly unpleasant thing to do, he moved his left hand up to his face. There were bandages.

What the hell happened? Jeremy tried to recall his last memory. That truck. It was coming at them awfully fast. *Swerve.* That's the last thing he remembered. Swerving the car out of the way of a truck that was in the wrong lane. No wait... Was that a dream? It didn't seem like a dream, but it must have been because his body wasn't moving as fast as it should have. Where's Sarah? He could hear her yelling, but the truck wasn't moving out of the way.

"Where am I?" It hurt to talk, too.

"You're safe," a male voice said, coming from the right. "Just relax. Rest."

"Where's Sarah?"

"Go back to sleep, Jeremy. We'll talk later."

A warm feeling came over his body. Comfortable. Sleep seemed much more irresistable than it had moments before. Warmth, then darkness.

>>next>>

He woke up in what seemed like an instant later. There was a trid on in the room. *"It's twelve minutes past the hour, and welcome back to CNN Headline News. The accident that caused the death of New Hampshire Congressman Nick Murray and two others has led some investigators to believe that his vehicle might have been tampered with. Sources say that..."* The soreness was mostly gone, but his back still hurt a little. It felt like he hadn't moved in days. He still couldn't open his eyes. What the hell was going on?

"Who's there?" Couldn't hurt to ask.

"I'm here. How do you feel, Jeremy?" It was the same male voice. A pleasant male voice, with a hint of an accent... English maybe?

"I feel like shit. Where am I?"

"You're safe. You're in a sort of hospital." The voice moved across the room, towards where the sound of the trid had been coming from. Then the trid turned off. There was a faint sound of telephones ringing in the background.

Jeremy groaned, trying to move his body backwards against the head of the bed. "What's wrong with my eyes?"

"You haven't got any at the moment. They're being reconstructed for you." The voice sighed. "You've been in an accident, Jeremy. You've had to undergo some substantial surgery. Mostly reconstructive, to your head and face. Your eyes were destroyed."

What the fuck!? "Where's Sarah?" The voice was silent, but Jeremy could hear movement back to the direction where the voice originated, to his right.

"She's dead, Jeremy."

"She's dead?" Jeremy's chest instantly seized. He knew it already. He could barely remember swerving. The truck hit her side of the car. He tried to suppress the emotions, but it was impossible. "What happened?"

"Your car was struck by another. The man driving the other vehicle had been under the influence of alcohol." The voice stopped for a minute or two, allowing Jeremy to regain his composure. "If it means anything to you, she was killed instantly. She felt nothing. I'm sorry I had to be the one to inform you, Jeremy. Especially under these circumstances."

"Who are you?" He could hear a chair creak.

"You can call me Gabriel."

Jeremy snickered. "That figures."

What had happened? This was insane. Sarah was dead, and his eyes had been removed after the accident? None of it made any sense. How was he supposed to know what was truth or not? Sarah could be lying in the next room for all he knew. It only took him a few moments to realize that he did know. He knew she was gone. The memory was too vivid. Jeremy wanted to die as well. There wasn't anything left. If Sarah was gone, his life was over. He'd quit the Green Berets because it was too dangerous. She wanted kids. *This is wrong! Something is wrong! Oh God, please, no!*

He'd started to cry again, but at that instant, his stomach felt like it had been twisted in knots. He suddenly felt ill. *Wait a second...* He must not have eaten in a while. He sniffled, covering the bandages around his eyes with his hands, ashamed. "Gabriel, I'm hungry."

"I'll see about getting you some food."

Gabriel was here to protect him? "How long have I been out?"

"Three days. Your eyes will be ready in three more. They say you'll be able to see again within a week, Jeremy. Your people have definitely got a hand on technology." Ten years ago, it might have taken upwards of a month to grow a new set of eyes, Gabriel thought. And even then, would they have known how to attach the stranded wires to the brain of a man? It was simply fascinating what they could do in these times.

"I don't like this."

"I didn't either." Gabriel chuckled.

"Was she buried?" He couldn't hold it back. Nothing had prepared him for this. Not the endless training at Benning and Bragg, not the jumping out of airplanes, not the thirty-mile hump across Morocco and the insuing gun battle afterwards. Not the emotional hardening that happens after you bury fallen comrades. Nothing could stop it. Except maybe, that he didn't have eyes. That though caused a slight chuckle in the midst of sobbing. But he found out soon enough that a lack of eyes didn't stop tears either. He couldn't believe that Sarah was dead. They'd been together forever. He couldn't remember what it was like without her.

"She was cremated. As were you. It was her will." The voice came from directly above him this time. Jeremy jerked back into the bed.

I was cremated? What the!?... Oh, no. "Am... Am I dead, Gabriel?" Jeremy asked in a waivering voice.

Gabriel took a deep breath and sighed. "Not exactly."

"What's that supposed to mean?" Jeremy started to shake. He was frightened. There was no way out. He couldn't see. And he couldn't fight without eyes, could he? He couldn't leave and find out for himself what the problem was.

"We'll talk about it when you've regained your sight. You will understand much afterwards." Something touched Jeremy's right hand and moved against it, leaving a slightly wet trail behind. Whatever it was, it gave Jeremy the most comforting sense of safety he'd ever felt in his life. The wetness was soon taken over by a warm sensation throughout his whole body. Then there were fingers that curled their way around Jeremy's hand.

But they didn't feel human. "Rest."

.22 Long Rifle

Weapon Type	Base Damage Code
Hold-Out	4L
Light Revolver/Pistol	5L
Sport Rifle	5M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 29-42	Case Length (in/mm): .595/15.1	Count/Box: 500
Velocity (fps): 1680-1220	Primer: Rimfire	Conceal/Box: 4

Suppression: Velocity control rules apply. +6 to Perception Tests involving a suppressed weapon firing this cartridge.

Additional: Though this cartridge is rimmed, it is used in some light automatic pistols designs such as the Ruger Mark II and the Browning Buck Mark.

Payloads Available	Effect	Cost / 500
Round Nosed Lead	Regular	8 ¥
Wadcutter/Semi-wadcutter	Regular	8 ¥
Lead Hollowpoint	Regular	8 ¥
+P (Hyper Velocity Hollowpoint)	+1 Power	9 ¥
Tracer	Tracer rules	+5 ¥/box
Subsonic Lead Hollowpoint	-1 Power	8 ¥

Description

A very light, small and handy rimfire cartridge used mostly for casual plinking and varmint hunting in many weapon types. Bullet diameter is .223".

Not an adequate choice for a self-defense weapon, but its small size can pack a nasty suprise in a very small hold-out pistol.

When someone says "I've got a .22," more often than not they mean a gun that fires this cartridge.

.32 Harrington & Richardson Magnum (.32 H&R Magnum)

Weapon Type	Base Damage Code
Hold-Out	5L
Light Revolver	5M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 85-95	Case Length (in/mm): 1.08/27.4	Count/Box: 50
Velocity (fps): 1100-815	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Frangible	Flechette Rules	140 ¥

Description

The .32 H&R Magnum is the result of a joint development by Federal Cartridge Company and Harrington & Richardson, who made the revolvers. It consists of the .32 S&W Long case lengthened to 1.08". Bullet diameter is .312".

Revolvers chambered for this cartridge will also fire .32 S&W and .32 S&W Long cartridges. This is a somewhat popular chambering for small hold-out revolvers.

.357 Magnum

Weapon Type	Base Damage Code
Hold-Out	7M
Heavy Revolver	9M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 110-180	Case Length (in/mm): 1.29/32.7	Count/Box: 50
Velocity (fps): 1500-1090	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 50
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
Soft Armor Piercing	-2 Armor Rating	35 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	140 ¥
Subsonic Jacketed Hollowpoint (VC)	Hollowpoint Rules -1 Power	8 ¥

Description

A very powerful and accurate rimmed revolver cartridge with a long history and well-deserved respect. Introduced by Smith & Wesson in 1935.

The .357 Magnum is considered a standard revolver self-defense cartridge, and is used commonly in long range handgun competitions.

Weapons chambered for the .357 Magnum may also fire the .38 Special cartridge with no modification.

.38 Special

Weapon Type	Base Damage Code
Hold-Out	4M
Light Revolver	5M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 110-200	Case Length (in/mm): 1.16/29.4	Count/Box: 50
Velocity (fps): 1000-730	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver Cartridge. No adverse effects.

Additional: This cartridge can also be fired from .357 Magnum revolvers.

Payloads Available	Effect	Cost / 50
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	12 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
+P (Full Metal Jacket)	+1 Power, -1 Armor Rating	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Reverse Ogive	Reverse Ogive Rules	15 ¥
Frangible	Flechette Rules	140 ¥

Description

A very accurate rimmed revolver cartridge with a long history and well-deserved respect. Developed by Smith & Wesson in 1902. Bullet diameter is .357".

The .38 Special is considered a standard revolver self-defense cartridge, and is used commonly in handgun competitions.

.41 Magnum

Weapon Type	Base Damage Code
Heavy Revolver	9M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 170-210	Case Length (in/mm): 1.28/32.5	Count/Box: 20
Velocity (fps): 1400-965	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost / 20
Full Metal Jacket	Regular	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	18 ¥
+P (Full Metal Jacket)	+1 Power	20 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	25 ¥
Soft Armor Piercing	-2 Armor Rating	40 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	45 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power	15 ¥
Subsonic JHP (Velocity Controlled)	Hollowpoint Rules -1 Power	18 ¥

Description

Introduced in 1964 by Remington to coincide with the introduction of Smith & Wesson's Model 57 revolver.

Though the popularity of this cartridge has declined over the years, it is still a perfectly capable medium game handgun hunting load, and a more than adequate self-defense load.

.44 Special

Weapon Type	Base Damage Code
Medium Revolver	8M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 180-246	Case Length (in/mm): 1.16/29.4	Count/Box: 20
Velocity (fps): 1035-750	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Additional: This cartridge can also be fired from .44 Magnum revolvers.

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	14 ¥
Full Metal Jacket	Regular	15 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	20 ¥
Wadcutter/Semi-wadcutter	Regular	14 ¥
+P (Full Metal Jacket)	+1 Power	18 ¥
+P (Jacketed Hollowpoint)	HP Rules +1 Power	25 ¥
Reverse Ogive	Reverse Ogive Rules	20 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	155 ¥

Description

A moderately powerful and accurate rimmed revolver cartridge Introduced by Smith & Wesson in 1907. Bullet diameter is .429".

The .44 Special is usually subloaded by factories, but handloading can bring this cartridge up to nearly the equal of the .44 Magnum (+P, 9M). It is completely adequate as a self-defense cartridge, and is used commonly in handgun competitions.

.44 Magnum

Weapon Type	Base Damage Code
Heavy Revolver	10M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 180-250	Case Length (in/mm): 1.28/32.5	Count/Box: 20
Velocity (fps): 1500-1180	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: No.

Additional: +1 Recoil Modifier

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	14 ¥
Hard Cast Lead	Regular	15 ¥
Jacketed Hollowpoint	Hollowpoint Rules	25 ¥
Wadcutter/Semi-wadcutter	Regular	15 ¥
Reverse Ogive	Reverse Ogive Rules	25 ¥
Armor Piercing Reverse Ogive	APRO Rules	40 ¥
Frangible	Flechette Rules	160 ¥

Description

Considered the premier heavy revolver cartridge by many, the .44 Magnum is a standard by which all others are judged. Introduced by Remington in 1955. Bullet diameter is .429".

Popularized by Clint Eastwood's *Dirty Harry* movies, the .44 Magnum was considered the world's most powerful commercial handgun cartridge for some time.

The .44 Magnum is considered to be far too powerful for self-defense purposes. However, it is commonly used as a handgun hunting cartridge and in long range handgun competitions.

.45 Colt

Weapon Type	Base Damage Code
Heavy Revolver	8M

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 185-255	Case Length (in/mm): 1.29/32.7	Count/Box: 20
Velocity (fps): 1100-800	Primer: Centerfire, Boxer, LP	Conceal/Box: 8

Suppression: Revolver cartridge. No adverse effects.

Additional: This cartridge can also be fired from .454 Casull revolvers.

Payloads Available	Effect	Cost / 20
Round Nosed Lead	Regular	12 ¥
Full Metal Jacket	Regular	13 ¥
Expanding Full Metal Jacket	Hollowpoint Rules	20 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Wadcutter/Semi-wadcutter	Regular	12 ¥
+P, (Full Metal Jacket)	+1 Power, -1 Armor Rating	18 ¥
+P, (Jacketed Hollowpoint)	HP Rules +1 Power	20 ¥
Frangible	Flechette Rules	155 ¥

Description

Originally a blackpowder cartridge, the .45 Colt was introduced in 1873 for use in Colt's famous "Peacemaker" revolver. Bullet diameter is .454".

Known as "the cartridge that tamed the west," the modern smokeless powder version of the .45 Colt is a heavy rimmed revolver cartridge readily adequate for self-defense use and beyond.

Heavily loaded smokeless powder versions (+P) of the .45 Colt are not suitable for use in the older blackpowder pistols, and could lead to serious injury if used.

.454 Casull

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: JHP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 240-300	Case Length (in/mm): 1.39/35.3	Count/Box: 20
Velocity (fps): 1915-1355	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Jacketed Hollowpoint	Hollowpoint Rules	30 ¥
Jacketed Soft Point	Hollowpoint Rules	30 ¥
Hard Cast Lead Flat Point	Regular	30 ¥

Description

Developed by Dick Casull and Jack Fulmer in 1957, and originally introduced under the name .454 Mangum Revolver.

Known as one of the world's most powerful handgun cartridges, the .454 Casull is capable of reaching energy levels very close to 2000 foot-pounds at the muzzle.

.475 Linebaugh

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 370-440	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 1495-1000	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity Control rules apply.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	30 ¥
Jacketed Soft Point	Hollowpoint Rules	30 ¥
Jacketed Hollowpoint	Hollowpoint Rules	40 ¥

Description

Developed by John Linebaugh in 1988. This is another contender for the "world's most powerful handgun cartridge."

The .475 Linebaugh is based off of the .45-70 Government case, cut to 1.5" and reamed to accept .475" bullets up to 440 grains. Boom.

.500 Linebaugh

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 400-500	Case Length (in/mm): 1.405/35.7	Count/Box: 20
Velocity (fps): 1320-1250	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional: +2 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	30 ¥
Jacketed Soft Point	Hollowpoint Rules	35 ¥
Jacketed Hollowpoint	Hollowpoint Rules	35 ¥

Description

Another development of John Linebaugh, and yet another contender for the "world's most powerful handgun cartridge."

The .500 Linebaugh is based off of the .348 Winchester case, cut to 1.405" and reamed to accept .510" bullets of up to 500 grains. KA-BLAM.

.500 Smith & Wesson Magnum

Weapon Type	Base Damage Code
Heavy Revolver	10S

Primary Bullet: HCLFP	Case: Rimmed, Straight	Reload: Yes
Bullet Mass (gr): 275-440	Case Length (in/mm): 1.625/41.2	Count/Box: 20
Velocity (fps): 1665-1625	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: No.

Additional: +3 Recoil Modifier

Payloads Available	Effect	Cost / 20
Hard Cast Lead Flat Point	Regular	60 ¥
Jacketed Soft Point	Hollowpoint Rules	60 ¥
Jacketed Hollowpoint	Hollowpoint Rules	58 ¥

Description

Developed as a joint venture between Smith & Wesson (who designed and built the revolvers) and Peter Pi's Cor-Bon, who developed the ammunition, the .500 Magnum was announced at the 2003 SHOT Show. The S&W Model 500 was then crowned the most powerful production revolver in existence.

4.6x30mm HK MP7

select a cartridge SHADOWRUN AND FIREARMS

4.6x30mm HK MP7

Weapon Type	Base Damage Code
Medium Pistol	5M
Submachine Gun	5M
Light Carbine	5M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 25	Case Length (in/mm): 1.18/30	Count/Box: 100
Velocity (fps): 2380	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: Velocity Control rules apply.

Additional Info: Because of this cartridge's velocity, FMJ ammunition automatically receives a x0.75 Armor Rating modifier. This modifier does not apply to frangible or deformation loads.

Payloads Available	Effect	Cost/100
Full Metal Jacket	x0.75 Armor Rating	30 ¥
Armor Piercing	x0.5 Armor Rating	35 ¥
Frangible	+1 Power, 2x BallisticAR	35 ¥
Deformation	+1 Power, 1.5x BallisticAR	30 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed to compete directly with Fabrique Nationale's P90 Personal Defense Weapon, the Heckler & Koch MP7 was developed during the 1990's and announced officially in 2001.

Like the 5.7x28mm FN cartridge, the 4.6x30 HK is essentially a small rifle cartridge with a copper-jacketed steel bullet that exhibits improved body armor penetration capabilities at ranges up to 200 meters.

5.7x28mm FN P90

Weapon Type	Base Damage Code
Medium Pistol	5M
Submachine Gun	6M
Light Carbine	6M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 32-55	Case Length (in/mm): 1.10/28	Count/Box: 100
Velocity (fps): 2345-985	Primer: Centerfire, Berdan	Conceal/Box: 6

Suppression: Velocity Control rules apply. -3 Power.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost/100
Full Metal Jacket Boat Tail (FMJ-BT)	x0.75 Armor Rating	30 ¥
Light Armor Piercing	x0.5 Armor Rating	40 ¥
Subsonic FMJ (Velocity Controlled)	-1 Power, -1 DL	45 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed in the late 1980's by Fabrique Nationale for the P90 Personal Defense Weapon. Designed to replace the 9mm Parabellum.

Essentially a small rifle cartridge with a copper-jacketed steel/aluminum bullet, the 5.7x28mm exhibits improved body armor penetration capabilities at ranges up to 200 meters.

.30 Carbine

Weapon Type	Base Damage Code
Heavy Revolver	9M
Light Carbine	10M

Primary Bullet: FMJ	Case: Rimless, Straight	Reload: Yes
Bullet Mass (gr): 85-110	Case Length (in/mm): 1.29/32.7	Count/Box: 50
Velocity (fps): 2460-1900	Primer: Centerfire, Boxer, SP	Conceal/Box: 8

Suppression: Revolver cartridge. Velocity control rules apply.

Payloads Available	Effect	Cost/50
Full Metal Jacket	Regular	12 ¥
Jacketed Hollowpoint	Hollowpoint Rules	15 ¥
Armor Piercing Discarding Sabot	x0.5 Armor Rating	35 ¥
Frangible	Flechette Rules	140 ¥
Subsonic Jacketed Hollowpoint (VC)	Hollowpoint Rules -1 Power	30 ¥
Tracer	Tracer	+30 ¥/box

Description

The .30 Carbine was developed by Winchester during WWII for a weapon intended to fill the gap between a rifle and a handgun. The result was the M1 Carbine.

The .30 Carbine cartridge has since been chambered in some revolvers. This is a relatively simple procedure because the .30 Carbine case is the same length as the .357 Magnum's.

5.56x45mm NATO (.223 Remington)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.77/45	Count/Box: 50
Velocity (fps): 3300-2870	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Light Armor Piercing	-1 power, x0.5 Armor	30 ¥
Ballistic Tip	Hollowpoint + Match	18 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed by Bob Hutton for Eugene Stoner's AR-15 rifle, which was adopted by the US military in 1964 as the M-16. The cartridge was introduced commercially shortly thereafter by Remington as the .223 Remington. Adopted by NATO in 1982 after a slight redesign.

This round was adopted in order to increase hit probability at a range of about 500 meters. It accomplishes that job well, though the round does have its detractors.

More...

.243 Winchester (6.16x51mm)

Weapon Type	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: SP	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 85 grains	Case Length: 52mm	Count/Box: 20
Typical Velocity: 3100 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	18 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥

Description

Introduced by Winchester in 1955, the .243 is the .308 Winchester case necked down to accept .243" (6mm) bullets.

Since its introduction, the .243 Winchester has become one of the more popular American hunting cartridges. It is well known for its versatility, used for anything from long range varmint hunting to deer to police sharpshooting.

6.5x55mm Swedish (Swedish Mauser)

Weapon Type	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: SP	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 140 grains	Case Length: 55mm	Count/Box: 20
Typical Velocity: 2600 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: Subsonic ammunition available.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	12 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥
Subsonic SP (Velocity Controlled)	-5 Power	12 ¥

Description

Another very versatile cartridge, the 6.5x55mm was adopted by the Swedish Army in 1894, and is still a very popular hunting and target shooting cartridge in Scandinavia and Europe.

Prior to WWII, it was it was almost unknown in North America. Low recoil and superb accuracy are the two main contributing factors to this cartridge's rise in popularity.

7mm Remington Magnum (7mm Rem Mag)

Weapon Type	Base Damage Code
Sport Rifle	11S
Sniper Rifle	11S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 63.5mm	Count/Box: 20
Typical Velocity: 3110 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Ballistic Tip	Hollowpoint + Match	22 ¥

Description

The 7mm Remington Magnum was introduced by Remington along with their Model 700 bolt-action rifle in 1962. Both rifle and cartridge have become North American standards since.

This is a very powerful overbore cartridge, known to be relatively tough on barrels. It is commonly used for long range deer/elk hunting, but has shown advantages when used for long range sniping.

.303 British

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: SP	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 175 grains	Case Length: 56.3mm	Count/Box: 20
Typical Velocity: 2440 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	18 ¥
Soft Point ("Dum-Dum")	Hollowpoint	15 ¥

Description

The .303 British was the official military rifle cartridge of the British Empire from its adoption in 1888 until the 7.62x51mm NATO was adopted in 1953.

Originally a blackpowder cartridge, the .303 British was one of the first military cartridges to transfer to smokeless powder in the late 19th century.

This is a popular hunting cartridge in (former) British satellite countries.

7.62x51mm NATO (.308 Winchester)

Weapon Type	Base Damage Code
Battle Rifle/Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 51mm	Count/Box: 20
Typical Velocity: 2750 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: Subsonic ammunition available.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	20 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥
Frangible	Flechette Rules	65 ¥
Explosive	+1 Power	40 ¥
Subsonic SP (Velocity Controlled)	Damage drops to 7M	12 ¥
Tracer	Tracer rules	+5 ¥/box

Description

".308 Winchester" is the commercial name for the 7.62x51mm T65 military cartridge developed in the US and adopted by NATO in 1954.

The .308 Winchester cartridge is one of the more widely known cartridges throughout the world, due to its acceptance by NATO. It has seen use in battle rifles, machine guns, sniper rifles, hunting rifles, target rifles... You name it, the .308 has probably been used for it and to very good effect as well.

7.62x53Rmm Russian (7.62x54mm Russian Rimmed)

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 53.5mm	Count/Box: 20
Typical Velocity: 2880 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing	x0.5 Armor Rating	27 ¥
Armor Piercing Incendiary	Above + Incendiary	30 ¥
Explosive	+1 Power	45 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Adopted by Russia in 1891 with the Mosin-Nagant bolt-action rifle, the standard rifle of the Soviet Army through WWII.

More commonly found in Asian and eastern European countries formerly under Soviet influence, the 7.62x53Rmm Russian is a popular hunting cartridge as well as a sniper rifle cartridge, used most notably in the Dragunov SVD semi-automatic rifle.

30-06 Springfield (30-06 Government, 7.62x63mm)

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rebated, Necked	Reload: Yes
Bullet Weight: 172 grains	Case Length: 63mm	Count/Box: 20
Typical Velocity: 2640 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing	x0.5 Armor Rating	27 ¥
Armor Piercing Incendiary	Above + Incendiary	30 ¥
Explosive	+1 Power	45 ¥
Subsonic SP (Velocity Controlled)	DC drops to 7M	15 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Developed by the US Springfield Arsenal and introduced in 1906 as a spitzer-bulleted replacement for the 30-03 cartridge in the M1903 bolt action rifle.

The 30-06 was used by the US Army through two world wars in various types of weapons. In that time it became a popular North American deer and elk hunting cartridge. Today it is a standard by which all other hunting cartridges are judged.

.300 Winchester Magnum (.300 Win Mag)

Weapon Type	Base Damage Code
Sport Rifle	12S
Sniper Rifle	12S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Weight: 180 grains	Case Length: 66.5mm	Count/Box: 20
Typical Velocity: 3000 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	30 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥

Description

The .300 Winchester Magnum was introduced by Winchester in 1963 in the Model 70 bolt-action rifle. Both rifle and cartridge have become North American standards since.

This is very powerful overbore cartridge, commonly used for long range big game hunting, but has shown promise as a long range sniping cartridge, adopted by the US Navy in 1992.

.338 Lapua Magnum (8.6x70mm Lap Mag)

Weapon Type	Base Damage Code
Sport Rifle	14S
Sniper Rifle	14S

Primary Bullet: FMJ-BT	Case: Rebated, Necked	Reload: Yes
Bullet Weight: 250 grains	Case Length: 70mm	Count/Box: 20
Typical Velocity: 2950 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Probably one of the first cartridges ever to be developed specifically for long range anti-personnel sniping/medium range anti-matériel work, Research Armament Co. intruduced this cartridge in 1983 using a necked-down and shortened .416 Rigby case.

Lapua of Finland was subsequently tasked by the US Navy to improve the cartridge. The case was strengthened a bit and the result was introduced as the .338 Lapua Magnum.

.408 Cheyenne Tactical (.408 CheyTac)

Weapon Type	Base Damage Code
Anti-Matériel Rifle	12D

Primary Bullet: Match	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 419 grains	Case Length: NA	Count/Box: 20
Typical Velocity: 2890 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Developed by Cheyenne Tactical and Tactical High Energy Impact Systems (THEIS), this cartridge is based on the .505 Gibbs case, strengthened and necked-down to .408".

The .408 CheyTac was designed from the start as a long range, high-energy sniper/anti-matériel rifle cartridge, to fill the void between the 7.62x51mm NATO and .50 BMG cartridges used in sniping roles by militaries at the turn of the 21st century.

.22 Sniper Subsonic (.22SSS)

Weapon Type	Base Damage Code
Light Pistol/Revolver	4L
Sport Rifle	4M
Sniper Rifle	4M

Primary Bullet: RNL	Case: Rimmed, Straight	Reload: No
Bullet Mass (gr): 60	Case Length (in/mm): 0.3/7.6	Count/Box: 500
Velocity (fps): 950	Primer: Rimfire	Conceal/Box: 5

Suppression: +6 to Perception Modifiers.

Additional Info: Use Heavy Pistol ranges. **Suppressor must be removed before firing supersonic ammunition or damage to the weapon could occur.**

Subsonic Payloads	Effect	Cost / 500
Regular	Regular	45 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by Aguila Ammunition in 2000, this cartridge is intended for use in sound-suppressed pistols and rifles chambered for the .22 Long Rifle cartridge.

The .22SSS uses a shortened .22LR case with a heavy 60-grain RNL bullet. Overall length is identical to the .22LR, therefore the .22SSS can be chambered in almost any .22LR weapon.

6.5mm Whisper®

Weapon Type	Base Damage Code
Carbine	5M
Assault Rifle	6M
Sport Rifle	6M
Sniper Rifle	6M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 100-155	Case Length (in/mm): 1.36/34.5	Count/Box: 20
Velocity (fps): 2300-970	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	HP, +3 Power	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge is intended for use in sound-suppressed AR-15's, bolt-action rifles and T/C Contenders.

Based on the .221 Fireball case. Bullet diameter is .264 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

7mm Whisper®

Weapon Type	Base Damage Code
Carbine	6M
Assault Rifle	7M
Sport Rifle	7M
Sniper Rifle	7M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 120-168	Case Length (in/mm): 1.36/34.5	Count/Box: 20
Velocity (fps): 2250-1050	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	+3 Power, HP+Match	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge is intended for use in sound-suppressed AR-15's, bolt-action rifles and T/C Contenders.

Based on the .221 Fireball case. Bullet diameter is .284 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

.300 Whisper®

Weapon Type	Base Damage Code
Carbine	7M
Assault Rifle	8M
Sport Rifle	8M
Sniper Rifle	8M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 125-250	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 2285-980	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers. **+2 to Perception Modifiers for suppressed supersonic loads.**

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Advanced Match Accuracy (AMAX)	Match	35 ¥
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Armor Piercing	x0.75 Armor Rating	40 ¥
Explosive	+1 Power	80 ¥
Tracer	Tracer	+10 ¥/box
Supersonic Payloads (x0.75 Armor Rating)	**Effect**	**Cost / 20**
Full Metal Jacket, Boat Tail	+3 Power	20 ¥
Hollow Point, Boat Tail, Match	+3 Power, HP+Match	25 ¥
Armor Piercing	x0.5 Armor Rating	40 ¥
Explosive	+4 Power	80 ¥
Tracer	Tracer	+10 ¥/box

Description

Designed by J.D. Jones in the early 1990's, this cartridge was the first of the Whisper cartridges and is intended for use in sound-suppressed AR-15's.

The .300 Whisper® is probably the most versatile of the Whisper® series cartridges. It is based on the .221 Fireball case. Bullet diameter is .308 inches.

Supersonic loadings defeat the design purpose of this round but are available and do provide increased velocity, energy and penetration at the expense of greater noise.

This cartridge has found limited use in some SWAT and Special Forces units.

.338 Whisper® and .338 Whisper® #2

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 200-300	Case Length (in/mm): 1.47/37.3	Count/Box: 20
Velocity (fps): 1075-1040	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Sport Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	30 ¥
Armor Piercing	x0.75 Armor Rating	45 ¥
Armor Piercing Incendiary	x0.75 Armor Rating	60 ¥
Explosive	+2 Power	60 ¥
Tracer	Tracer	+10 ¥/box

Description

There are actually two versions of the .338 Whisper®. The original .338 Whisper® is based on the 7mm Remington Benchrest case, which simplifies conversion of rifles that use .308 Winchester case head dimensions (.470").

The .338 Whisper® #2 is based on the .221 Fireball case. This allows easier conversion from rifles originally chambered in .223 Remington, such as the AR-15 and variants.

9x39mm Soviet (9.3x39mm Russian Silent)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: AP	Case: Rimless, Necked	Reload: No
Bullet Mass (gr): 235-255	Case Length (in/mm): 1.52/38.8	Count/Box: 20
Velocity (fps): 985-920	Primer: Centerfire, Berdan, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Armor Piercing (SP-5, steel core)	x0.75 Armor Rating	35 ¥
Armor Piercing (SP-6, steel tip)	x0.75 Armor Rating	35 ¥
Armor Piercing (PAB-9)	x0.75 Armor Rating	25 ¥
Tracer	Tracer	+50 ¥/box

Description

The 9x39mm Soviet cartridge was developed for the VSS Vintorez sniper rifle and AS Val assault rifle. It has since been chambered in a vast array of Russian assault rifles and submachine guns.

Based on the same principle as the Whisper® cartridges, the 9x39mm uses the 7.62x39mm case necked up to acccept .365" bullets, most commonly AP types.

.375 Whisper®

Weapon Type	Base Damage Code
Carbine	8M
Sport Rifle	9M
Sniper Rifle	9M

Primary Bullet: HPBT Match	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 250-300	Case Length (in/mm): 1.5/38.1	Count/Box: 20
Velocity (fps): 1050-950	Primer: Centerfire, Boxer, SR	Conceal/Box: 8

Suppression: No adverse effects in subsonic form. +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Assault Rifle ranges for all weapon types.

Subsonic Payloads	Effect	Cost / 20
Ballistic Tip (Expanding)	Expanding	30 ¥
Soft Point, Boat Tail	Expanding	30 ¥

Description

The .375 Whisper is based on the 7mm Remington Benchrest case, which simplifies conversion of rifles that use .308 Winchester case head dimensions (.470").

The .375 Whisper® may fare a little better as a hunting round than its .338 sibling, but in just about any other area, the .338 has it beat largely because of the wider variety of bullet types available for it.

.500 Whisper® and .510 Whisper®

Weapon Type	Base Damage Code
Sport Rifle	9D
Sniper Rifle	9D

Primary Bullet: HPBT Match	Case: Belted or Rimless	Reload: Yes
Bullet Mass (gr): 600-900	Case Length (in/mm): Varies	Count/Box: 20
Velocity (fps): 1050-950	Primer: Centerfire, Boxer, LR	Conceal/Box: 8

Suppression: +6 to Perception Modifiers.

Additional Info: Suppression and Velocity Control Rules
Use Sniper Rifle ranges.

Subsonic Payloads	Effect	Cost / 20
Full Metal Jacket (FMJ)	-	50 ¥
Soft Point (Expanding)	Expanding	85 ¥
Advanced Match Accuracy (AMAX)	Match	75 ¥
Armor Piercing	Hollowpoint	75 ¥
Armor Piercing Incendiary	x0.5 Armor	90 ¥
High Explosive Incendiary Armor Piercing	+2 Power, x0.5 Armor	140 ¥
Tracer	Tracer	+10 ¥/box

Description

The .500 Whisper® is intended to provide unmatched long range energy from a suppressed rifle, with the additional possibility of firing .50 BMG payloads at subsonic velocities.

The .500 Whisper® is based on the belted .460 Weatherby Magnum case, trimmed to 2" and necked to accept .510" bullets.

The .510 Whisper® is based on the rimless .338 Lapua Magnum case, trimmed to 1.875" and necked to accept .510" bullets.

Capable of MOA accuracy at 600 meters, the .500 Whisper can be used for light anti-vehicle/materiel work with the proper payload.

9x90mm Metallwerk Elisenhütte Nassau (MEN)

Weapon Type	Base Damage Code
Anti Matériel Rifle	13D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 340	Case Length (in/mm): 3.54/90	Count/Box: 100
Velocity (fps): 3440	Primer: Centerfire, Boxer, BMG	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail (Match)	See Above	1,000 ¥
Armor Piercing	See Above	1,250 ¥
Armor Piercing Incendiary	Above + Incendiary	1,580 ¥
Tracer (not available with Match)	Tracer rules	+150 ¥/ box

Description

Developed by Metallwerk Elisenhütte Nassau (MEN) for a long-range, light-anti-matériel automatic sniper rifle (WSG2000) designed but never put into production by Heckler & Koch in the early 1990's.

Based on the .50 BMG case, shortened to 90mm and necked down to 9mm.

.408 Cheyenne Tactical (.408 CheyTac)

Weapon Type	Base Damage Code
Anti-Matériel Rifle	12D

Primary Bullet: Match	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 419 grains	Case Length: NA	Count/Box: 20
Typical Velocity: 2890 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost/20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer (not available with Match)	Tracer rules	+5 ¥/box

Description

Developed by Cheyenne Tactical and Tactical High Energy Impact Systems (THEIS), this cartridge is based on the .505 Gibbs case, strengthened and necked-down to .408".

The .408 CheyTac was designed from the start as a long range, high-energy sniper/anti-matériel rifle cartridge, to fill the void between the 7.62x51mm NATO and .50 BMG cartridges used in sniping roles by militaries at the turn of the 21st century.

.50 Browning (12.7x99mm Browning Machine Gun, .50 BMG)

Weapon Type	Base Damage Code
Anti Matériel Rifle	14D
Heavy Machine Gun	14D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 660-900	Case Length (in/mm): 3.9/99	Count/Box: 100
Velocity (fps): 3080-2550	Primer: Centerfire, Boxer, BMG	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket	See Above	250 ¥
Match (AMAX)	Above + Match	350 ¥
Armor Piercing (M33)	x0.5 Armor Rating	350 ¥
Armor Piercing Incendiary (M20)	x0.5 Armor + Incendiary	450 ¥
Armor Piercing Discarding Sabot (M903)	APDS	750 ¥
High Explosive Armor Piercing Incendiary	APDS+Inc+2 Power+Match	2,200 ¥
Tracer (not available with Match)	Tracer	+150 ¥/box

Description

Yet another invention of John M. Browning, the .50 BMG was designed during WWI and adopted shortly after for use in Browning's M2 machine gun. It is essentially the 30-06 scaled up to .50 caliber.

After many years of being considered inadequate in the role for which it was designed, the .50 BMG made a comback during the 1980's as several new payloads were developed for the round, such as the Saboted Light Armor Penetrator (SLAP).

The .50 BMG also saw resurrection as a anti-matériel sniping round at about the same time.

12.7x108mm Soviet

Weapon Type	Base Damage Code
Anti Matériel Rifle	14D
Heavy Machine Gun	14D

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 790	Case Length (in/mm): 4.25/108	Count/Box: 100
Velocity (fps): 2705	Primer: Centerfire, Boxer, VLR	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail	See Above	250 ¥
Match (AMAX)	Above + Match	350 ¥
Armor Piercing	x0.5 Armor Rating	350 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	450 ¥
Armor Piercing Discarding Sabot	APDS	750 ¥
High Explosive Armor Piercing Incendiary	Above+2 Power+Incendiary	2,200 ¥
Tracer (not available with Match)	Tracer	+150 ¥/box

Description

Originally an anti-aircraft munition, the first ground application for the 12.7mm Soviet was in the Soviet DShK heavy machine gun introduced in 1938.

Though slightly longer, it is basically the Russian answer to the US .50 Browning cartridge and is far more common in Asian countries and former Soviet satellite states.

14.5x114mm Soviet

Weapon Type	Base Damage Code
Anti Matériel Rifle	18D
Heavy Machine Gun	18D

Primary Bullet: API	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 990	Case Length (in/mm): 4.49/114	Count/Box: 100
Velocity (fps): 3200	Primer: Centerfire, Boxer, VLR	Conceal/Box: NA

Suppression: No.

Additional Info: Because of this cartridge's size and ballistics, it automatically ignores all forms of soft body armor. AP reduces hardened armor ratings by half.

Payloads Available	Effect	Cost/100
Full Metal Jacket, Boat Tail	See Above	850 ¥
Armor Piercing	x0.5 Armor Rating	1,100 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	1,650 ¥
Armor Piercing Discarding Sabot	APDS	1,500 ¥
High Explosive Armor Piercing Incendiary	Above+2 Power+Incendiary	3,100 ¥
Tracer	Tracer	+200 ¥/box

Description

The 14.5x114mm Soviet was introduced in the PTRS and PTRD anti-tank rifles during WWII and has served in various machine guns and anti-materiel rifles since.

The original load was an armor-piercing incendiary round weighing in at 990 grains and fired at a velocity of 3,200 feet per second. That develops over 22,500 foot pounds of kinetic energy. If that's not a busted APC waiting to happen, I don't know what is.

Twenty minutes later, Echo Team had rendezvoused with Charlie Team as they moved in on their objective. Silently, they waved Rory and Jeremy into a 360-degree protected zone the six-man team had set up only moments before.

"Here are your 23A2's and the rest of the crap you requested. Give us your shit."

"It's nice to see you too, Mike." Rory saluted the Echo Team leader and shook his hand as Jeremy moved into the zone.

"You guys up to date?"

"Unless something interesting has happened in the last twenty minutes, I'd say so." Jeremy handed another Echo Team member his rifle and ghillie suit, then saluted and shook the Echo commander's hand.

"As a matter of fact, there seems to be some funny shit going on. Bravo Team was heading for a resupply rally point outside of their sector. They lost two guys on the way. That puts them down to six, in case you were wondering. It appears they've made contact with some SMFs, because there wasn't a shot fired. At least not that anyone heard." Mike scratched his head. "I think our friend Alizade is calling in the cavalry."

"What?" Rory replied. "Why didn't they update the BTS?" He handed over his unnecessary gear to an Echo Team member. It was replaced by a suppressed M23A2 carbine.

"They're hunkering down, staying quiet. There's a flatline on the biomonitors for Romanchek and Miller. I guess that doesn't mean they're dead. On top of that, we've got weather moving in."

"Great," Rory replied sarcastically as he turned his attention to Jeremy. "Feel expendable yet?"

The conversation was interrupted by strings of distant automatic gunfire. Jeremy pulled the cover off of his BattleTac and watched closely, as did Rory and the Echo commander. The rest of the squad covered them.

"Let's hang out here for a minute. I want to know what's going on before I send you sneaky bastards back out there," Mike said.

The radio transmission echoed into every operator's ear. "Contact at 025, 100 meters! Target's hot! Ballistas ready! Fire!"

Loud explosions were heard as the Ballista missiles impacted the target area, infrequently a first, then in a rapid succession. Shortly afterwards, the automatic gunfire died down.

"Cease fire! Cease fire! It's stopped... Get over there."

>> next >>

Rudy and one of the thugs each handed the valet their redemption slips. Shortly afterward, two large SUVs pulled up through the casino's covered drive. Jeremy couldn't help but wonder how fucked up someone's priorities had to be to do what had been done to these trucks. "Utility" was a misnomer in this case. "Sport Wheels-For-My-Stereo Vehicle" would have been more appropriate. Rudy walked around to the driver's side of the first truck. "Get in," he said to Jeremy. "You too, motherfucker," eyeballing Odds. "Biz, you too." 'Tiny' got in through the driver's side rear door.

They drove out of the casino's parking lot with the other truck, with the other four of the crew, following them.

"What the fuck d'you want from me, man? I know it ain't t'get no Rooster. We ain't exactly on speakin' terms, you know. Motherfucker's another dirty, shit-kickin' local, man. His family in this desert for a long time. So tell me what's really goin' on before I get mad."

"I need to find some people. Rooster knows where to find them."

"Who you lookin' for? Maybe we don't need to get Rooster involved in this shit," Rudy said, sensing a potentially lucrative transaction.

"You can help me find Rooster, Rudy. Not that you don't have other resources I could use. This time, I just need Rooster," Jeremy hesitated, contemplating an apology for his rather abrupt and tactless introduction, then thought better of it. It wasn't quite time to trust these guys even a little bit. Not yet. They respected a hard exterior and had no patience for weakness. If they saw it during the first dance, even for a second, they would figure out a way to take advantage of it. The only one that Jeremy knew enough to trust was Odds, and he knew better than to do that. The little fucker had already run off with 5K of Jeremy's nuyen. If this all went smoothly, Jeremy would consider writing it off. But if things went awry, Odds wouldn't see his next birthday. At least not from a level any higher that a wheelchair.

"Can I ask you a question, man?"

"Shoot."

"What the fuck am I gonna get out of this?"

"A lesson in patience," Jeremy replied with a smirk. The car stopped at a red light. Rudy turned to Jeremy, obviously annoyed.

"Listen, motherfucker. I heard ya name and I really don't give a fuck how straight-up bad ass you are. If you keep tryin' me, I'm gonna lose what little patience I got and you'll be flyin' back to Saudi or wherever the fuck it is you're from in a God damn duct-taped coffee can. You either make me an offer or get the fuck out of my ride right now. And take Odds with you. I don't need this bullshit." Rudy turned back to face the light. It turned green. The car didn't move.

>> next >>

5.56x45mm NATO (.223 Remington)

Weapon Type	Base Damage Code
Carbine	8M
Assault Rifle	9M
Sport Rifle	9M
Sniper Rifle	9M
Light Machine Gun	9M

Primary Bullet: FMJ-BT	Case: Rimless, Necked	Reload: Yes
Bullet Mass (gr): 40-80	Case Length (in/mm): 1.77/45	Count/Box: 50
Velocity (fps): 3300-2870	Primer: Centerfire, Boxer, SR	Conceal/Box: 4

Suppression: Velocity control rules apply.

Additional Info: Because of this cartridge's velocity, it automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 50
Full Metal Jacket, Boat Tail	Regular	14 ¥
Hollow Point, Boat Tail, Match	Match	18 ¥
Light Armor Piercing	-1 power, x0.5 Armor	30 ¥
Ballistic Tip	Hollowpoint + Match	18 ¥
Jacketed Soft Point	Hollowpoint	10 ¥
Subsonic FMJ (Velocity Controlled)	-4 Power, no armor bonus	14 ¥
Tracer	Tracer	+30 ¥/box

Description

Developed by Bob Hutton for Eugene Stoner's AR-15 rifle, which was adopted by the US military in 1964 as the M-16. The cartridge was introduced commercially shortly thereafter by Remington as the .223 Remington. Adopted by NATO in 1982 after a slight redesign.

This round was adopted in order to increase hit probability at a range of about 500 meters. It accomplishes that job well, though the round does have its detractors.

More...

.243 Winchester (6.16x51mm)

Weapon Type	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: SP	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 85 grains	Case Length: 52mm	Count/Box: 20
Typical Velocity: 3100 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	18 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥

Description

Introduced by Winchester in 1955, the .243 is the .308 Winchester case necked down to accept .243" (6mm) bullets.

Since its introduction, the .243 Winchester has become one of the more popular American hunting cartridges. It is well known for its versatility, used for anything from long range varmint hunting to deer to police sharpshooting.

6.5x55mm Swedish (Swedish Mauser)

Weapon Type	Base Damage Code
Sport Rifle	8S
Sniper Rifle	8S

Primary Bullet: SP	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 140 grains	Case Length: 55mm	Count/Box: 20
Typical Velocity: 2600 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: Subsonic ammunition available.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	12 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥
Subsonic SP (Velocity Controlled)	-5 Power	12 ¥

Description

Another very versatile cartridge, the 6.5x55mm was adopted by the Swedish Army in 1894, and is still a very popular hunting and target shooting cartridge in Scandinavia and Europe.

Prior to WWII, it was it was almost unknown in North America. Low recoil and superb accuracy are the two main contributing factors to this cartridge's rise in popularity.

7mm Remington Magnum (7mm Rem Mag)

Weapon Type	Base Damage Code
Sport Rifle	11S
Sniper Rifle	11S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 63.5mm	Count/Box: 20
Typical Velocity: 3110 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Ballistic Tip	Hollowpoint + Match	22 ¥

Description

The 7mm Remington Magnum was introduced by Remington along with their Model 700 bolt-action rifle in 1962. Both rifle and cartridge have become North American standards since.

This is a very powerful overbore cartridge, known to be relatively tough on barrels. It is commonly used for long range deer/elk hunting, but has shown advantages when used for long range sniping.

.303 British

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: SP	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 175 grains	Case Length: 56.3mm	Count/Box: 20
Typical Velocity: 2440 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	18 ¥
Soft Point ("Dum-Dum")	Hollowpoint	15 ¥

Description

The .303 British was the official military rifle cartridge of the British Empire from its adoption in 1888 until the 7.62x51mm NATO was adopted in 1953.

Originally a blackpowder cartridge, the .303 British was one of the first military cartridges to transfer to smokeless powder in the late 19th century.

This is a popular hunting cartridge in (former) British satellite countries.

7.62x51mm NATO (.308 Winchester)

Weapon Type	Base Damage Code
Battle Rifle/Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 51mm	Count/Box: 20
Typical Velocity: 2750 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: Subsonic ammunition available.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	20 ¥
Armor Piercing	x0.5 Armor Rating	25 ¥
Soft Point (Hunting)	Hollowpoint	12 ¥
Frangible	Flechette Rules	65 ¥
Explosive	+1 Power	40 ¥
Subsonic SP (Velocity Controlled)	Damage drops to 7M	12 ¥
Tracer	Tracer rules	+5 ¥/box

Description

".308 Winchester" is the commercial name for the 7.62x51mm T65 military cartridge developed in the US and adopted by NATO in 1954.

The .308 Winchester cartridge is one of the more widely known cartridges throughout the world, due to its acceptance by NATO. It has seen use in battle rifles, machine guns, sniper rifles, hunting rifles, target rifles... You name it, the .308 has probably been used for it and to very good effect as well.

7.62x53Rmm Russian (7.62x54mm Russian Rimmed)

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rimmed, Necked	Reload: Yes
Bullet Weight: 150 grains	Case Length: 53.5mm	Count/Box: 20
Typical Velocity: 2880 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing	x0.5 Armor Rating	27 ¥
Armor Piercing Incendiary	Above + Incendiary	30 ¥
Explosive	+1 Power	45 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Adopted by Russia in 1891 with the Mosin-Nagant bolt-action rifle, the standard rifle of the Soviet Army through WWII.

More commonly found in Asian and eastern European countries formerly under Soviet influence, the 7.62x53Rmm Russian is a popular hunting cartridge as well as a sniper rifle cartridge, used most notably in the Dragunov SVD semi-automatic rifle.

30-06 Springfield (30-06 Government, 7.62x63mm)

Weapon Type	Base Damage Code
Sport Rifle	9S
Sniper Rifle	9S

Primary Bullet: FMJ	Case: Rebated, Necked	Reload: Yes
Bullet Weight: 172 grains	Case Length: 63mm	Count/Box: 20
Typical Velocity: 2640 fps	Primer: Centerfire	Conceal/Box: 8

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a x0.75 Armor Rating modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing	x0.5 Armor Rating	27 ¥
Armor Piercing Incendiary	Above + Incendiary	30 ¥
Explosive	+1 Power	45 ¥
Subsonic SP (Velocity Controlled)	DC drops to 7M	15 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Developed by the US Springfield Arsenal and introduced in 1906 as a spitzer-bulleted replacement for the 30-03 cartridge in the M1903 bolt action rifle.

The 30-06 was used by the US Army through two world wars in various types of weapons. In that time it became a popular North American deer and elk hunting cartridge. Today it is a standard by which all other hunting cartridges are judged.

.300 Winchester Magnum (.300 Win Mag)

Weapon Type	Base Damage Code
Sport Rifle	12S
Sniper Rifle	12S

Primary Bullet: SP	Case: Belted, Necked	Reload: Yes
Bullet Weight: 180 grains	Case Length: 66.5mm	Count/Box: 20
Typical Velocity: 3000 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of this cartridge's velocity, it automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	22 ¥
Armor Piercing Incendiary	x0.5 Armor + Incendiary	30 ¥
Soft Point (Hunting)	Hollowpoint	15 ¥

Description

The .300 Winchester Magnum was introduced by Winchester in 1963 in the Model 70 bolt-action rifle. Both rifle and cartridge have become North American standards since.

This is very powerful overbore cartridge, commonly used for long range big game hunting, but has shown promise as a long range sniping cartridge, adopted by the US Navy in 1992.

.338 Lapua Magnum (8.6x70mm Lap Mag)

Weapon Type	Base Damage Code
Sport Rifle	14S
Sniper Rifle	14S

Primary Bullet: FMJ-BT	Case: Rebated, Necked	Reload: Yes
Bullet Weight: 250 grains	Case Length: 70mm	Count/Box: 20
Typical Velocity: 2950 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Probably one of the first cartridges ever to be developed specifically for long range anti-personnel sniping/medium range anti-matériel work, Research Armament Co. intruduced this cartridge in 1983 using a necked-down and shortened .416 Rigby case.

Lapua of Finland was subsequently tasked by the US Navy to improve the cartridge. The case was strengthened a bit and the result was introduced as the .338 Lapua Magnum.

.408 Cheyenne Tactical (.408 CheyTac)

Weapon Type	Base Damage Code
Anti-Matériel Rifle	12D

Primary Bullet: Match	Case: Rimless, Necked	Reload: Yes
Bullet Weight: 419 grains	Case Length: NA	Count/Box: 20
Typical Velocity: 2890 fps	Primer: Centerfire	Conceal/Box: 5

Suppression: No.

Additional Info: Because of ballistics, this cartridge automatically receives a **x0.5 Armor Rating** modifier. Unless a muzzle brake is used, rifles firing this cartridge receive a +1 recoil modifier.

Payloads Available	Effect	Cost / 20
Hollow Point, Boat Tail, Match	Hollowpoint + Match	25 ¥
Soft Point (Hunting)	Hollowpoint	22 ¥
Armor Piercing	x0.25 Armor Rating	35 ¥
Armor Piercing Incendiary	Above + Incendiary	45 ¥
Tracer	Tracer rules	+5 ¥/box

Description

Developed by Cheyenne Tactical and Tactical High Energy Impact Systems (THEIS), this cartridge is based on the .505 Gibbs case, strengthened and necked-down to .408".

The .408 CheyTac was designed from the start as a long range, high-energy sniper/anti-matériel rifle cartridge, to fill the void between the 7.62x51mm NATO and .50 BMG cartridges used in sniping roles by militaries at the turn of the 21st century.