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d20 system™

BIG BANG

The Mostly Illustrated RPG Guide to Modern Weapons

Designed for use with all roleplaying game systems.
With statistics provided for
D20 Modern and CyberThriller

BIG BANG
THE MOSTLY ILLUSTRATED RPG GUIDE TO FIREARMS

Written by Dana Jorgensen

THE LEGAL MUMBO JUMBO AND OTHER FINE PRINT

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Designation of Open Content:

The D20 Open Content consists of data conversion rules under the heading of "D20 Modern Data", consuming two pages of this document. The exact location of this material varies from volume to v olume, and in Volume 1 consists of pages 8 and 9 of the document. Additionally, the game statistics specific to use in D20 Modern is also designated as open source. The statistics appear in a small table, a blank example of which exists in the opening of t he previously mentioned Open Content. In Volume 1, this example table appears on page 8. Additionally, it includes the information under the heading of "Converting to D20 Modern" on page 12 of Volume 1. Lastly, it includes all inline text following the bol dfaced heading of "D20 Modern Special Rules" in the section identified as "Bullet Types", on pages 13 -17 of Volume 1.

WELCOME TO BIG BANG

For years, I have been a "modern" gamer. By that, I mean modern is my preferred genre. I've played the spectrum, from games set in the World Wars, to gangbusters, to cold war espionage, to brush war mercenary action, to the dark near future of cyberpunk. There were plenty of weapon guides out there. Millenium's End had Ultramodern Firearms. Cyberpunk 2020 had Blackhand's Street Guide. R Talsorian also published Edge of the Sword. Palladium has its Compendium of Modern Weapons. GURPS has High-Tech and Modern Firepower. There were quite a few other resources as well.

Unfortunately, they didn't entirely fulfill my needs, since inevitably, there was always one book published and nothing following it up to expand the listings. To make matters worse, they were plagued with errors, or worse, flawed thinking. For instance, look at the ever popular Ares FMG Folding Submachinegun. Seems like it's listed in every book, doesn't it? For a weapon so seemingly new and ubiquitous, I'll bet you'd be surprised that the design is actually nearly 30 years old at this point, and the weapon never got past prototype stage, so only four dozen were ever fabricated. Want a folding SMG? You'll have to look to the Russians and their PP-90, a knockoff of the Ares that is superior to the original. The third fatal flaw is that with some game systems, weapon statistics are a matter of favoritism on the author's behalf, rather than being based on any actual comparison of data. A last error is that many simply aren't particularly conducive to conversions to new systems. For example, Edge of the Sword is heavy on the reference charts, producing a separate accuracy table for each and every weapon. Other systems used arcane, secretive formulae to calculate their values, and the forumlae remain secret so we really don't know if the values are based on fact or whim.

I eventually started writing my own RPG, entitled CyberThriller, a game designed to represent both the modern technothriller and the dark future of cyberpunk. Among the writing projects was a work entitled "Big Bang, the Mostly Illustrated Guide to Modern Weapons". It was meant to be a huge guide to civilian and military small arms. As it developed, I started running into problems. I want to cover everything rather than the usual 300-500 guns, so I found myself staring at what could easily become a 500+ page book. I struggled for quite a bit trying to decide how to lay out the book.

Then a revelation hit me as I was struggling with the formatting. People who don't play CyberThriller will end up buying this book. Most weapon guides have outsold the game systems they were written for by a factor of 3 to 1 or better. This was a very important revelation, as it completely changed what Big Bang is. This revelation has made Big Bang a multi-system guide to weapons.

Back to the basics I went. It was time to put the axe to the grindstone and break the bindings on a lot of reference books. Everything in Big Bang is based on real world data. The basic damage system is based on the velocity and energy of individual cartridge types. Rates of fire, magazine capacities, and weapon effective ranges, weights, costs and year of introduction are culled from corporate, military, and consumer information sources. Accuracy is determined from a system developed involving the specifics of benchmark shooting of the weapon at maximum expected combat range for that type of weapon. It's all a matter of fact, rather than estimation, theory, or favoritism.

The real world information done, the next step was developing reliable conversion rules allowing you to take that data and turn it into game stats. Nice thing is, when you're working with facts, those conversions come easy. At this time, statistics are listed for D20 and CyberThriller. I'll add additional game system listings as I arrange permission, these updates appearing in later issues.

This choice to go multi-system has lead to one other important change, regarding the layout. In the end, the best way to present the information in a sufficiently organized fashion is to present it in the fashion law enforcement organizes it; datasheets. This means on one sheet of paper, you'll get the gun's real world data, image, and a description on one side and game statistics on the other. Of course, don't think I simply crammed every gun into a two page format. the F2000 assault rifle has a four page datasheet and the M-29 SABR/OICW consumes 6 pages.

Before you start ranting about how the last product to try that sucked, I'll just say that I learned from the Monstrous Compendiums and times have changed. I'm creating the RPG equivalent of a Jane's Guide to Small Arms. It isn't meant to be sold on paper, so I'm not looking to save money by shaving off as many pages as possible. I'm not stopping at 300 weapons, or even 500 weapons. I may not even stop once I finish with modern weapons! When you go that far, saving paper is no longer a concern. Datasheets also allows me to expand things slowly, rather than follishly attempting to cram and finish it all at once. Datasheets also allow me to issue updates without forcing you to buy an entire new book. The forced structure of datasheets also eliminates text flow issues. Add two paragraphs about a gun, and you will always only replace those pages associated with the weapon. When squeezing as much onto a page as possible, those two paragraphs of new text can easily lead to changes on 10, 20, or more pages in a typical book format. The last benefit of these data sheets belongs to you, the consumer. You need only print out what you need and you can organize it as you require. Organize it by manufacturer, model number, nation of manufacture, weapon type, era, etc. This means if you are playing a game set in World War Two, you can simply put all those pages into a notebook. Playing in a campaign set in Germany? Organize a binder that focuses on European weapons.

So here you have it, the first volume of Big Bang. I'm hoping to produce new volumes at a rate of at least six times per year, each volume detailing at least 50 new weapons. With this first volume, I wanted to provide a wide array of weapons to illustrate the astonishing selection available out there. We have everything from centruy old pistols to the cutting edge competitors of the rifle of the future, miniature handguns almost as small as a quarter to weapons that take two to operate. And if you're wondering about the title, well, there are some weapons that I have seen in the past and failed to snap a photo of, and I no longer have access to them. So those ones have to go photo free until I obtain photos of them.

I hope you enjoy this ambitious project.

Big Bang
Big Bang is the ultimate RPG guide to firearms. Providing factual data on the weapons presented, Big Bang provides statistics for both D20 Modern and CyberThriller. Free conversion rules are available for other game systems. Big Bang is published in a datasheet format for the ultimate organizational convenience. Available as a semi-regular PDF publication online (available now) or as an annual CD-ROM product in stores (newest annual edition available each October).

CyberThriller
Welcome to the new mecca of Cyberpunk. CyberThriller is an excellent new game presenting three timelines; the modern era of Now, then steps into the future of 2025, and makes its third stop in 2050. Come visit this forboding world filled with corporate scandal, intrigue, terrorism, revolution, and more. Available Summer 2003.

Modern Supernatural
For thousands of years, they have walked amongst us. They are a step ahead of us, people with unique talents and gifts that make the devoted quake in their boots. For centuries, those gifted people have been hunted by the devout, labelled as witches. In this modern era, the hunters have become a truly organized force to contend with, feared by the witches and the law alike. Are you one of the hunters or the hunted? Available Winter 2004.

Neo-City Sourcebook
Originally designed as a fan-contributed online sourcebook for the now-dead Cyberpunk 2020 game system, this entire book has been refashioned to fit into Cyberthriller as it's premiere site for cyberpunk subterfuge. Includes an appendix providing Cyberpunk 2020 data for use with that game system. Available Summer 2003.

Neo-City Adventures
What good is a city without some adventure to make it interesting? This portfolio of adventures all take place in Neo-City. Includes bonus material expanding the Neo-City Sourcebook. Available Winter 2004.

Brush Wars
Welcome to the military. The age of epic warfare and grand battles has come to an end. These days all conflicts seem to be "low intensity", a struggle between small opposing forces on a scale that was once considered a mere ambust or skirmish. These days five or ten men can handle the job done 30 years ago by an entire platoon or 60 years ago by an entire company of troops. Release date TBA.

Black Book of Terrorism
We now live in a world where acts of terrorism happen daily, on scales both large and small. This book provides both historical reference, as well as thoughts and theories on both terror and countering it. Available Fall 2003.

MAD Grafitti
Welcome to the world of special operations police units. Originally, there was SWAT, the original police special ops unit formed back in the 1960's, trained in the tactics of storming a building and dealing with heavily armed criminals. With the new millenium came ESWAT, a new police special ops unit designed to face new threats and cross-trained with the military to handle terrorism and weapons of mass destruction, as well as the usual SWAT duties. Now comes the latest evolution in police special ops, MAD, the Miscreant Apprehension Division, the cops trained to deal with the worst threat of all, rogue cyborgs and robots. Release date TBA.

Edge Road
Edge Road is the Guide to the Cutting Edge. An irregularly published series for Modern, Technothriller and Cyberpunk genre games, this book follows technological trends, scientific discovery, and gadgets & gimmicks, presenting them in a manner that makes them useful to the game. As with Big Bang, Edge Road will be a dual system guide for both CyberThriller and D20 Modern. Available Fall 2003.

Boomtown
Welcome to the land of concrete canyons and gang warfare. Take a trip to a cyberpunk Los Angeles and see what the city may look like after the Big One. Release date TBA.

PCM - The Philadelphia-Camden Metroplex
Welcome to my hometown area. Nothing beats the feel of a book written by the locals. Come take a look at the city that has quietly become the center of the biochemistry industry and working hard to become a core for internet technology industries. Release date TBA.

Rabid Helix
What happens when genetic engineering goes astray? The residents of Neo-City will find out and no one, be they residents of the corporate tower fortresses above or the slums of the Free Zone below, is safe. Available Fall 2003.

USING THE DATA

REAL WORLD DATA

To start off, this book presents any and all real world data that could be collected on the weapon in question. As with all the data and game statistics, we have collected the information into a well organized chart. The chart looks like the following:

Weapon					
Manufacturer			Year		
Nation					
Caliber			Mags		
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty		ROF	SS	
	Loaded			MB	
Length				Burst	
Range	Effect.			Auto	
	Max.			Cyclic	
Notes					

Weapon - This is the full name or military designation of the weapon.
Manufacturer - The name of the company that developed the weapon. For example, the M-16 is listed as a Colt weapon, even though it is manufactured by at least a dozen different companies worldwide.
Year - This lists the range of years in which the weapon has been in manufacture, service or openly available for government or private purchase on a first-hand basis.
Caliber - The calibers the weapon can fire
Mags - a list of the magazine capacities. A letter is attached to many numbers. C represents a cylinder, like that of a revolver, B represents belted ammunition, like that of a machine gun, and D represents a drum style magazine that holds a significantly greater amount than box magazines. If there is no letter associated with th e number, that indicates that the magazine is a typical box -type magazine.
Accuracy - Accuracy is data collected from test firings. This data comes from a number of sources; it is either grouping sizes at various ranges from benchmark shooting, the MOA or Minute of the Angle used for accuracy tests in precision shooting, or the kill rate attained in military testing (higher kill rates supposes higher accuracy).
Velocity - The velocity at which a bullet leaves the gun.
Energy - the energy possessed by a bull et when it leave the gun.
Weight - The weight of the gun. This provides both empty weight and the weight of the gun when loaded with a full magazine.
Length - the length of the weapon in milimeters. For weapons with folding or collapsible stocks, a second measurement is provided for the weapon's more compact form.
Range - This provide both effective and maximum range. Effective range it the furthest range at which the shooter can reasonably expect to hit the body. Maximum range is the furthest range the wea pon can be fired to and still be expected to at least marginally wound the target. The area between effective and maximum range is essentially a useless area in which to aim at targets unless one is a true master of the weapon, or an experienced shooter fa miliar with the techniques of zeroing in on a target with multiple shots.
ROF - Rates of Fire. They are fun. You can shoot a gun one bullet fired every pull of the trigger. Or it may have a mechanical limiter that lets it fire a set number of bullets with every pull of the trigger. Or it may be capable of firing for as long as you hold down the trigger (in which case there are many ways you can fire it).

SS indicates the single shot rate of fire, or how fast you can reasonably accurately fire it at a rate of one bullet with each pull of the trigger. For most weapons, this rate is a roughly uniform 40 RPM.

MB indicates Mechanical Burst. The weapon contains a mechanical limiter that lets it fire a set number of rounds with each pull of the trigger. This too h as a typical limit, which has given us the rather ubiquitous 3 -round burst.

Burst indicates a short burst. The 3 -round burst is a matter of military doctrine as well as weapon design philosophy. Troops are trained to conserve ammunition when such can be accomplished, and to that end, they are trained to attempt to perform a 3-round burst on weapons with no burst limiter designed into them. This number is the number of rounds typically fired when a shooter attempts a 3 -round burst on full automatic fire.

Auto indicates the rate of fire the gun can manage on its full -auto setting, in which one pull of the trigger will continue firing rounds until the trigger is released. However, for Auto, it is assumed that the shooter is following the weapon's maintenance do ctrines while providing sustained firing. Maintenance doctrines call for short periods of inactivity in which the weapon is allowed time to cool somewhat in order to prevent overheating that can lead to a catastrophic weapons failure. These short cooling p eriods are above and beyond the time it takes to swap magazines and recharge the weapon.

Cyclic indicates the full -auto rate of fire, maintenance doctrines be damned. Give the gun enough ammunition and this is how many rounds it would fire if you held down the trigger for a full 60 seconds.

CYBERTHRILLER DATA

Cyberthriller data is organized into a small chart to keep things well organized. Anyway, the chart looks like the following:

Cyberthriller													
Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Special Rules													

Weapon - The name by which the weapon is normally identified. Note that naming for revolvers follows a traditional but ever more archaic format. The ASTRA 3 57, a revolver manufactured from 1972 to 1980 by that Spanish manufacturer, was available with barrels 4 inches, 6 inches and 8 1/2 inches long. Traditional naming would list these three pistols separately as the Astra 357/4, Astra 357/6, and Astra 357/8. 5.

Type - This specifies the categories of the weapons, broken down in a manner suited to identify which skill is suitable for using this weapon.

HND - Handguns. This includes Machine pistols, autoloading pistols (also known as semi-automatics), revolvers, and pistol-shaped derringers.

SMG - Submachineguns. Uzis, Mac-10's, H&K MP5's, and the like. Small, compact weapons capable of burst or full auto fire.

AR - Assault Rifles. The first, the german MP-44 Sturmgewehr-44, and rapidly followed by the M-16, AK-47, and a number of other rifle sized weapons capable of burst and fully automatic fire.

BR - Battle Rifles. These are the bridge between Assault Rifles and old bolt-action military weapons used during the First World War and earlier. These are semiautomat ic weapons, with greater ammunition capacity and higher rates of fire than possible by bolt action rilfes.

ACC - Assault Rifle Accessories. During World War II, there were two Assault Weapon Accessories; rifle grenades and bayonettes. Since then, convenie nce and the pursuit of lucrative sales has driven an entire market of new accessories, typically mounted beneath a weapon's barrel. There were laser pointers, flashlights, different foregrips, even grenade launchers and single-shot shotguns. Into the next millenium, this tradition of underbarrel devices continues.

SN - Sniper Rifle. This category covers all bolt-action rifles, including hunting rifles, plinking guns, varmint guns, and even older military weapons, some of which date back over more than a cen tury.

SHT - Big bore barrels that use a single cartridge to propel multiple projectiles toward a target in a random pattern but the same general direction.

HVY - Everything that doesn't fit into other categories. Machine guns, flame throwers, grenade launc hers, even some bulkier non-lethal weapon systems.

MIS - Missile systems with manportable launch systems. Technically they fall under Heavy Weapons, but the depth of training necessary puts them in a category all their own.

GRE - Grenades. Hand grenades, l aunched grenades, rifle grenades, pistol grenades.

ART - Manportable artillery systems. Mainly mortars. But the associated skill also covers larger artillery pieces, like howitzers.

VEH - Vehicle mounted weapons, like heavy chainguns, gatlings, box-launched anti-tank missiles, tank guns, etc. Not covered in this book.

MEL - Knives, swords, clubs, etc.

EX - Exotic Weapons. See the concealed weapons section.

Weapon Accuracy [ACCY] - A weapon's accuracy is determined by using real world firing data. The data used is the grouping diameter on a target at combat range. The diameter then determines the accuracy of the weapon. One question that arises is why bonuses are based on a 5cm diameter, while penalties are based on 10 cm diameters. This is because more accu rate weapons tend to cause people to aim. And it's easier to hit the body in general than it is to hit a specific part of it intentionally. You can further extend the weapon's range into the penalty category for weapons with grouping diameters more than 10 0 cm, though I can't imagine anyone wanting to use a gun that can't keep 5 bullets inside a 1 meter diameter circle.

0-4 cm = +7 WA
5-9 cm = +6 WA
10-14 cm = +5 WA
15-19 cm = +4 WA
20-24 cm = +3 WA
25-29 cm = +2 WA
30-34 cm = +1 WA
35-44 cm = +0 WA
45-54 cm = -1 WA
55-64 cm = -2 WA
65-74 cm = -3 WA
75-84 cm = -4 WA
85-94 cm = -5 WA
95-104cm = -6 WA

Additionally, accessories can affect the accuracy of a weapon too, as will improper maintenance. These will be covered in detail in the equipment section and the maintenance section, later in this chapter.

Concealability [Conc] - This is a reference to the weapon's size and your ability to conceal it on your person. If you watched The Jackal, (starring Bruce Willis and Richard Gere), you know that even unconcealable weapons can be hidden, just not on your person.

Pocket (P) - Pocket means pocket. The weapon is small, slim, and not very noticable when you stick it in a pants pocket. Such weapons also hide well inside sleeves and pant leg cuffs.

Jacket (J) - You need a jacket or baggy clothing to cover it up. This includes anything big enough to stick in your belt. Most handguns are actually jacket concealable, rather than pocket-concealable.

Trench (T) - These weapons are too long to hide under a regular jacket. Think of the Highlander hiding his katana underneath a trenchcoat. Or in the Terminator, when Reese hid a sawed off shotgun under his.

Nonconcealable (N) - It's just too damned big to hide on your person. If you carry it, people will notice. Bu t by all means, this doesn't mean it can't be hidden. Just remember in The Jackal when Bruce Willis' feature character hid a heavy machinegun inside the aluminum mast of a sailboat.

Availability [Avail] - Classification specifying how easily the weapon wi ll be to obtain. BMM is the Black Market Modifier, a multiplier attached to the basic cost and difficulty of obtaining the weapon through illegal means.

Commercial [C] - sold commercially, and therefore easily available to anyone who wants to buy it. BMM x 2

Restricted [R] - sold commercially, but restricted for some reason. BMM x3
Law Enforcement [L] - available for purchase by law enforcement personnel only. BMM x5
Military [M] - available for military procurement. BMM x8
Spyware [S] – designed and issued by an intelligence service. More numerous than experimental weapons, but the production runs normally run only a few thousand, not exactly mass production. BMM x15.
Experimental [E] - only available in very limited numbers (usually under 100 units total) a nd not up for sale. BMM x40.
OOP [O] - out of production. This category may be combined with others. For instance, the US Air Army Pilot's Pistol was made around 1943, but never entered mass production. It counts as both an experimental weapon (having not been mass produced) and is out of production (having been made so long ago). Makes the weapon difficult to obtain. If the weapon entered mass production, the BMM equals that of the other class plus 25%, rounded up. If it did not, the BMM doubles. Examples: Commercial OOP weapon would be BMM x4, Spyware OOP weapon would be BMM x30 and an experimental OOP weapon would be BMM x80.
Fantasy [F] - these are the best guns that never were, taken from a wide variety of fictional resources.

Caliber [Cal] - The bullet caliber will provide a basic level of damage, affected by the way a weapon's design affects muzzle energy. For larger weapons, which are meant to damage or destroy material more than people, they are applied a variety of damage ratings. Anti -armor weapons have their penetrations listed in millimeters. Anti -aircraft missiles have a percentage rating for their chance to kill an aircraft. Explosive devices will be rated by kill radius.

Damage Modifier [DM] - Damage is based on the muzzle energy of a fired bullet from the weapon. Due to design differences, some weapons fire the same cailber round, but the bullet fired from one can leave the weapon with far more muzzle energy than the same kind of round fired from a different model weapon. This applies as a b onus for the bullet's caliber-based damage. The reason for this: design elements are what allow the bullets to exit with higher or lower muzzle velocity. Many guns possess alteration options that rechamber them for a different caliber, while the design ele ments remain unchanged.

Capacity [Ammo] - The number of rounds the weapon can hold in its standard magazine, cylinder, etc. Typically, an extra round will be indicated if the gun itself can hold a round, as semi -automatic weapons can. For example, an M19 11A1 has a 7 round magazine, plus can be carried with one round chambered, giving it a capacity of 7+1.

Rate of Fire [ROF] - Up to five numbers are possibly given; single -shot [SS], mechanical burst (B# ; example: B3 = 3 round burst, can fire a number of bursts equal to SS rate), automatic burst [AB], automatic [A], and cyclic [C]. Not all weapons will be capable of firing all three ways. The numbers are based on a three second combat turn.

Single shot is the semi-automatic, autoloading mode most weapons possess, in which one pull of the trigger will fire a single round and remove the spent cartridge from the firing process, and position a fresh round for firing.
Mechanical burst is a mechanical limit that allows a single pull of the trigger to fire a spec ified number of rounds. The most widespread example of a mechanical burst is the 3 -round burst mode of many submachineguns and assault rifles.
Automatic burst is the typical gunner's attempt to reproduce the mechanical burst on a weapon with no mechanical burst setting. This is the number of rounds the weapon will fire when the gunner is attempting to fire a burst of three rounds with a short trigger pull.
Automatic fire is the number of rounds the weapon can fire when the gunner is attempting a sustained f iring rate while at least loosely adhering to the maintenance doctrines of the weapon in regards to the effects automatic fire have on the weapon (i.e., the gunner remembers to take periodic pauses in firing to allow some cooling of the weapon to occur or follows the doctrines for barrel changes).
Cyclic fire is fully automatic fire while throwing all caution to wind, with no regard for the damage it may do to the weapon. The weapon is fired nonstop until it is out of ammunition, with cooling only occuring when the weapon is being reloaded. The cyclic rate is calculated as a number of rounds the weapon could fire in one minute if the weapon could be supplied sufficient ammunition to not require reloading during that minute of firing.

Reliability [Rel] - The weapons reliability in combat; its ability to resist jamming, either from poor design elements, rough handling, debris entering the mechanics, etc. The ratings are:

VU – Very Unreliable. On a fumble, it malfunctions 9 in 10 times. Every malfunction check adds a cumulative –1 to the die roll until the weapon undergoes maintenance.
UR – Unreliable. On a fumble, it malfunctions 7 in 10 times. Every two malfunction checks add a cumulative –1 to the die roll until it undergoes maintenance.
ST – Standard. On a fumble, malfunctions 5 in 10 times. Every 2 malfunction checks adds a cumulative –1 to the die roll until it undergoes maintenance.
RE – Reliable. On a fumble, malfunctions 3 in 10 times. Every 3 die rolls add a cumulative –1 to the die roll until it undergoes maintenance.
VR – Very Reliable. On a fumble, malfunctions 1 in 10 times. Every 3 die rolls add a cumulative –1 to the die roll until it undergoes maintenance.

Range [Eff.Rng.] - Range now possesses two categories: combat range and effective range. Co mbat range is a rough determination made by the military as to the range in which combat occurs with that type of weapon. For example, the US Army expects that combat with assault rifles will occur within a range of 400 meters, while pistols, as a holdout weapon, will be used at ranges under 50 meters. However, these guns can fire further than that. For some weapons, their maximum range won't even meet standards for combat range. For the sake of saving paper, most weapons will only list their maximum range. However, a few weapons are expected to perform quite differently from their counterparts, and those select weapons will have their combat range listed as a second number. The general combat ranges are as follows:

HND – 50 m.
SMG – 50 m.
AR – 400 m.
SN – 1000 m.
SHT – 25 m.
HVY – Varies by weapon.
MIS – Varies by weapon.
ART – Varies by weapon.
VEH – 1000 m
MEL – Arm's length
EX – Varies by weapon.

In combat, range breaks down as follows: Point Blank, Short, Medium, Long, Effective, and Extreme. Point blank is anything within 20 feet or 7 meters. Short range extends from there to ¼ of the weapon's Combat range. Medium range extends from there to ½ of combat range. Long range is the remainder of combat range. Effective range is any distance listed for the wea pon that exceeds combat range for that weapon type. Extreme range is any distance that surpasses the weapon's effective range, out to twice its effective range. So, an assault rifle with an effective range of 700 meters would have its range broken down as follows:

0m-21m	Point Blank Range
21-100m	Short Range
100-200m	Medium Range
200-400m	Long Range
400-700m	Effective Range
700-1400m	Extreme Range

Weight [Wt,Emp] or [Wt,ld.] – The weight, in kilograms, of either an empty weapon or a fully loaded, combat -ready weapon.

Cost [Cost] - Cost of the weapon in US currency. Costs for experimental weapons are based upon the projected price once in mass production. Every effort is made to keep prices as accurate as possible, but some may date to the original procur ement of the weapon, or early procurement low volume mass production prices. Some weapons, mainly heavy weapons like cannons or missile launchers, include a second price. That second price indicates the cost of extra rounds to fire from the launcher.

D20 MODERN DATA

Like everything else, the D20 data is kept well organized by a small chart. That chart is as follows:

D20 Modern										
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Special Rules										

We need to make note that we have deviated from the standards set by D20 Modern, as a few things seem to have been overlooked in the writing of those rules. These alterations occur under the Rates of Fire and Magazine data. Additionally, Range Increments listed here will vary from those in D20 modern for any "duplicate" entries. We are also working on an alternate damage system for D20 as well, in an effort to reduce the extreme coarseness of the existing system. Allow me to also mention t hat for all intents and purposes, D20 Ultramodern Firearms should also be considered canonical, since it's author is also one of the authors of D20 Modern. There will be several references to that book.

Weapon - the name by which the weapon is normally d esignated.
Type - handgun, long arm, heavy weapon, or other. Handguns and longarms require the Personal Firearms Proficiency Feat, Heavy Weapons require the Exotic Firearms Proficiency Feat, and for those weapons that would be considered "other", this fiel d lists the Weapon Proficiency Feat that the weapon requires.

Damage. The damage assigned to the weapon's caliber, based on data extrapolated from D20 Modern.

Critical. The threat range for a critical hit. If the threat is confirmed, a weapon deals doubl e damage on a critical hit (roll damage twice, as if you hit the target two times). See page 131 of D20 Modern for more about threat range and critical hits.

Damage Type. Ranged weapon damage is classified according to type: ballistic (all firearms), ener gy (of a specific type, such as electricity damage for a taser), piercing (some simple ranged weapons, such as a crossbow), or slashing (a whip). Some creatures or characters may be resistant to some forms of damage. For this book, we have also added blunt (shotgun beanbag loads) and entangling (net guns) to account for a number of modern ranged weapon concepts not considered in the D20 Modern rules.

Range Increment. Any attack at less than this distance is not penalized for range. However, each full incr ement causes a -2 penalty to the attack roll. Ranged weapons have a maximum of ten range increments, except for thrown weapons, which have a maximum of five range increments. For this book, the range increments are determined by taking the weapon's effecti ve range, converting to feet, and dividing it by 10. The distances are rounded out to the nearest 5 feet. If you're not using a 5 foot scale, then you can simply add another 5 feet to move to the nearest 10 foot scale measurement.

Rate of Fire. Some range d weapons have a rate of fire of 1, which simply means they can be employed once per round and then must be reloaded or replaced. Firearms, which operate through many different forms of internal mechanisms, have varying rates of fire. The three possible rates of fire for handguns, longarms and heavy weapons are single shot [SS], semiautomatic [SA], and automatic [A].

Single Shot [SS]: A weapon with a single shot rate of fire requires the user to manually operate the action (the mechanism that feeds and cock s the weapons, as well as ejecting casings of spent rounds) between each shot. Pump shotguns and bolt -action rifles are examples of firearms with single shot rates of fire. A weapon with a single shot rate of fire can fire only one shot per attack, even if the user has a feat or other abilities that normally allow more than one shot per attack.

Semiautomatic [SA]: Most firearms have the semiautomatic rate of fire. These firearms feed and cock themselves with each shot. A semiautomatic weapon fires one shot per attack (effectively acting as a single shot weapon), but some feats allow characters armed with semiautomatic weapons to fire shots in rapid succession, getting more than one shot per attack.

Automatic [A]: Automatic weapons fire a burst or stream of shots with a single squeeze of the trigger. Only weapons with automatic rate of fire can be set on autofire or be used with feats that take advantage of automatic fire.

Burst [B]: Many weapons, particularly assault and battle rifles, are capable of firing u nder a burst setting. Essentially, this is a step that exists between semiautomatic and automatic fire. The gun is effectively on automatic fire, but a mechanical limiter stops the weapon from firing after a few rounds have been fired. Effectively, the wea pon will fire three bullets for each pull of the trigger. Effectively, it can allow a shooter to get in three shots per attack without needing any feats to allow them to do so. Additionally, it can also be used with those feats to further increase the numb er of shots one can get in per attack.

Mag - Magazine. The weapon's magazine capacity and type are given in this column. The amount of ammunition a weapon carries, and hence how many shots it can fire before needing to be reloaded, is determined by its ma gazine capacity. How the firearm is reloaded depends upon its magazine type. The number in this entry is the magazine's capacity in shots; the word that follows the number indicates the magazine type: box, cylinder, internal, or belt. Weapons with a dash in this column have no magazines; they are generally thrown weapons or weapons like bows, which are loaded as part of the firing process.

Box: A box magazine is any type of magazine that can be removed and reloaded separately from the weapon. This feature is advantageous because a character can carry extra magazines, already loaded, and simply swap an empty one for one of the full extras. Also, box magazines tend to have relatively large capacities. Box magazines need not be shaped simply like a box. Also in this category are the curved "banana" type box magazines, as well as very high capacity drum type and helical magazines. Always be sure to read weapon descriptions carefully, since there are many

types of magazines that have reliability problems due to either complexity of design or materials weaknesses exploited by "overloading". Overloading is a condition when a magazine design is incapable of holding its full capacity, and filling it completely repeatedly eventually results in some manner of failure internally to the magazine which causes it to cease feeding far faster than such failures occur in other magazine designs. Most magazines with this flaw can have the problem avoided by filling it to no more than 2-5 rounds of full capacity. As for a good example of design complexities that cause problems, there are a number of drum-type box magazines that will either pop apart or begin feeding ammunition when dropped. In either case they spill every bullet they held, forcing the character to collect the loose bullets and refill the magazine. Some helix magazines have a tendency to pop their springs when mishandled, resulting in a magazine that won't feed bullets until it is manually unloaded, rewound, and reloaded.

Cylinder: A revolver keeps its ammunition in a cylinder, which is part of the weapon and serves as the firing chamber for each round as well. Unlike box magazines, cylinders on modern guns can't be removed, and they must be reloaded by hand. However, most of these revolvers can be used with a speedloader (see p. 120 of D20 Modern) - a small device that holds a full load of ammunition ready to be inserted, all at once, into a cylinder. Using a speed loader is much like inserting a box magazine into a weapon. Without a speed loader, a firearm with a cylinder magazine must be loaded by hand. A number of Nineteenth century revolvers, particularly models associated with America's "Wild West" era, actually had removable cylinders that could be swapped much like a modern box magazine. The most predominant example one can see of this is the revolver used by Clint Eastwood in at least one of the spaghetti westerns he did during the 1960's.

Internal: Some weapons keep their ammunition in an internal space, which must be loaded by hand. This is the case with most shotguns, as well as many rifles.

Belt: D20 Modern refers to this as Linked. Belted ammunition began as rounds inserted into loops attached to a strip of strudy fabric, looking all the world like the classic western holster belt with ammunition loops, hence the term "belted ammunition". Eventually, technology changed to "disintegrating link" belts, where the bullets are chained together with small metal clips to form the belt. While the ammunition is normally issued in belts that are a multiple of 50 bullets, any number of belts can be clipped together. According to D20 Modern, in military units, as the gunner fires, an assistant clips new ammunition belts together to keep the weapon fed. This is somewhat erroneous, as that only occurs when the machinegun team is engaging in sustained rapid-fire. Otherwise, firing doctrines require the weapon to be reloaded at the end of each belt, as a means to ensure the weapon is given a periodic measure of inactivity in which it can cool off. In our listings, we indicate a number of shots for belted ammunition, whereas D20 Modern does not. This is to indicate the number of bullets contained in a belt as it would normally be issued in the military.

Size - Size categories for weapons and other objects are defined differently from the size categories for creatures (a Medium-size weapon, for example, is not the same size as a Medium-size creature or other object). The relationship between a weapon's size and that of the wielder defines whether it can be used one-handed, if it requires two hands, and if it's a light weapon.

A Medium-size or smaller weapon can be used one-handed or two-handed. A Large weapon requires two hands. A Huge weapon requires two hands and a bipod or other mount.

A Small or smaller weapon is considered a light weapon. It can be used one-handed and, as a light weapon, is easier to use in your off hand (see Table 5-3, page 138 of D20 Modern).

Wt - Weight. This column gives the weapon's weight in US pounds when fully loaded.

DC - Purchase DC. This is the purchase DC for a Wealth check to acquire the weapon. This number reflects the base price and doesn't include any modifier for purchasing the weapon on the black market or through other illegal means.

Res - Restriction. The restriction rating for the weapon, if any, and the appropriate black market purchase DC modifier. Remember to apply this modifier to the purchase DC when making a Wealth check to acquire the weapon on the black market.

CARTRIDGE GUIDE

This section is established as what will eventu ally become a massive guide to cartridges of all types, and the one section of Big Bang that will be updated with virtually every volume. There are literally hundreds of different combinations of calibers, bullet types and weights, powder mixes, etc., all of which can change the performance of ammunition. We aren't going to go overboard with this. At the core, we will provide a list of ammunition statistics for the round's ball ammunition with bullets of varying weights. This is then combined with a second chart detailing penetration and damage performance differences for different types of bullets.

Cartridge - Name, Designation, and/or Caliber of the shell.
ABBR - Abbreviation used in CyberThriller statistics.
Type - Type of weapon the round is used in.
P - Pistol (and SMG)
R - Rifle
G - Grenade Launcher
Bullet Weight - the weight of the bullet in grams.
Velocity - Muzzle velocity of the round when fired.
Pen - Penetration of the round. If the number is in italics, it indicates the amount of steel armor th e round can penetrate. Otherwise it indicates how much human flesh the round can penetrate. Based on all rounds fired being Full Metal Jacket rounds. Measured in inches
Disrupt - The volume of flesh the round will damage. Based on a Full Metal Jacket. Meas ured in cubic inches. While some of these values may seem horrendously high, please remember that the average male human torso is a mere 9 inches thick, so even if a .50 BMG hit you, it wouldn't actually disrupt nearly half a million cubic inches of your f lesh.
Quantity - You usually don't buy just one bullet. You buy a box or a case, and even for some guns, preloaded disposable magazines. This column details the usualy quantities in which the rounds of this type are sold.
Weight - The weight in kilograms c orresponding to the quantity of round sold in a package.
Cost - The cost of the package of rounds.
Dmg - CyberThriller damage.
Notes - Brief notes about this type of round.

Most listings below based on cartridges mounting full metal jacketed bullets. App ropriate alterations have been made for armor -piercing and other rounds to account for their use of bullets other than FMJ..

Cartridge	ABBR	Typ e	Bullet Wt (gm)	Velocit y (m/s)	Pen	Total Disrupt.	Per Inch Disrupt.	Quantity	Wt (kg)	Cost	Energy (ft-Lbs)	Notes
Generic Full Metal Jacket Cartridges												
.22 Long Rifle (5.7 x 17mmR)	.22 LR	P	2.6	330	14	0.41	0.03	5000	25	245	104	
.22 Short Magnum	.22 SM	P	2.1	606	26	1.11	0.04	50 500		8 75	285	
.25 ACP (6.3x15.5mm)	.25 ACP	P	3.25	246	12	0.36	0.03	1000	10	70	73	
.32 ACP (7.62x17mmR)	.32 ACP	P	4.6	274	17	1.02	0.06	2000	20	150	127	
.32 Magnum	.32 Mag	P	5.8	334	21	1.9	0.09				238	
.357 Magnum (9x33mmR)	.357 Mag	P	8.1	439	31	5.75	0.19	50	1.1	50	575	
.380 Automatic (9x17mm)	.380 Auto or .380 ACP	P	5.8	303	23	2.2	0.1	1500	15	125	196	
.38 Special (9x29mmR)	.38 Spec	P	7.1	286	21	2.4	0.11	1000	15	175	214	
.38 Special Match	.38Sp M	P	9.6	210	16	1.8	0.11				156	
.40 S&W (10x21mm)	.40 SW	P	8.7	401	31	6.5	0.21	1000	17	225	516	
.41 Action Express (10.42x18mm)	.41 AE	P	11	334	27	6	0.22	1000	17	225	452	
.45 ACP (11.43x23mm)	.45 ACP	P	13	296	26	6.7	0.26	1000	20	63	420	
6.35mm	6.35	P	3.25	240	12	0.34	0.03				69	
7.62mm Tokarev	7.62 TT	P	5.5	510	30	15.5	0.52				528	
7.65mm	7.65	P	4.6	320	19	5.2	0.27				174	
9mm Makarov (9x18mm) 0.35	9mm M	P	6.15	321	22	2.3	0.1	1500	15	200	234	
9mm Parabellum (9x19mm)	9mm P	P	7.5	379	26	3.9	0.15				397	
9mm Largo (9x23mm)	9mmL	P	8	361	25	3.8	0.15				384	
9mm Short	9 Short	P	6.1	305	21	2.1	0.1				210	
10mm Colt (10x25mm)	10mm C	P	11	406	31	8.3	0.27	1000	17	225	688	
Specific Cartridges												
3x12mm Kolibri	3x12	P	0.35	125	3	0.002	0.00067	1	.02	75	2.2	Miniature Pistol round, produced

												2 ft-lbs of energy.
L191 5.7x28mm Tracer	L191	P	2	715	21	1.9	0.09	1000	6	710	377	Tracer version of the SS -190
M/12 6.5x55mm Mauser	M/12	R	6	510	26	2.9	0.11	.051			575	M/94 Practice/gallery round.
M/94 6.5x55mm Mauser M/94	M/94-94	R	10.1	742	37	10.5	0.28	10 600 1400	0.25 15 35	2 63 147	2050	M/94 roundnose
M/94 6.5x55mm Mauser M/41	M/94-41	R	9	790	39	10.6	0.27				2071	M/94 boattail
M2 .50 BMG Ball	M2 .50	R	50	924	89	309	3.47				15,744	
M2 7.62mm NATO AP	M2	R	10.8	868	87	21.3	0.25				3000	Older US AP round
M17 .50 BMG Tracer	M17	R	40.2	884	58	284	4.9				11,586	
M20 .50 BMG Tracer	M20	R	39.5	896	59	287	4.86				11,695	
M33 .50 BMG Ball	M33	R	44.6	897	87	260	3				13,235	
M61 7.62mm AP	M61	R	9.8	868	87	19.3	0.22				2722	Older US AP round
M62 7.62mm Tracer	M62	R	8.5	825	33	80	2.42				2134	
M67 7.62mm Bloc Ball	M67R	R	8	740	43	48.5	1.13				1616	Soviet 7.62x39mm Ball ammo.
M78 7.62mm Bloc Silencer	M78R-S	R	11.8	290	17	11	0.65				366	Soviet 7.62x39mm cold-loaded ammo.
M78 7.62mm Bloc Tracer	M78R-T	R	7.7	715	28	55	1.96				1452	
M80 7.62mm NATO Ball	M80	R	9.65	868	51	19	0.37				2681	standard NATO 7.62mm round, US designation.
M118 5.56mm Long Range	M118	R	11.4	786	33	9.6	0.29				2597	Long range NATO standard round, +1 to hit.
M193 5.56mm NATO Ball	M193	R	3.95	1005	42	5.4	0.13				1471	Used in older NATO standard firearms with a 1-in-12 barrel twist. Copper jacket.
M196 5.56mm NATO Tracer	M196	R	4.13	962	28	39	1.39				1410	
M200 5.56mm NATO Practice	M200	R	0	0								Full charge blank version NATO standard round for training purposes with MILES.
M882 9mm NATO Ball	M882	P	7.45	377	26	3.8	0.15				389	Standard NATO 9x19mm Parabellum NATO ammo.
M885 5.56mm NATO Ball	M885	R	4	1005	43	5.5	0.12				1490	For NATO weapons with a 1-in-7 twist. Green tip.
M856 5.56mm NATO Tracer	M856	R	4.15	875	25	5.4	0.22				1149	Tracer version of M885. Orange tip.
M993 7.62mm NATO AP	M993	R	8.4	950	94 *20mm*	19.9	0.21				2796	Latest US armor-piercing round.
M995 5.56mm NATO AP	M995	R	3.37	1013	73 *12mm*	4.7	0.065				1275	Latest US armor-piercing round. Black tip.
M1018 20mm HEAB	M1018	G	160					50	4.54	800		Airbursting grenade round for the M-29 SABR.
PAB-9 9 x 39mm	PAB-9	R	17.3	290	29	11.4	0.39				214	Russian subsonic armor piercing round.
Pretoria 9mm	Pret 9	P	6.5	400	8.3	13.2	1.6				384	Used in the Pretoria IFA. Hollowpoint.
Sb193 5.7x28mm Subsonic	Sb193	P	3.6	300	3	0.5	0.17	1000	7.6	450	119	Subsonic version of SS -190, range of 50 meters.
SP-5 9 x 39mm	SP-5	R	16	290	20	4.9	0.25				496	Soviet Subsonic sniper round
SP-6 9 x 39mm	SP-6	R	16	290	29	27	0.93				496	Soviet Subsonic armor piercing round
SS109 5.56mm NATO Ball	SS109	R	4	930	40	4.7	0.12				1276	NATO european equivalent of the M885 round.
SS190 5.7 x 28mm Ball	SS190	P	2	715	31	1.5	0.05	1000	6	410	377	
T194 5.7x28mm Practice	T194	P	1.75	705	31	1.3	0.04	1000	5.75	290	321	Practice version of SS190

CALCULATING DATA

The data required for a bullet can all be calculated from three variables; the muzzle velocity, bullet weight, and caliber. This information can get quite complicated, factoring in air drag, the rate of expansion, bullet aerodynamics, and more. However, that is simply too complicated for any game use. You'd end up spending more time on the math than you would preparing or running your game. So we are going to base everything from the point at which the bullet exits the muzzle.

To begin with, we give you the numbers you need. Caliber, muzzle velocity, and bullet weight. You then need to

figure out which type of bullet is being used and write down its disruption factor and penetration factor. Disruption Factor is a proprietary number established to account for the average expansion rate of a bullet type, tumbling design, tendency to break apart or fragment, etc. Penetration Factor is a proprietary number established to account for effects of shape and common materials used in the bullet and their effect on penetration of human flesh. That done, we begin with the math. Perform the formulae below, in the order given to derive the Penetration and Disruption values. Feel free to round out the final results of the penetration and disruption forumlae.

- Kinetic Energy = Mass * velocit y * velocity * 0.5 * .001 (joules) * 0.7376 (ft -lbs)
- Cross Section = pi * r * r (mm sq) * 0.00155 (in. sq.)
- Penetration = Velocity * 3.281 * Diameter / Penetration Factor (17) (inches of penetration of human flesh)
- Per Inch Disruption = Per Inch Disruptio n / Penetration (cubic inches of flesh disrupted or damaged per inch of penetration)
- Total Disruption = Kinetic Energy * Cross Section * 0.1 * Disruption Factor (1) (total cubic inches of flesh disrupted or damaged)

These formulae serve two goals. First it allows you to calculate damage for calibers not yet presented in the system. Second, it allows you to account for variances caused by the weapon design. The rate of twist, barrel length, and other factors can prevent a bullet from exiting that model of weapon it their optimum speed and energy, resulting in a bullet doing less damage. Out of the literally thousands of weapon designs in the world, only a mere handful of them are actually ballistically perfect for the ammunition they fire.

In addition to the penetration of flesh, one usually finds a need to know how much armor will be penetrated by a bullet as well. This is easy enough to calculate. Simply take the listed penetration value and multiply it by the value listed below for the material you wish to determine the bullet's penetration of. For your convenience it may help to convert the measurements from inches to millimeters (multiply by 25.4).

Material	Pen. Mult.
Gypsum Drywall	9.338
Plywood	1.867
Oak Planking	1.31
Particle Board	3.334

Material	Pen. Mult.
Steel Armor Plate	0.0035
Steel Sheet Metal	0.006
Hardened or Dura- Aluminum	0.0156
Aluminum	0.0784

Material	Pen. Mult.
Concrete	0.435
Cinder Blocks	0.588
Granite	0.37

APPLYING DATA TO GAMES

All the above data is interesting, but currently doesn't apply to anything in any useful way. So we need to develop rules for converting it into a format useful for our games.

Converting to CyberThriller

CyberThriller is a game still being written. As it stands, we can apply the data for calculating damage only. All guns in CyberThriller do fairly consistent damage from bullet to bullet. Fire ten well-aimed shots into the same target, you can expect that each of the ten shots will do roughly equivalent damage, right? In CyberThriller, all guns do a base of 1D3 damage. After that, take the per inch disruption value of the round and multiply by 50, rounding up, which gives you a final value of 1D3+X for damage. Let's walk through the fabrication of a few bullet damage values.

An M-80 7.62mm NATO standard Ball round disrupts 0.37 inches of flesh per inch of penetration. Multiply by 50 and you get 18.5, rounded up to 19. So an old M-80 round will do 1D3+19 points of damage.

An M855 5.56mm NATO standard Ball round disrupts 0.12 inches. multiply by 50 and round up to get 6. So an M885 does 1D3+6 points of damage.

Now we'll get interesting with a 9mm Hydrashock round. A 9mm Parabellum ball round disrupts 0.15 inches of flesh. However, a Hydrashock round is more potent, with a bullet factor of 5. So the 0.15 is multiplied by 5 to determine that hydrashock rounds will disrupt 0.75 inches. That result is multiplied by 50 and rounded up, determining the final damage value for a 9mm Parabellum Hydrashock round as a brutal 1D3+38, compared to the 9mm Parabellum Ball round's damage of a mere 1D3+8.

Converting to D20 Modern

For D20 Modern, the conversion is a bit more complicated, because at first glance, this sort of data was apparently not factored into the system from the ground up. While different types of bullets have greatly varying effects in the real world, in D20 Modern, those effects are actually quite minimal. So basically, in D20 Modern, everything revolves around Ball or Full Metal Jacket ammunition. In order to fit new ammunition into the damage listings for D20 Modern, a bit work in the area of statistical charting is required, since D20 Modern uses a system of damage values are so coarse in their differentiation. After that is done, the modifiers for the bullet type are applied. Unfortunately, by working in this method, as new cartridges are introduced, it may produce variations in the damage values of some calibers and rounds. As is, this conversion effort eventually shows that four different calibers have been provided the wrong damage in one book or another. Anyway, having fumbled around a bit, the short chart I ended up with was this, referencing bullet caliber, D20 damage, penetration, and disruption:

.22 LR	2d4	14	0.41	0.03
.25 ACP	2d4	12	0.36	0.03
.32 ACP	2d4	17	1.02	0.06
.380 Auto	2d4	23	2.2	0.10
9x18 Makarov	2d4	22	2.3	0.1
.38 Special	2d6	21	2.4	0.11
.357 Magnum	2d6	31	5.75	0.19
.40 S&W	2d6	31	6.5	0.21
.45 ACP	2d6	26	6.7	0.26
9mm P	2d6	26	3.9	0.15
10mm	2d6	31	8.3	0.27
.41 Action Exp.	2d8	27	6	0.22
5.7mm FN	2d8	31	1.5	0.05
5.56 NATO	2d8	40	4.7	0.12
7.62x39 Rus.	2d8	43	48.5	1.13
9mm SP-5	2d8-3	20	4.9	0.25
9mm SP-6	2d8-1	29	27	0.93
7.62mm NATO	2d10	51	19	0.37
.50 BMG	2d12	87	260	3

So what does this mean? It means that damage in D20 is obviously based on penetration. That being the case, it also indicates that there are a few rounds in D20 Modern that have the wrong damage, as well. So here is the current damage conversion chart for D20:

Penetration	Damage		Penetration	Damage
11-20	2d4		?-87-?	2d12
21-30	2d6			
31-40	2d8			
41-51+?	2d10			
Option: If you have the dice, bullets penetrationing only 1 -10 inches can be allowed to do only 2d3 damage.				

Obviously, this will also lead to a few changes, as well., since certain calibers now clearly fall into different damage ranges. Those changes will be detailed on a table later in this section. Despite these changes, D20 Modern damage listed in this book series is in line with D20 Modern rather than these rules variations.

One more important note to make, in regards to the SP-5 and SP-6 rounds as listed in D20 Ultramodern Firearms. These are Soviet era Russian bullets developed for a silent munitions program during the Cold War. The SP-5 uses a plain old FMJ Ball round. It isn't armor-piercing. The SP-6 uses a semi-jacketed exposed steel core bullet designed to give the best of both worlds for armor-piercing and hollowpoints. You should ignore the suggestion that they can be cold-loaded since they are subsonic munitions and therefore cold-loaded by default. They are designed specifically to function at the highest possible performance for subsonic munitions, and therefore, the cold-loaded modifier should not apply to these two rounds whatsoever.

A final thing I would like to deal with is cover. D20 Modern plays a bit too fast and loose with firing at targets behind cover. My problem is that I find D20 Modern's rules aren't deficient in this area, but incomplete. This is because some cover is no cover at all. What good is there in hiding behind an interior house wall when someone is emptying an automatic weapon in your general direction? Odds are, every last one of

those bullets flying is going to go through both sheets of drywall and whatever insulating material lies between. By the same token, a .22 LR round will, for all intents and purposes, splatter against a cinder block, while a 5.56mm rifle round with almost the identical diameter, will eaily blow through several cinder blocks. To that end, I am introducing a system called Blowthrough.

Blowthrough consists of three assigned variables (called Blowthrough Factors, or Bf)which are combined to calculate a value for a d20 check. Roll below that number and the cover is blown through by the bullet, enabling it to strike anyone using the cover.

The first assigned variable is to the bullet itself, based on its caliber and ball ammunition performance. This part is easy. Take the penetration value for a round and divide it by 5, rounding down. This would give a .22LR round a Caliber Blowthrough Factor (Bf) of 3, while a .45 ACP round has a Bf of 6 and a NATO-issued SS109 5.56mm round will have a Bf of 8.

The second assigned variable is based the type of bullet. After all, an armor-piercing bullet does a better job of blowing through things than a lead wadcutter would. The Bullet Bf for each of those is determined under the bullet types in the D20 Special Rules detailed for each bullet type. This Bullet Bf value is added to the Caliber Bf value.

The third assigned variable is based on the material of the cover. some materials are harder than other. As mentioned previously, a .22 LR will usually go through drywall, but won't break a cinder block. This third value is added to the previously combined Bf for caliber and bullet type. This third value is typically a negative value, which reduces the final blowthrough factor score. This number also indicates a set depth of material and applies multiple times as the thickness of cover material requires. For instance, Blowing through 1 sheet of drywall imposes a -1, but blowing through 3 sheets of drywall will impose a -3. In this tier of the Blowthrough factor, the numbers are, shall we say, "graded on a curve". Statistically, steel armor would be roughly along the lines of -200, but we want to fit things into a range that bottoms out at -20 for materials harder than flesh. For materials with a positive value, each additional layer after the first is subtracted from the value, rather than added. Same applies for

If the final Blowthrough factor is 20 or greater, it will automatically blow through the cover material, meaning it was pretty much pointless to dive behind such a useless source of cover.

Lastly, when firing an automatic weapon at someone behind cover, for every round striking the cover material adds a cumulative +1 to the Bf for each following round that hits. Eventually the cover material, no matter how hard, will slowly deteriorate under fire.

D20 Modern Revised Damage and Blowthrough

Caliber	Dmg	Bf	DC	Caliber	Dmg	Bf	DC	Caliber	Dmg	Bf	DC
.22 LR	2d4	3	4	5.7mm FN	2d8	7	7	7.62x54mm Russian	2d10		4
.25 ACP	2d4	3	4	7.62x26 Russian	2d6		6	.50 BMG	2d12	18	6
.32 ACP	2d4	4	5	9x18 Makarov	2d6	5	5	12.7x107 Russian	2d12		6
.380 Auto	2d6	5	5	9mm Parabellum	2d6	6	5				
.38 Special	2d6	5	5	10mm	2d8	7	5	9x29mm SP-5	2d6	12*	
.357 Magnum	2d8	7	5					9x29mm SP-6	2d8	15*	
.40 S&W	2d8	7	5	5.45x40 Russian	2d8		5	9mm P. Hydrashock	2d6+1	10*	
.41 Action Express	2d6	6	6	5.56mm NATO	2d8	8	4	M882 9mm Ball	2d6	14*	
.44 Magnum	2d8		5	5.8mm Chinese	2d8		6	M995 5.56 AP	2d8-1	18*	
.45 ACP	2d6	6	5	7.62x39mm Russian	2d10	9	4	M993 7.62 AP	2d10-1	21*	
.50 Action Express	2d8		6	4.7mm HK Caseless	2d8		10				
5.45mm	2d4		5	7.62mm NATO	2d10	11	4				

* Includes modifiers for both caliber Bf and bullet type Bf, as these are specific cartridges available in a specific caliber with a specific type of bullet. Also includes the final Purchase DC calculated for that round type. All other listings are basic caliber-based Bf which requires the addition of the bullet type Bf. Assuming use of FMJ or Ball ammo, the bullet type Bf would be +8. DC is the base Purchase DC for the ball type ammunition. When buying something other than Ball/FMJ type ammo, apply the DC modifier listed for that ammunition type.

Cover Material Blowthrough Values

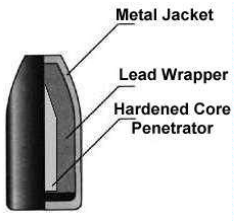
Material	Bf	Material	Bf	Material	Bf	Material	Bf
Human flesh, 9 inches	0	Steel armor, 1mm	-8	Drywall, 5/8 "	+5	Glass, 10mm	0
Bone, 1 inch	-1	Steel, 1mm	-3	Plywood, 1/2"	+2	Automotive Glass	-1
Cinder Block, 1 inch*	-4	Aluminum, 1mm	-2	Oak Planking, 1/2"	+1	Light Plastics (food and small storage containers, act.)	0
Concrete, 1 inch	-5	Hardened Aluminum, 1mm	-3	Particle Board, 1/2"	+3	Medium Plastics (car parts)	-1
Granite	-3	Car Tire	-4	Truck Tire	-6	Heavy Plastics (barrels)	-3
Constructed Examples							
Steel Door (3mm steel x 2)	-18	Mailbox or newpaper box (3mm AluminumX2)	-12	House Interior Wall (drywall x 2)	0	Car Rim (1mm Steel x 12)	-36
Furniture	0	Solid Wood Door (oak plank x 2, plywood x 4)	-4	Shingled Exterior Wall (drywall, plywood, particle board)	0	Car Door (2mm Aluminum, med. Plastics	-5

* a cinder block at the hollows is 2 inches thick, 8 inches thick at the structural portion, at least according to the one I bought at the local concrete company.

BULLET TYPES

Armor Piercing (AP)

Type	Armor Piercing
Disruption Factor	1
Penetration Factor	10

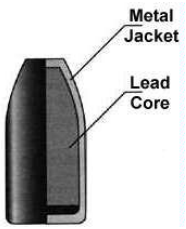


Armor piercing ammunition consists of a bullet composed around some manner of hardened metal penetrator. The penetrator is typically made of hardened steel, though in the last ten years, many governments have started switching to rounds that use a tungsten penetrator. A handful of governments have even experimented with small arms AP ammunition using penetrators formed from depleted uranium and completely encased in lead. The penetrator is then seated inside a lead body, then usually wrapped in a metal jacket of copper, brass, aluminum, or occasionally, mild steel. The lead wrapper and metal jacket are to prevent barrel wear that would occur if the round were formed entirely of solid steel or tungsten.

D20 Modern Special Rules: If your target has armor or natural armor, you gain a +1 circumstance bonus on attack rolls when using this ammunition type. However, you suffer a -1 penalty on damage rolls (regardless of whether your target is armored or not). Blowthrough factor = 10. Purchase DC Modifier = +1.

Full Metal Jacket (FMJ)

Type	Full Metal Jacket
Disruption Factor	1
Penetration Factor	17
Type	FMJ Tumbler
Disruption Factor	4.5
Penetration Factor	19

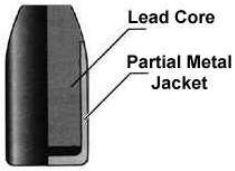


This is the standard military bullet under the terms of the Geneva Convention. For most nations, this consists of a solid lead core wrapped in a copper, brass or mild steel jacket. These rounds have very little expansion on impact, and occasionally yaw or tumble in flight or after impact. In 1995, the United States acknowledged the way most ammunition poisons the environment with a vast amount of lead and has been developing "green bullets". These FMJ bullets replace the lead core with a core of tungsten-tin alloy or a mixture of tungsten and nylon. test firings of over 5,000 rounds of this green ammunition has demonstrated no deviation in performance from that of older ammunition.

D20 Modern Special Rules: This is the standard ball ammunition. The standard damage shown for each weapon in this book reflects ball or FMJ ammunition; no special rules apply. Blowthrough factor = 8. Purchase DC Modifier = +0.

Jacketed Soft Point (JSP)

Type	Light Jacketed Soft Point
Disruption Fac tor	3
Penetration Factor	119
Type	Hvy Jacketed Soft Point
Disruption Factor	1.5
Penetration Factor	43

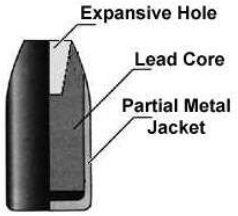


Developed in the later 1800's at an Indian Army arsenal at Dum Dum, near Calcutta. This round has a solid lead core wrapped in a copper jacket which leaves the lead at the bullet's nose exposed. By exposing the nose, the bullet's expansion is greatly improved compared to the Full Metal Jacket round, imparting improved stopping power, but also reducing the capacity to penetrate flesh and armor. Light Jacketed Softpoints would weigh under 100 grains or 6.5 grams.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -1 penalty on attack rolls when using this ammunition type. However, you gain a +1 circumstance bonus on damage. Blowthrough factor = 6. Purchase DC Modifier = -2.

Jacketed Hollowpoint (JHP)

Type	Lt. Jacketed Hollow Point
Disruption Factor	5
Penetration Factor	59
Type	Hvy JHP
Disruption Factor	3.5
Penetration Factor	56
Type	Copper JHP
Disruption Factor	4.5
Penetration Factor	62

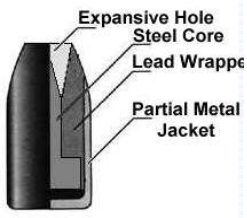


Developed by the Woolwich Arsenal in Great Britain shortly after the development of the JSP round in India. This round is essentially a jacketed soft point round with the nose hollowed out. By doing so, the expansive nature of the round is further enhanced, creating a bullet useless against armor, but capable of causing serious injury to a man while rarely exiting the body. Light hollowpoints would wiegh under 100 grains or 6.5 grams. Copper jacketed hollowpoints are jacketed in copper, which is softer than other jacketing materials, resulting in better expansion.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -1 penalty on attack rolls when using this ammunition type. However, you gain a +1 circumstance bonus on damage. Blowthrough factor = 3. Purchase DC Modifier = +0.

Hydrashock

Type	Hydrashock
Disruption Factor	5
Penetration Factor	44



This is a commercially produced modified Jacketed Hollowpoint Bullet. The round uses a steel core to enhance the expansion of the round on impact. The steel core is anchored into the rear of the lead wrapper, so that as the steel core moves forward, the rear of the wrapper is pulled forward with it, expanding the round further than a normally possible with a JHP round.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -1 penalty on attack rolls when using this ammunition type. However, you gain a +1 circumstance bonus on damage. Blowthrough factor = 4. Purchase DC Modifier = +1.

Lead Wadcutter (LWC)

Type	Target Wadcutter
Disruption Factor	1
Penetration Factor	70
Type	Hollow / Reversed Wadcutter
Disruption Factor	2.5
Penetration Factor	51

The profile of this solid lead, lubricated bullet is designed to cut a clean signature through paper targets for precise scoring. Consistent accuracy results from bullet formation by a swagging process, which eliminates the balance-destroying voids found in most cast bullets. Used mainly by competition shooters.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -3 penalty on attack rolls when using this ammunition type. However, you gain a +1 circumstance bonus on damage. Blowthrough factor = 2. Purchase DC Modifier = -2.

Lead Semi-Wadcutter (LSWC)

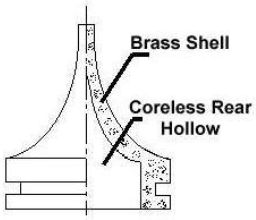
Type	Lead Semi-Wadcutter
Disruption Factor	2
Penetration Factor	22

This is a solid lead, lubricated bullet with a semi-pointed nose for improved ballistic performance and accuracy. The good ones are formed by a swagging process with a sharp shoulder which allows it to punch a clean hole through paper targets.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -2 penalty on attack rolls when using this ammunition type. However, you gain a +1 circumstance bonus on damage. Blowthrough factor = 3. Purchase DC Modifier = -2.

Tres Haute Vitesse (THV)

Type	Tres Haute Vitesse
Disruption Factor	1
Penetration Factor	5

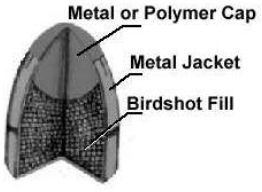


Tres Haute Vitesse means "very high speed" in French. These munitions are made of solid brass in a reverse olgive spire configuration, which focuses the energy of the round at a 90 degree angle to the track of the bullet. Available in 9 x 19mm Parabellum, the 45 grain bullet exits the gun at 2600 fps, with enough energy to blast through Level II body armor. Astonishingly, while the round easily penetrates that armor, the bullet penetrates only about one foot into human flesh. Unfortunately, the round tends to be very unreliable in older handguns, jamming up in the feeding mechanism as the rounds strip out of the magazine. To solve this problem, the South Africans developed the MONAD variant. The MONAD is simply a THV round with a plastic nosecap that makes the round feed reliably by giving it the profile of an FMJ round. When fired, the plastic cap disintegrates about a foot outside the barrel, leaving only the THV round in flight. The THV is one of the three dominant forms of Accelerated Energy Transfer (AET) ammunition.

D20 Modern Special Rules: If your target has armor or natural armor, you gain +1 circumstance bonus on attack rolls when using this ammunition type. Being a form of AET ammunition, the rounds also grant a +1 equipment bonus to damage. THV rounds make a weapon unreliable, though MONAD rounds do not. Blowthrough factor = 9. Purchase DC Modifier = x3.

Glaser Prefragmented Safety Round

Type	Glaser
Disruption Factor	10
Penetration Factor	124



These are either rounds that are handcut and scored so they will break into fragments on impact, or they are capped hollow jackets filled with fine pellets. These munitions were invented in the 70's by Colonel Jack Cannon and named for his friend, Armin Glaser. Over the years, they have evolved from the crude, handmade examples to mass production. The basic concept has remained the same: copper jackets filled with bird shot and cover by a crimped polymer endcap. Upon impact with flesh, the projectile fragments, with the birdshot spreading like a minature shotgun pattern.

The standard 'Blue' Glaser uses a rather fine birdshot (#12, 200 pieces in .38 Special round) which only gives 5 to 6" of penetration in flesh. The 'Silver' Glaser adds another 1 to 2" of penetration with the use of slightly larger birdshot (#6, 30 pieces in .38 Special round). Due to the much reduced penetration in flesh, some have theorized that the Glaser would be ideal where over-penetration of a projectile could be hazardous to bystanders. For instance, the Glaser may be stopped by a

muscular or upraised arm. However, for the same reasons, the Glaser's terminal performance can vary dramaticly, producing impressive successes and equally spectacular failures depending on the angle at which the target is struck.

Glancing hits on hard surfaces will result in fragmentation, reducing the risk of ricochets. However, the Glaser can penetrate barriers such as drywall, plywood, and thin sheet metal if struck directly. The Blue and Silver Glaser handgun loads are worthless against body armor, penetrating only 5 layers of Kevlar.

While Glaser rounds aresafe to use in confined environments, they are rapidly becoming illegal to possess. This is due to the fact that they break up so easily, effectively rendering them impossible to match to the weapon that fired them. With these rounds rapidly becoming a murderous criminal's dream, most jurisdictions are moving to either completely outlaw the bullet or convert it to "law enforcementonly" sales status.

D20 Modern Special Rules: If your target has armor or natural armor, you suffer a -2 penalty on attack rolls when using this ammunition type. However, you gain a +2 circumstance bonus on damage. Blowthrough factor = 1. Purchase DC Modifier = x2.

Semi-Jacketed Exposed Steel Core

Type	Semi-Jacketed Exposed Steel Core
Disruption Factor	1.5
Penetration Factor	12

This is a relatively new Russian round which they like to call "assault rounds". Originally developed for the PBM pistol, the bullet has found its way around to other munitions as well, including the PAB-9 and the SP-10 silent loads. A steel penetrator core is wrapped in a bulb of lead and all but the steel tip is jacketed in aluminum. The rest is a dual purpose round with a penetrator that can pierce a PASGT vest at 30 meters, and mushrooms as well as the best hollowpoints. The aluminim jacket assists maintaining the bullet's integrity by greatly reducing the fragmentation that can occur when a bullet mushrooms.

D20 Modern Special Rules: This round functions as both armor-piercing and hollowpoint. If the target is wearing armor, you gain a +1 circumstance bonus on attack rolls with this ammunition type, and a -1 penalty applied to the damage rolled. If the target is unarmored, then the round provides a +1 circumstance bonus on damage. On Blowthrough, only the steel core pierces, acting as an armor-piercing round only from that point on. Blowthrough factor = 9. Purchase DC Modifier = x3.

Cold Load

Cold-loaded ammunition is loaded with a reduced powder charge with the goal to keep the velocity of the bullet under 300 meters per second. By doing so, this keeps the bullet from exceeding the speed of sound, breaking the sound barrier, and creating a sonic boom. In doing so, the average noise of a firing gun is reduced from about 165 Db down to 130 Db. Doing this greatly reduces the effectiveness of the round, so normally, the bullets used are those types with high armor-piercing performance or low levels of deformation in order to retain some semblance of effectiveness against most targets (don't expect to find cold-loaded hollowpoints unless you DIY). More often, the wise choice is to find silent loads instead, which are purpose designed to be both effective and silent.

CyberThriller Special Rules: Recalculate the bullet's penetration and disruption based on a velocity of 300 m/s. Don't bitch, it doesn't even take two minutes...

D20 Modern Special Rules: For firearms that normally deal 2d4 damage, cold-loaded ammunition has no special effect. For firearms that normally deal 2d6 damage, cold-loaded ammuntion imposes a -1 penalty on damage. For firearms that normally deal 2d8 or 2d10 damage, cold-loaded ammunition imposes a -2 penalty on damage. Cold-loaded ammuntion is not available for weapons that normally deal more than 2d10 damage.

Some silenced weapons do not require cold-loaded ammunition. However, using standard ammunition in these weapons imposes the same penalties on damage as the use of cold-loaded ammunition (because the weapon slows the bullet's speed in the same manner that cold loading does).

Blowthrough factor is determined by taking the Bf of the other bullet type and reducing it by half, rounding down. A cold-loaded full metal jacket round would have a Blowthrough factor of 4 rather than 8. Purchase DC Modifier = +1

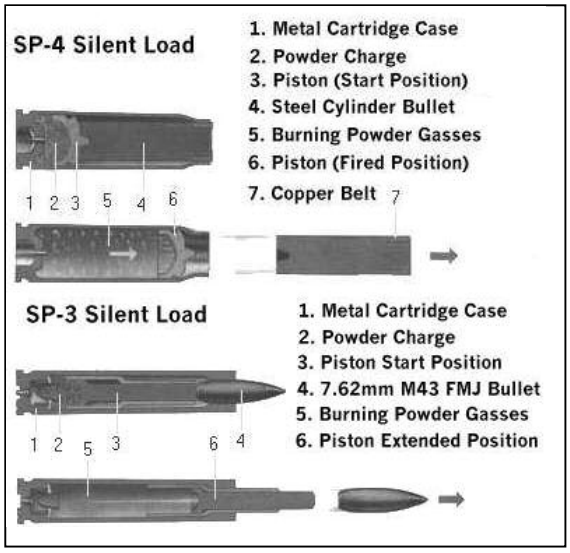
Hot Load

Hot-loaded rounds are ones that have been hand-loaded with a more powerful propellant. This results in the usualy bullet leaving the gun at a higher muzzle velocity and energy. The improvement averages out to about 30-35% over the normal round. While hot-loading makes the round more powerful, it isn't without problems. For one, it creates levels of pressure that are rarely accounted for by weapon designers. After all, they don't expect you to abuse your weapon like that. These pressures can lead to bursting cartridge casings, weapon overheating that can lead to misfires or cookoffs, barrels WILL become quickly fouled to the point that bullets can jam in the barrel, ejectors can be damaged, the firing chamber can be scored, firing pins and springs can be bent or broken... Get the picture yet? But in the end, there will always be some fool willing to mistreat his gun for a bit of extra kick. Worse still, there are fools who make a living loading hot loads, which are usually sold identified as wildcats or overchargers. Depending upon the caliber, these rounds will cost anywhere from 50% to 250% of the regular retail price of their normal counterparts. Hot loads are meant to make a bullet hit faster and harder. Cold loads are meant to keep a bullet below the sound barrier, thereby making it more quiet to use. These two concepts are diametrically opposed, and therefore incompatible.

CyberThriller Special Rules: To simulate hot loads, just multiply the disruption of the round by 30% and the penetration by 10%.

D20 Modern Special Rules: Hot loads provide a +1 bonus to damage. Any penalty due to the target having armor or natural armor is reduced by 1 point (-1 becomes 0, -2 becomes -1, etc.). They are a source of unreliability. Hot-loaded rounds gain a +2 bonus on their Blowthrough Factor. Purchase DC Modifier = x2.

Silent Load



Most silenced weapons are simply made quite a bit more quiet, rather than completely silent. The usual noise of a firearm is in the range of 160 to 165 decibels. Using subsonic ammunition (muzzle velocities of less than 300 m/s) and a silencer reduces this down to around 130 decibels. However, the Soviets wanted completely silent guns; guns that produced a mechanical click of the striker, the clack of the slide, and whatever noise emanated from the target when it. For this, they turned to World War Two and an innovative effort by the OSS to produce a silent pistol. One of the OSS projects was a "lawn dart". This was a sealed tube that fit down the barrel of a .45 ACP caliber pistol with its fins at the barrel muzzle. The tube would have the rear endcap/striker assembly removed, a .380 pistol cartridge loaded, the endcap replaced, and the dart muzzle loaded into the .45 ACP pistol. When fired, the pistol striker would hit the endcap, triggering that striker to fire the cartridge inside the tube. The round inside discharged, struck the opposite end of the sealed tube and launched the dart. In flight, a set of fins slide back to the rear to stabilize flight. The dart could lethally strike targets up to 40 meters away, and was designed to be reusable.

The Soviets took this same concept and applied it as dsiposable technology. Working with a normal pistol or rifle cartridge, they greatly reduced the woder charge, added a metal plunger or rod, and bottled and crimped the neck of the round to the bullet. When fired, the gasses would expand inside the cartridge, launching the plunger forward, which would in turn strike the bullet and launch that. The bottled neck would trap the plunger, keeping the gasses and noise inside the round. These rounds were completely silent, and could penetrate a steel helmet at 20 meters and kill at up to 100 meters. The rifle round was designated SP-3 and the pistol round was designated SP-4.

These rounds weren't sufficient for military special operations, so new munitions were required. The soviets too a 7.62 x 39mm casing and renicked it to hold a 9mm round. The SP-5 uses an FMJ round with a forward steel core supported rearward by lead, and the armor-piercing SP-6 uses a semi-jacketed exposed steel core round which can penetrate 8mm of armor plate at 100 meters. Both rounds are 9mm, 16 gram bullets at subsonic velocity. Both rounds were developed in the mid 80's. More recently has come the PAB-9, a cheaper version of the SP-6 round that fires a 17.3 gram 9mm bullet.

D20 Modern Special Rules: Ho, boy, this is going to be a bit complicated.

SP-3: This is a rifle round firing a Full Metal Jacketed round. It will fire normally, though the range increments should be reduced by 50%. These rounds will automatically jam a semi-automatic weapon due to the piston's extension beyond the nose of the spent cartrisge casing. The cold-loaded nature of the round imparts a -1 penalty to damage.

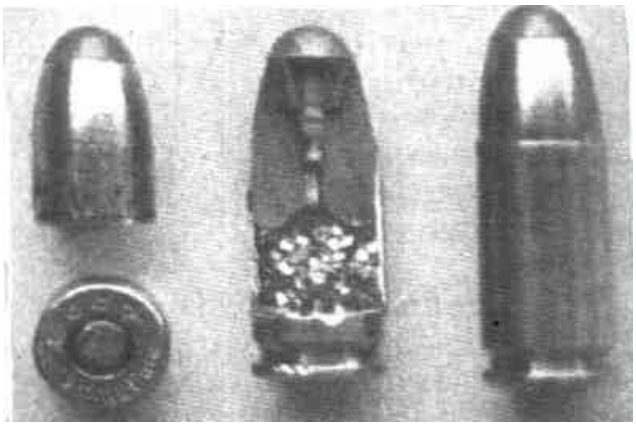
SP-4: This is a 9 x 18mm Makarov round (identified as 9 x 18 mm Russian in Ultramodern Firearms). The round it fires is effectively a steel wadcutter. While armor or natural armor imposes no penalties to hit, the round gains a +1 circumstance bonus to damage, but this is negated by the -1 damage imposed by being cold-loaded.

SP-5: This fires a cold-loaded FMJ round.

SP-6: This rounf fires a semi-jacketed exposed steel core bullet. This bullet functions as an armor-piercing round against armored and unarmored targets and as a hollowpoint bullet against unarmored targets. Apply the appropriate modifiers for those bullet types as appropriate.

Geco Blitz Aktion Trauma (BAT)

Type	Blitz Aktion Trauma
Disruption Factor	18
Penetration Factor	4.5
Type	Eliminator
Disruption Factor	25
Penetration Factor	4



The Geco BAT is one of the three dominant forms of Accelerated Energy Transfer (AET) ammunition. The bullet arose from curious circumstances. In Germany, there is a bit of a problem with escaping livestock. German police don't issue shotguns, just 9mm handguns and the occasional 9mm SMG. Thus they had a need for a universal 9mm round they could use for euthanization of anything from a cat mortally injured by a road accident to a bull crippled by a fall into a ravine. Geco, a division of Dynamit Nobel (makers of the OICW airburst munitions) came up with this response, which they now make in .38 and .357 as well as the original 9mm.

The bullet is copper, with a PE plastic nose-cap. This nosecap maintains the profile of a regular FMJ round, and thus feeds well through auto/semi-auto actions. A small hole down the centre of the bullet vents gasses upon ignition. The cap blasts off before the bullet leaves the case, and being asymmetrical, spins off and falls to the ground. Well, "falls" is a poor way of putting it, since there are

documented cases of the cap "falling" with sufficient speed to pierce thick vinyl and linoleum flooring material. This tends to be a detriment in precision shooting situations like hostage extraction. Without the cap the bullet has an aggressive hollow point and expands reliably. The pure copper BAT bullet weighs 86gr, and goes at 1400 fps from a pistol. It shoots to different points of aim in different pistols, and will shoot to a different point of aim than the regular police duty FMJ load. The MP-5 had to be modified to suit the BAT pressure curve. Despite these drawbacks the BAT had one positive advantage...it worked. Between the bullet's expansion and its tumbling nature, it produced an impressive wound channel, and the humans shot with it were generally incapacitated.

The Germans consider BAT conforms to the Geneva/Hague Conventions. Hollow point ammunition is illegal in Germany, even for the police, but BAT is permitted. Thus it may be a good choice for those who live in places like Canada and New Jersey where hollow points are banned, provided legal loopholes allow such circumvention. In Germany, regular patrol officers issued BAT only for special cases. Their SWAT Teams, known as Spezial Einsatz Kommando (SEK) can use it as their issue load.

The BAT is another bullet that was appropriated and improved by the South Africans. What the South Africans produced was a round known as the "Eliminator". Outwardly, the round looks like a red-tipped , steel or aluminum jacketed FMJ round. In reality, it is the red plastic cap to a nickel-plated copper bullet. If you pry out the red cap, you discover a bullet that esembles a wadcutter, but with a distinct cutting rim, concave dish and a central projecting button. The result is a round that produces shockwave like the THV, but also expands like a hollowpoint. When fired, the 9mm, 78 grain round exits the gun with a muzzle velocity of 1400 fps. Unlike the BAT, the Eliminator's cap instead shreds and disintegrates as the round leaves the barrel, and has completely fallen away by the time the bullet is a foot out of the muzzle. Eliminator is less limited in its capabilities than most exotic rounds, lacking only long-range capability. It penetrates car windshields, sheet steel and other likely barriers.

D20 Modern Special Rules: Treat as both a hollowpoint and AET round. This grants a +2 bonus to damage, but a -1 penalty on attack rolls against targets with armor or natural armor. Blowthrough factor = 5. Purchase DC Modifier = x2.

Equalloy

Type	Equalloy
Disruption Factor	8
Penetration Factor	40

These rounds use a bullet made of aluminum alloy, resulting in a lightweight bullet. This is one of the three dominant forms of Accelerated Energy Transfer (AET) ammunition. Unlike the other forms of AET ammunition, Equalloy doesn't offer any fringe benefits, like the armor-piercing effects of the THV or tumbling nature of the Geco. Due to the light weight to mass ratio provided by these rounds, they tend to have very poor penetration characteristics, instead transfering most of their energy in the first few inches of penetration.

D20 Modern Special Rules: These rounds function as FMJ rounds with an AET effect. That being the case, the rounds have a +1 equipment bonus to damage. They will not exit the target's body. Blowthrough factor = 3. Purchase DC Modifier = +2.

Incendiary

Incendiary rounds are filled with a flammable composition which will ignite when the round is fired. Most often, this is some manner of substance that will ignite by simply being exposed to air. Often, the bullets are designed to crumple, spilling their flammable contents on impact. Larger rounds often also use a detonator in order to use more potent flammable materials.

CyberThriller Special Rules: Handgun rounds under .380 or 9mm do not carry enough material to be effective, nor do rifle rounds under 6.5mm (.25 caliber). These rounds will do a mere +2 damage the first round, +1 damage the second. Handgun rounds .380/9mm and higher, as well as rifle rounds from .25/6.5mm to .380/9mm do +1D6 damage the round they hit and +2 damage the following round. Rifle rounds above .380/9mm do +1D10 damage the first round and +3 damage the next.

D20 Modern Special Rules: Handgun rounds under .380/9mm do +1 damage. Those .380/9mm and above do +2 damage. Rifle rounds under .30/7.62mm do +1d4 damage, while those .30/7.62mm and above do +1d8 damage. Blowthrough factor = 6. Purchase DC Modifier = x3.

Tracer

Type	Tracer
Disruption Factor	1.25
Penetration Factor	25

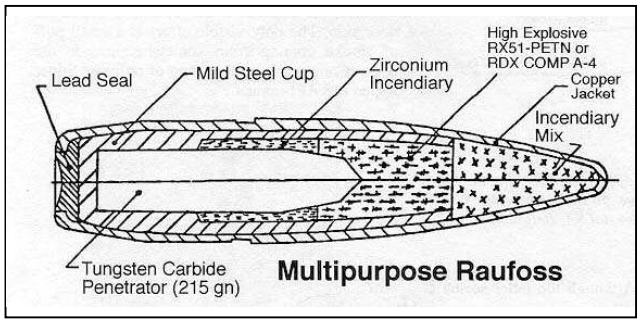
Tracer ammunition is usually a full metal jacket round that is mostly hollowed out from the rear and packed full of an illuminatory or incendiary material sufficient to burn at least 1 second. This filler is ignited by the powder discharge when the cartridge is fired. As this filler burns, it illuminates the trail that the bullet followed toward its destination. Tracers are used for aiming automatic small arms fire during nighttime combat operations, where a gunner will simply adjust the gun to get the tracer paths to align on an area where muzzle flashes can be seen. The use of tracers during daylight operations is essentially a waste of this more expensive form of ammunition. Automatic weapons loaded for night operations typically have a tracer as every fifth round in the magazine or belt.

CyberThriller Special Rules: Use of tracers at night give the shooter +1 to hit for every two consecutive rounds of automatic fire at the same target.

D20 Modern Special Rules: This ammunition grants a +1 equipment bonus on attack rolls, but only when the weapon is fired on autofire and 10 bullets are used in the attack. For instance, this bonus applies if you make a standard autofire attack. If you use the Burst Fire feat, you gain the bonus only if you choose to fire 10 bullets instead of the 5 normally required by the Burst Fire feat (firing these additional bullets does not otherwise affect your attack or damage rolls). Blowthrough factor = 6. Purchase DC Modifier = +2.

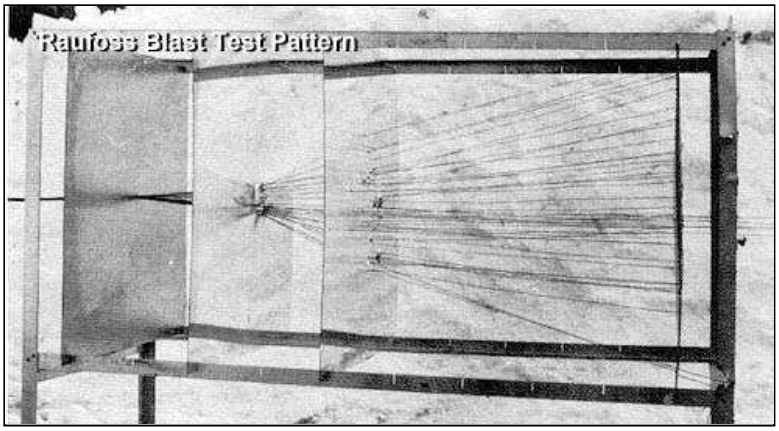
Explosive

Type	Light Explosive
Disruption Factor	5.5
Penetration Factor	70
Type	Heavy Explosive
Disruption Factor	7
Penetration Factor	70
Type	Raufoss
Disruption Factor	4
Penetration Factor	15



These are hollowpoint bullets that have been filled with an explosive substance, fused with some sort of impact detonation device, and sealed with a cap of wax. Commercially, explosive rounds are made only in calibers greater than .50 or 12.7mm. This is because explosive ammunition is illegal under international law. Any weapons of .50/12.7mm caliber are considered cannons under those same international law. So, if you want your bullets to go boom after they leave the gun, you need to do it yourself. First off, anything under .380 or 9mm diameter isn't likely going to be large enough to hold enough explosive to have anything other than negligible effect. Second, optionally, any bullet of less than 3 grams of mass are not going to be capable of holding enough volume of explosive to have anything other than negligible effect. With this smaller bullets, the explosive contents would simply enhance the expansion of the bullet. Once you have a bullet of sufficient mass, you need to get to building your explosive bullet. Typically, one uses a steel jacketed round with a mercury fulminate fill. The mercury fulminate detonates on impact without need for a fuse. Unfortunately, it will react and explode in your face if you try filling it inside a bullet with a brass, bronze, aluminum, copper or zinc-plated jacket. Seal it up and you're ready to go with your own explosive bullet. These handmade explosive bullets introduce a dangerous level of unreliability to your weapon. The explosive charge is subject to shock. That means that while it is most likely to explode on impact with something, there is also a possibility that the round will explode in your gun. The chance is small, not even 1 in 100, but when it happens, you can kiss your gun goodbye and forget about using that hand for a few months.

As it is, only the Norweigans manufacture an explosive .50 caliber round, called the Raufoss round. The technical designation for the round is High Explosive Incendiary Armor Piercing (HEIAP), a complicated term usually abridged to "multi-Purpose" (MP). In the United States, the round has only been adopted by the US Navy SEALS (and by default, SOCOM as well) as the Mark 211 MP .50 caliber round. However, this round, as well as the FN Herstal variant, are issued by some at least six other nations.



CyberThriller Special Rules: Handgun bullets under 9mm/.380 caliber gain +2D3 damage. Those over that limit gain +2D8 damage. Rifle rounds above .30 caliber or 7.62mm will do +2D10 damage. On a misfire, roll 1d100. On a result of 01, the round explodes in the weapon, destroying it.

D20 Modern Special Rules: Handgun bullets under 9mm or .380 will do +1 damage. Handgun bullets above that do +2 damage. Rifle bullets under .30 or 7.62mm will do +3 damage. Those above that will do +1d6 damage. Blowthrough factor = 5. Purchase DC Modifier = x3

The Raufoss round, gains explosive, incendiary and armor-piercing effects. In all, it will gain +2d6-1 damage, with a +1 bonus on attack rolls against targets with armor or natural armor. Raufoss round Blowthrough factor = 15. Raufoss Round Purchase DC = 5 PER ROUND.

WEAPON MISFIRES

What's a little weapon unreliability with the fun effects that unreliability can cause?

Misfire Table			
Ammo Misfire	Weapon Misfire	D20 Effect	Cyberthriller Effect
01-30	01-05	Misfire. The round is a dud in the chamber and must be cleared manually.	
31-40	06-10	Hangfire. The round is a dud in the chamber, but will discharge at random sometime in the next two minutes (1D100 seconds)	
40-55	11-46	Stovepipe. The round fires, but the casing jams in the ejection port. Or the weapon will jam up in some other fashion, such as a bulged casing. Make a reflex or dexterity check to clear the round manually. If the check fails, the gun must be broken down and reassembled to clear the jam.	
56-60	47-50	Cookoff. The round detonates in the chamber as it is loading for one reason or another. This destroys the weapon. Roll 1D10. On a roll of 1-3, the detonation in the chamber vents sufficient gas into the magazine to cause the remaining rounds in the magazine to discharge as well. Go see what you can do about buying yourself a new hand.	
61-00	51-60	Backblast. The powder doesn't burn properly and vents an abnormal amount of particulate matter back at the shooter. Take one point of damage from excess powder burns and your vision is obscured for 1D6 minutes.	
	61-65	Firing Pin Breaks. The gun is useless until you replace the firing pin. Maybe the gun will do some damage if you throw it at someone. Alternately, some other piece, like a recoil spring, trigger linkage, etc. will break.	
	66-80	Ouch. Drop the weapon. Waste an action the next turn to pick it up. Just be glad it didn't discharge.	
	81-90	Big Ouch. You dropped your gun and it discharges. Roll 1d100. 1-20: Bullet strikes you. 21-25: Bullet strikes an ally. 26-30: Strikes an enemy. 31-35: Strikes an innocent bystander. 36-100: ricochets a few times and scares the hell out of everyone.	
	91-94	Don't Go Dancing. Lose your balance and stumble. Dexterity or reflex check to remain standing. If you fall down, you can either waste an action next round to stand or fire from a sitting or prone position.	
	95-96	Oops. Shoot a friend.	
	97	Big Oops. Shoot a friend for an automatic critical hit.	
	98-99	That Was Dumb. You manage to shoot yourself.	
	00	And This Is Dumber. Shoot yourself for an automatic critical hit.	

AGRAM 2000

This weapon is a 9mm Parabellum submachinegun used by the Croatian army as a recon and light weapon, also supplied to armored vehicle crews and offered as a Personal Defense Weapon for non-combatants. The weapon is a Croatian "modernization" of the Beretta PM-12S SMG, featuring the same Safe, Single Shot and Full-Auto fire trigger group of the Beretta. Since gaining independence, Croatia uses it as one of the replacement weapons for all its various Bloc caliber weapons (9x18mm, 7.62mm Bloc, 5.75mm Bloc) in order to establish the conformity with NATO weapons that will make it easier for Croatia to gain entry into the European Union. Magazines are available for it in 20, 32, and 40 round capacities. A detachable silencer/suppressor is also available for the weapon. Attaching it nearly doubles the weapon's length. Unfortunately, the weapon has been adopted extensively as a criminal weapon in former Eastern Bloc nations. It's name means "honor".

Weapon	Agram 2000				
Manufacturer			Year	2000-	
Nation	Croatia				
Caliber	9mm Parabellum		Mags	20, 32, 40	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.9 kg	ROF	SS	40
	Loaded	2.2 kg		MB	-
Length	165 mm			Burst	5
Range	Effect.	110 m		Auto	300
	Max.			Cyclic	800
Notes					

AGRAM 2000

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Agram 2000	SMG	0	J	M	9mm P	0	20	2 [SS], 5 [AB], 15 [A], 40 [C]	ST	110	1.9	2.2	$650
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Agram 2000	2d6	20	ballistic	35	SA, A	20, 32, 40	Md	5 lb	16	Res(+2)
Special Rules										

AMERICAN 180

The American 180 is a potent small caliber submachine gun capable of easily competing with the many new PDW concept weapons like the FN Herstal P-90 or the HK PDW. Produced by the upstart firearms company, Christopher and Associates, and manufactured at an austrian factory, this capable SMG was first sold in the mid-1970's, though its basic design dates back to the early 60's and the Casull Carbine, before the design was sold to Voere in Austria in 1972. The SMG was the first weapon to appear on the US firearms market with a laser targeting device as a standard option, though it drove the weapon's price up to a whopping $1,190! Targetted at law enforcement and military sales, this gun could fire .22 LR and .22 short magnum rounds at an astonishing rate of 1,500 rounds per minute, all with virtually no recoil! At this volume of fire, a full magazine of 177 rounds of .22 ammo could blow a hole through a cinder block wall large enough for a fully equipped soldier or armored SWAT officer to climb through. That same devistating power was also capable of eating several bulletproof vests of the time as a light snack before lunch.

These original American 180's suffered a number of quality problems, both with the firearm itself and the ammunition it fired. The high rate of fire results in heavy vibration that crystalizes metal components and makes them increasingly more brittle with every magazine fired. Additionally, the magazines weren't the most durable. It was easily possible to break the spring inside while winding it. The nice thing about these magazines is that they could be loaded and store without subjecting the spring to long term tension, and the magazine can be wound just prior to loading the weapon. The second major problem is with the quality of some .22 LR ammunition. At that point in time (1972-1981), .22 LR was cheap ammo with no quality control. The .22 LR was never designed to handle the stress of full auto fire, let alone at such a high rate, which lead to cook-offs, full auto fire while the weapon was set to semi-automatic, and a variety of jamming problems caused by bulged or ruptured cartridges. These ammunition problems became so severe that the American 180 came with a warning; use aluminum-cased .22 LR cartridges at your own risk.

In the end, the American 180 enjoyed reasonable civilian sales and was adopted by a few small and mainly rural police departments, as well as numerous prison systems. This did not go well for the first several years and the design was bought out by American Arms International, Inc, which re-released the weapon in 1981 at a retail price of $495. 1986 saw the company shut down by the BATF for filing paperwork on guns that had not yet been manufactured as part of an effort to circumvent the ban on autofire weapons in the United States that year.

During the five years that American Arms International, Inc. produced the American 180, they produced a range of variants. These included the American 180 M-1 and American 180 M-2. These were .22 Long Rifle chambered weapons, the M-1 semi-auto only and the M-2 selective fire. This was followed by the American 180 M-21 American Eagle and American 180 M-22 American Eagle. These were identical to the M-1 and M-2, respectively, but were instead chambered for .22 Short Magnum, which performs similarly to FN Hertsal's 5.7mm round. This change in caliber also resulted in the American Eagles reaching a rate of fire of 1,800 rounds per minute.

They also produced a briefcase gun, similar to Heckler & Koch's MP-5 Attache gun. Encased within an aluminum briefcase, this short-barrelled M-2 was triggered by two buttons near the handle. The first button activates the laser pointer integrated inside the case and the second button triggers the gun to fire.

Spare 177 round magazines retailed for $85 when available. However, American Arms International had problems producing them in numbers, so the open market price for what few were available was often in the range of $270-$350. While the magazines are expensive, remember that $3 will buy you a box of 100 rounds of .22 LR ammo from a reputable manufacturer.

See the ILARCO 180 for illustrations of the American 180.

Weapon	American 180 M-2			
Manufacturer	American Arms Intl. Inc.	Year	1980-1986	
Nation	United States			
Caliber	.22 Long Rifle	Mags	177	
Accuracy	Group	15.25 cm	MOA	
	Kill			
Velocity		Energy		
Weight	Empty	2.95 kg	ROF	SS 40
	Loaded	4.55 kg		MB -
Length	914 mm			Burst 20
Range	Effect.	200 m		Auto 500
	Max.			Cyclic 1500
Notes	selective fire version for law enforcement sales. A semi-automatic version is available as the American 180 M-1			

Weapon	American 180 M-22			
Manufacturer	American Arms Intl. Inc.	Year	1980-1986	
Nation	United States			
Caliber	.22 Short Magnum	Mags	177	
Accuracy	Group	15.25 cm	MOA	
	Kill			
Velocity		Energy		
Weight	Empty	2.72 kg	ROF	SS 40
	Loaded	4.32 kg		MB -
Length	927 mm			Burst 20
Range	Effect.	200 m		Auto 500
	Max.			Cyclic 1800
Notes	selective fire version for law enforcement sales. A semi-automatic only version is available as the M-21 American Eagle.			

Weapon	American 180 M-2 Briefcase Gun			
Manufacturer	American Arms Intl. Inc.	Year	1980-1986	
Nation	United States			
Caliber	.22 Long Rifle	Mags	177	
Accuracy	Group	15.25 cm	MOA	
	Kill			
Velocity	461 m/s	Energy		
Weight	Empty	2.72 kg	ROF	SS 40
	Loaded	4.32 kg		MB -
Length	927 mm			Burst 20
Range	Effect.	60 m		Auto 500
	Max.			Cyclic 1500
Notes				

AMERICAN 180

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
American 180 M-1	SMG	+2	T	C,O	.22 LR	0	177	2 [SS]	ST	200	2.95	4.55	$395
American 180 M-2	SMG	+2	T	C,O	.22 LR	0	177	2 [SS], 20 [AB], 1500 [C]	ST	200	2.95	4.55	$495
American Eagle M-21	SMG	+2	T	M,O	.22 SM	0	177	2 [SS]	ST	200	2.95	4.55	$550
American Eagle M-22	SMG	+2	T	M,O	.22 SM	0	177	2 [SS], 20 [AB], 1800 [C]	ST	200	2.95	4.55	$650
American 180 M-2 Briefcase Gun	SMG	-2	N	M,O	.22 LR	0	177	2 [SS], 20 [AB], 1500 [C]	ST	50	4.2	5.8	$2800
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
American 180 M-1	2d6	20	ballistic	65	SA, A	177	Lg	10 lb	14	Lic (+1)
American 180 M-2	2d6	20	ballistic	65	SA, A	177	Lg	10 lb	15	Res (+2)
American Eagle M-21	2d8	20	ballistic	65	SA, A	177	Lg	10 lb	15	Lic (+1)
American Eagle M-22	2d8	20	ballistic	65	SA, A	177	Lg	10 lb	16	Res (+2)
American 180 M-2 Briefcase Gun	2d6	20	ballistic	15	SA, A	177	Lg	13 lb	21	Res (+2)
Special Rules										

AMERICAN DERRINGER LM-4 SIMMERLING / LM-5

The Semmerling LM-4 is an unusual gun which utilizes the blow-forward principle which was said to help control the recoil of the .45 ACP in such a small gun. To operate the gun, you insert a magazine, pull the slide fully forward, and release it. The gun incorporates a self-cocking striker mechanism that was activated through a long trigger pull. Even though it looks like an auto-loading pistol, it is actually a manually operated repeater. The slide must be pulled forward after each shot to eject the spent case and load a fresh round of ammunition. The LM-4, originally made by Semmerling, under a contract with the US Army. The manufactured roughly 600 units between 1978 and 1982. These originals currently sell for between $1600 and $5000 when available. They also have a smaller capacity of 4 rounds per magazine.

The gun was licensed by American Derringer prior to 1994, and they now manufacture and market the weapon for commercial sales under the moniker of LM-4 Simmerling. It is available in both .45 ACP and 9mm calibers. Initially, American Derringer sold these at a rather inexpensive price of about $400, but they have since started taking advantage of collector prices for the original by first eliminating the 9mm version, then limiting the annual production of the LM-4, thereby raising the price to a shocking $2,660.

American Derringer has also introduced the LM-5 in an effort to further profit from their licensing of the Semmerling. This compact semi-automatic is made of stainless steel. This is, however, a normal blowback operated weapon, rather than the innovative blow-forward design of the LM-4. The LM-5 is available in .25 ACP and .32 Magnum calibers. It too is produced on a limited annual basis.

LM-4

LM-5

Weapon	LM-4 Semmerling				
Manufacturer	American Derringer		Year	1994-	
Nation	United States				
Caliber	.45 ACP		Mags	4	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.68 kg	ROF	SS	20
	Loaded	0.73 kg		MB	
Length	132 mm			Burst	
Range	Effect.	25m		Auto	
	Max.			Cyclic	
Notes	Must be manually recharged or recocked after each shot is fired.				

Weapon	LM-4 Semmerling				
Manufacturer	American Derringer		Year	1994-1998	
Nation	United States				
Caliber	9mm Parabellum		Mags	4	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.68 kg	ROF	SS	20
	Loaded	0.72 kg		MB	
Length	132 mm			Burst	
Range	Effect.	25m		Auto	
	Max.			Cyclic	
Notes					

Weapon	LM-4				
Manufacturer	Semmerling		Year	1978-1982	
Nation	Germany				
Caliber	.45 ACP		Mags	5	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.78 kg	ROF	SS	20
	Loaded	0.84 kg		MB	
Length	132 mm			Burst	
Range	Effect.	25m		Auto	
	Max.			Cyclic	
Notes					

Weapon	LM-5				
Manufacturer	American Derringer		Year	1998-	
Nation	United States				
Caliber	.25 ACP or .32 Magnum		Mags	5 (.25) or 4 (.32)	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.38 kg	ROF	SS	40
	Loaded	0.44 kg		MB	
Length	102 mm			Burst	
Range	Effect.	25m		Auto	
	Max.			Cyclic	
Notes					

AMERICAN DERRINGER LM-4 / LM-5

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Semmerling LM-4	HND	0	P	O	.45 ACP	-1	5	1 [SS]	ST	25m	0.78	0.84	$5000
LM-4 Semmerling .45 ACP	HND	0	P	C	.45 ACP	-1	4	1 [SS]	UR	25m	0.68	0.73	$2660
LM-4 Semmerling 9mm	HND	0	P	O	9mm P	-1	4	1 [SS]	UR	25m	0.68	0.72	$3000
LM-5 .25 ACP	HND	0	P	C	.25 ACP	-1	5	2 [SS]	ST	25m	0.38	0.44	$358
LM-5 .32 Magnum	HND	0	P	C	.32 Mag	-1	4	2 [SS]	ST	25m	0.38	0.44	$358
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Semmerling LM-4	2d6	20	ballistic	10	SS	5	Sm	1 lb	23	Res (+2)
American Derringer LM-4	2d6	20	ballistic	10	SS	4	Sm	1 lb	21	Res (+2)
American Derringer LM-5 .25 ACP	2d4	20	ballistic	10	SS	5	Sm	1 lb	14	Res (+2)
American Deringer LM-5 .32 Magnum	2d4	20	ballistic	10	SS	4	Sm	1 lb	14	Res (+2)
Special Rules	Easily Concealable.									

AMERICAN DERRINGER MODEL 1

The Model 1 is a double-barrelled over-under derringer in either .45 Colt of .410 caliber. As with all American Derringer weapons, it is equipped with a manually operated hammer block style safety which automatically disengages when the hammer is cocked. The weapon also possesses an automatic barrel selector.

The weapon can also be special ordered in a very wide range of calibers. These additional calibers include:

.45-70 (Single Shot)	$412
.45 ACP	$360
.45 Long Colt	$410
.45 Winchester Magnum	$485
.44-40 Winchester	$423
.44 Magnum	$495
.44 Special	$423
.41 Magnum	$495
.40 Smith & Wesson	$360
.380 ACP	$340
.38 Special +P+	$353
.38 Special	$345
.38 Special Shot Shell	$360
.38 Super	$360
.357 Magnum	$360
.357 Maximum	$370
.32-20	$345
.32 Magnum / Smith & Wesson Long	$350
.30-30 Winchester	$485
.30 M1 Carbine	$355
.22 Long Rifle	$345
.22 Magnum	$350
10mm Automatic	$375
9mm Parabellum	$345
.223	$515

Weapon	Model 1				
Manufacturer	American Derringer		Year	P2000	
Nation	United States				
Caliber	.45 Long Colt / .410		Mags	2	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.42 kg	ROF	SS	40
	Loaded	0.44 kg		MB	
Length	122 mm			Burst	
Range	Effect.	25m		Auto	
	Max.	70m		Cyclic	
Notes					

AMERICAN DERRINGER MODEL 1

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range	Weight Empty	Weight Loaded	Cost
American Derringer Model 1	HND	-3	P	C	.45 ACP and .410	-2	2	2 [SS]	ST	25m	.42 kg	.44 kg	$423
American Derringer Model 1	HND	-3	P	C	.45-70	-2	1	1 [SS]	ST	25m	.42 kg	.44 kg	$412
Special Rules	For additional calibers, use statistics For the .45/.410 caliber Model 1 while applying the damage appropriate for the cartridge caliber. Prices are listed on the front page with calibers.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
American Derringer Model 1 .45/.410	2d6	20	ballistic	10	SA	2	S	1 lb	15	Lic (+1)
American Derringer Model 1 .45-70	3d4	20	ballistic	10	SS	1	S	1 lb	14	Lic (+1)
Special Rules	Easily Concealable.									

AMERICAN DERRINGER MODEL 4

The Model 4 is another double-barrelled derringer of over-under configuration. As with all American Derringer weapons, it is equipped with a manually operated hammer block type safety which automatically disengages when the hammer is cocked. The weapon possesses an automatic barrel selector. The weapon is primarily available in as a weapon capable of firing both .45 Colt Long and .410 cartridges. It is also available by special order in these additional calibers:

.45-70	$585
.45 ACP	$440
.45 Long Colt	$435
.44 Magnum with OSG	$540
.357 Magnum	$435
.357 Maximum	$440

The derringer is also available as the Model 4 Alaskan Survival. The weapon is designed with two different caliber barrels, .45-70 on top and either .45 LC / .410 or .45 LC only on the bottom. The pistol is also manufactured primarily of stainless steel, making it an exceptional backup weapon for rugged outdoor use.

Weapon	Model 4				
Manufacturer	American Derringer		Year	P2000	
Nation	United States				
Caliber	.45 Long Colt / .410		Mags	2	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.46 kg	ROF	SS	40
	Loaded	0.48 kg		MB	
Length	152 mm			Burst	
Range	Effect.	25m		Auto	
	Max.	70m		Cyclic	
Notes					

Weapon	Model 4 Alaskan Survival				
Manufacturer	American Derringer		Year	P2000	
Nation	United States				
Caliber	Top barrel: .45-70 top Bottom barrel: .45/.410		Mags	1 & 1	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.46 kg	ROF	SS	40
	Loaded	0.48 kg		MB	
Length	152 mm			Burst	
Range	Effect.	25m		Auto	
	Max.	70m		Cyclic	
Notes					

AMERICAN DERRINGER MODEL 4

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range	Weight Empty	Weight Loaded	Cost
American Derringer Model 4	HND	-3	P	C	.45 ACP and .410	-2	2	2 [SS]	ST	25m	.46 kg	.48 kg	$450
American Derringer Model 4 Alaskan Survival	HND	-3	P	C	.45-70 top .45/.410 bt	-2	1	1 [SS]	ST	25m	.46 kg	.48 kg	$500
Special Rules	For additional calibers, use statistics For the .45/.410 caliber Model 1 while applying the damage appropriate for the cartridge caliber. Prices are listed on the front page with calibers.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
American Derringer Model 4	2d6	20	ballistic	10	SA	2	S	1 lb	15	Lic (+1)
American Derringer Model 4 Alaskan	3d4	20	ballistic	10	SS	2	S	1 lb	16	Lic (+1)
Special Rules	Easily Concealable.									

ARCUS 94/98 BELITZA

The Arcus pistol is a gun with a complicated background. It was originally developed by the Bulgarian company Arcus in 1994. It is one of a broad number of clones of the FN Browning Hi-Power GP-35 pistol. Unlike most, the Arcus is very well made and possesses a number of cosmetic improvements. The Arcus 94 is a single action, recoil operated, locked breech pistol with a tipping barrel and an external hammer. There is a manual safety on the left, magazine disconnect safety and a slide disconnect that prevents the weapon from firing if the slide is not closed completely. The tipping barrel has two lugs that lock into the underside of the slide, and to lock or unlock the slide, it uses a cam under the barrel that interacts with the frame. The axis of the slide lock is also used as a takedown pin, so that when the slide stop is removed, the slide, barrel and recoil spring can be removed from the frame. The frame is made of high grade steel tested to 4,500 lbs tensile strength, and different finishes are available (gold plate and stainless steel are the most popular) as well as rubber, polymer and wooden grip panels. Sights are of a fixed type, dovetailed into the slide, with three white dots for better target acquisition. The Arcus 94 can use magazines with 10 and 13 round capacities. It was made for the civilian market and has seen wide export.

Four years later, the Bulgarian manufacturer also developed the upgraded Arcus-98 DA. The 98 is virtually identical to the 94, but instead uses a double action and an additional automated firing pin safety. Additionally, it uses magazines with a capacity for 15 rounds. The Arcus-98 DA was adopted by the Bulgarian Army and police as a standard sidearm, as well as being offered for export.

Arcus has since also added compact models of both pistols, reducing the weapon's length by nearly 20 mm and reducing the weight by 0.2 kg. They have also redesignated the Arcus-94 as the Arcus-98 SA, the SA indicating it's single action design. At the time of redesignation, it was also modified to accept the 15 round magazines as well. This leaves the product line designated at Arcus-98 SA, Arcus-98 DA, Arcus-98C SA and Arcus-98C DA. All Arcus pistols come with two 10-round magazines and a cleaning rod.

All Arcus pistols are reported as a comfortable to use, very reliable and durable. They may look a little bit conservative in the ages of the light alloys,polymers and other hi-tech gizmos, but reasonable amount of conservatism will never hurt, in my opinion. The complications come in the weapon's distribution. Live in Iceland? If you want to buy and Arcus-94, the gun is manufactured in Bulgaria, exported to a U.S. subsidiary, shipped off to a distributor in Norway, who is the only legal supplier for your local gun shop in Iceland.

Weapon	Model 94, Model 98 SA				
Manufacturer	Arcus Co.		Year	1994-	
Nation	Bulgaria				
Caliber	9mm Parabellum		Mags	10, 13, 15	
Accuracy	Group			MOA	
	Kill				
Velocity	340 m/s		Energy		
Weight	Empty	0.97 kg	ROF	SS	40
	Loaded	1.11 kg		MB	
Length	203 mm			Burst	
Range	Effect.	110 m		Auto	
	Max.			Cyclic	
Notes					

Weapon	Model 98 DA				
Manufacturer	Arcus Co.		Year	1998-	
Nation	Bulgaria				
Caliber	9mm Parabellum		Mags	10, 13, 15	
Accuracy	Group			MOA	
	Kill				
Velocity	340 m/s		Energy		
Weight	Empty	0.95 kg	ROF	SS	40
	Loaded	1.09 kg		MB	
Length	203 mm			Burst	
Range	Effect.	110 m		Auto	
	Max.			Cyclic	
Notes					

Weapon	Model 94C, Model 98C SA				
Manufacturer	Arcus Co.		Year	1994-	
Nation	Bulgaria				
Caliber	9mm Parabellum		Mags	10, 13	
Accuracy	Group			MOA	
	Kill				
Velocity	340 m/s		Energy		
Weight	Empty	0.92 kg	ROF	SS	40
	Loaded	1.06 kg		MB	
Length	186 mm			Burst	
Range	Effect.			Auto	
	Max.			Cyclic	
Notes					

Weapon	Model 98C DA				
Manufacturer	Arcus Co.		Year	1998-	
Nation	Bulgaria				
Caliber	9mm Parabellum		Mags	10, 13	
Accuracy	Group			MOA	
	Kill				
Velocity	340 m/s		Energy		
Weight	Empty	0.90 kg	ROF	SS	40
	Loaded	1.04 kg		MB	
Length	186 mm			Burst	
Range	Effect.			Auto	
	Max.			Cyclic	
Notes					

ARCUS 94 / 98 BELITZA

Cyberthriller													
Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Arcus-94	HND	0	J	C,M	9mm P	0	10, 13	2 [SS]	ST	110 m	0.97	1.11	$289
Arcus-98 SA	HND	0	J	C,M	9mm P	0	10, 13, 15	2 [SS]	ST	110 m	0.97	1.11	$289
Arcus-98 DA	HND	0	J	C,M	9mm P	0	10, 13, 15	2 [SS]	ST	110m	0.95	1.09	$289
Arcus-94C	HND	0	P	C	9mm P	0	10, 13	2 [SS]	ST	100m	0.92	1.06	$289
Arcus-98C SA	HND	0	P	C	9mm P	0	10, 13	2 [SS]	ST	100m	0.92	1.06	$289
Arcus-98C DA	HND	0	P	C	9mm P	0	10, 13	2 [SS]	ST	100m	0.90	1.04	$289
Special Rules													

D20 Modern										
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Arcus-94, Arcus-98 SA, Arcus-98 DA	2d6	20	ballistic	35	SA	10, 13, 15	Md	2 lb	13	Lic (+1)
Arcus-94C, Arcus-98C SA, Arcus-98C DA	2d6	20	ballistic	35	SA	10, 13	Sm	2 lb	13	Res (+2)
Special Rules	The Arcus-94C, Arcus-98C SA, and Arcus-98C DA are considered easily concealable.									

ARCUS 95 R

Bulgarian manufacturer Arcus hasn't limited itself to only pistols. After releasing the Arcus-94, they also developed a line of revolvers under the designation of Arcus-95. These revolvers are available in 2.5 and 4 inch barrel lengths, with four calibers (.357 Magnum, .38 Special, 9mm Parabellum, and 9mm Makarov). All 8 revolvers use the same frame and action, leading to the release of a series of conversion kits; you can change the caliber of the weapon by simply changing the barrel and cylinder. These conversion kits come with one cylinder and one barrel of either 2.5 or 4 inches length.

Weapon	Model 95 R / 4				
Manufacturer	Arcus Co.		Year	1994-	
Nation	Bulgaria				
Caliber	.357 Magnum, .38 Special, 9mm Parabellum, 9mm Makarov.		Mags	6	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.0 kg	ROF	SS	40
	Loaded	1.06 kg		MB	
Length	238 mm			Burst	
Range	Effect.	130 m		Auto	
	Max.			Cyclic	
Notes					

Weapon	Model 95 R / 2.5				
Manufacturer	Arcus Co.		Year	1994-	
Nation	Bulgaria				
Caliber	.357 Magnum, .38 Special, 9mm Parabellum, 9mm Makarov.		Mags	6	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.9 kg	ROF	SS	40
	Loaded	0.96 kg		MB	
Length	200 mm			Burst	
Range	Effect.	90 m		Auto	
	Max.			Cyclic	
Notes					

ARCUS 95 R

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Arcus-95R /4	HND	0	J	C	.357 Mag	0	6	2 [SS]	ST	110 m	1.0	1.06	$275
Arcus-95R /4	HND	0	J	C	.38 Spec	0	6	2 [SS]	ST	110 m	1.0	1.06	$275
Arcus-95R /4	HND	0	J	C	9mm P	0	6	2 [SS]	ST	110m	1.0	1.06	$275
Arcus-95R /4	HND	0	J	C	9mm M	0	6	2 [SS]	ST	110m	1.0	1.06	$275
Arcus-95R /2.5	HND	0	J	C	.357 Mag	0	6	2 [SS]	ST	90m	0.9	0.96	$275
Arcus-95R /2.5	HND	0	J	C	.38 Spec	0	6	2 [SS]	ST	90m	0.9	0.96	$275
Arcus-95R /2.5	HND	0	J	C	9mm P	0	6	2 [SS]	ST	90m	0.9	0.96	$275
Arcus-95R /2.5	HND	0	J	C	9mm M	0	6	2 [SS]	ST	90m	0.9	0.96	$275
Special Rules													

D20 Modern

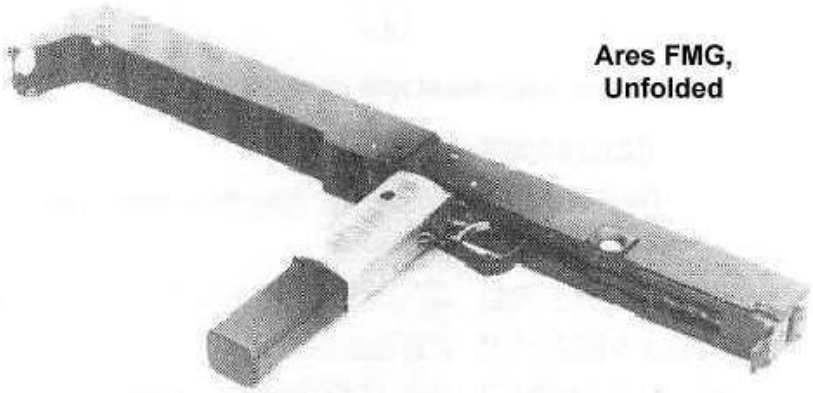
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Arcus 95R / 4 (.357 Magnum)	2d6	20	ballistic	45	SA	6C	Md	2 lb	13	Lic (+1)
Arcus 95R / 4 (.38 Special)	2d6	20	ballistic	40	SA	6C	Md	2 lb	13	Lic (+1)
Arcus 95R / 4 (9mm Parabellum)	2d6	20	ballistic	35	SA	6C	Md	2 lb	13	Lic (+1)
Arcus 95R / 4 (9mm Makarov)	2d6	20	ballistic	35	SA	6C	Md	2 lb	13	Lic (+1)
Arcus 95R / 2.5 (.357 Magnum)	2d6	20	ballistic	30	SA	6C	Sm	2 lb	13	Lic (+1)
Arcus 95R / 2.5 (.38 Special)	2d6	20	ballistic	30	SA	6C	Sm	2 lb	13	Lic (+1)
Arcus 95R / 2.5 (9mm Parabellum)	2d6	20	ballistic	25	SA	6C	Sm	2 lb	13	Lic (+1)
Arcus 95R / 2.5 (9mm Makarov)	2d6	20	ballistic	25	SA	6C	Sm	2 lb	13	Lic (+1)
Special Rules	The Arcus 95 R revolvers with 2 1/2 inch barrels should be considered easily concealable.									

ARES FOLDING MACHINEGUN (ARES FMG)

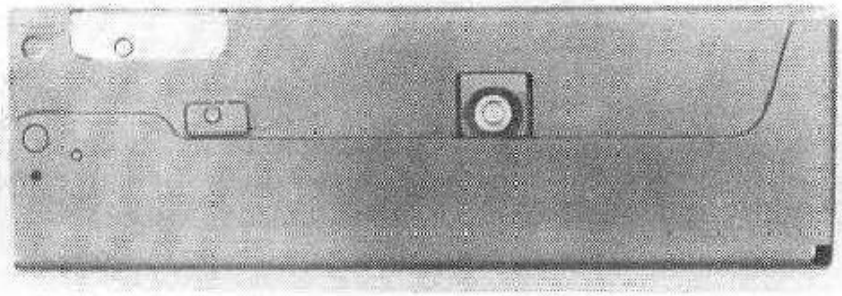
Weapon	Folding Machinegun / FMG			
Manufacturer	ARES, Inc.		Year	1978-1980
Nation	Bulgaria			
Caliber	9mm Parabellum		Mags	20, 25, 32
Accuracy	Group	30 cm	MOA	
	Kill			
Velocity	378 m/s		Energy	570 J
Weight	Empty	2.25 kg	ROF	SS 40
	Loaded	2.86 kg		MB -
Length	262 mm folded, 503mm opened			Burst 3
Range	Effect.	80 m		Auto 128
	Max.			Cyclic 650
Notes				

This weapon was developed as a concealable close range weapon capable of providing volume fire, suitable primarily for VIP bodyguard duties. The complete weapon, including a magazine, folds down to a small box 26x6.5x2.5 cm in volume (roughly the size of a carton of cigarettes) and can be unfolded and readied in under 2 seconds. Not only was the weapon concealable under even a thin jacket, but its lack of protruding controls or sights meant the weapon folded into a form that could easily be passed off as a transceiver case or perhaps even as a large lithium battery for a laptop or professional portable audio-visual equipment. Unfortunately, this weapon never really sold and was not produced in significant numbers. Ares still keeps the weapon available for sale as a custom production unit, which makes it prohibitively expensive. Rumor has it that the only major sale of the weapon was to the U.S. Secret Service for use by members by members of the President's security detail. Magazines are available in 20, 25, and 32 round capacities. This weapon was one of the last ones designed and patented by Eugene Stoner before his death. However, even though the Ares FMG was never a weapon popular enough to gain any significant sales, it was impressive enough to spur imitation in the Ukrainian Goblin SMG and the Russian PP-90.

The ARES FMG can be described as consisting of two shells. The first shell contains the barrel and bolt assembly. The second folds over the first and when unfolded acts as the weapons butt stock. The magazine is within the handgrip and is attached to the casing containing the barrel. It folds into the space between the two shells. There is a simple cocking handle below the weapon's muzzle. The weapon is of all metal construction although during development it was anticipated that composite materials would be used in later models resulting in a lighter weight weapon.



Ares FMG, Unfolded



Ares FMG, Folded

ARES FOLDING MACHINEGUN (ARES FMG)

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Ares FMG	SMG	0	J	E,O	9mm P	0	32	2 [SS], 7 [A], 32 [C]	ST	80	2.25	2.86	$850
Special Rules	Unfolding consumes one action.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Ares FMG	2d6	20	ballistic	25	SA, A	20, 25, 32	Md	6 lb	17	Res(+3)
Special Rules	When folded, it is considered easily concealable. Unfold and fire as the same action at -2 to hit.									

ARSENAL SHIPKA

The Shipka was designed bythe Bulgarian State arsenal, Arsenal Co., as a commecrial product dedicated to export sales on the police and military markets. According to some sources, it is even in use with Bulgaria's own police and state security forces. The weapon is named after a site of historical significance in Bulgaria. The weapon is a straightforward design using simple blowback operation and firing from an open bolt. The weapon's safety has two settings; safe and full auto. There is no semiautomatic mode or burst mode to this weapon. The lower receiver, pistol grip and trigger guard are made from high impact polymer, while the upper receiver is made from steel. The wire buttstock fold to the left side of the weapon. Magazines are available in 32 round capacity for the 9x18mm Makarov model or 25 rounds for the 9x19mm Parabellum model.

Weapon	Folding Machinegun / FMG			
Manufacturer	Arsenal Co.		Year	1996-
Nation	Bulgaria			
Caliber	9mm Makarov or 9mm Parabellum		Mags	32 (9mm M) or 25 (9mm P)
Accuracy	Group		MOA	
	Kill			
Velocity			Energy	
Weight	Empty	2.2 kg	ROF	SS 40
	Loaded	2.5 kg		MB 3
Length	338 mm folded, 625mm opened			Burst 4
Range	Effect.	150 m		Auto 200
	Max.			Cyclic 700
Notes				

ARSENAL SHIPKA

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Shipka	SMG	0	J	M	9mm P	0	25	2 [SS], 3 [B], 10 [A], 25 [C]	ST	150	2.2	2.6	$480
Shipka	SMG	0	J	M	9mm M	0	32	2 [SS], 3 [B], 10 [A], 25 [C]	ST	150	2.2	2.6	$480
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Shipka 9mm Parabellum	2d6	20	ballistic	50	SA, B, A	25	Md	5 lb	15	Mil (+3)
Shipka 9mm Makarov	2d6	20	ballistic	50	SA, B, A	32	Md	5 lb	15	Mil (+3)
Special Rules										

ASTRA MODEL 300

The Astra Model 300 was a post World War One pistol released by Astra-Unceta y Cia for commerical sales and export. The pistol was more compact than the Model 400 it was based upon, and was available in a number of calibers, including 9mm Parabellum, .32 ACP or .380 ACP versions. Over the course of some 25 years, Astra produced over 170 thousand of these weapons. The weapon originally entered production in 1922 in its 9mm Parabellum variant, in order to fill a contract with the Spanish Prison Service to provide their standard sidearm. The following year, Astra began producing it in .32 ACP and .380 ACP calibers for commercial sale. Five years later, in 1928, the weapon was adopted by the Spanish Navy as their standard sidearm. During World War Two, the German Luftewaffe purchased over 80,000 Astra 300's as a standard sidearm for their pilots, accounting for nearly half of the weapons sales between 1922 and 1947, when production ceased.

Weapon	Model 300				
Manufacturer	Astra-Unceta y Cia		Year	1922-1947	
Nation	Spain				
Caliber	9mm Parabellum, .380 ACP, or .32 ACP.		Mags	7	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.56 kg	ROF	SS	40
	Loaded	0.64 kg		MB	
Length	165 mm			Burst	
Range	Effect.	65 m		Auto	
	Max.			Cyclic	
Notes					

ASTRA 300

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Astra Model 300	HND	0	P	M,O	9mm P	0	7	2 [SS]	ST	65 m	0.56	0.64	$250
Astra Model 300	HND	0	P	M,O	.380 ACP	0	7	2 [SS]	ST	65 m	0.56	0.64	$250
Astra Model 300	HND	0	P	M,O	.32 ACP	0	7	2 [SS]	ST	65 m	0.56	0.64	$250
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Astra Model 300	2d6	20	ballistic	20	SA	7	Sm	1 lb	13	Lic (+1)
Special Rules										

ASTRA 400

Weapon	Model 400				
Manufacturer	Astra-Unceta y Cia		Year	1921-1946	
Nation	Spain				
Caliber	9mm, up to 23mm long		Mags	8	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.14 kg	ROF	SS	40
	Loaded	1.22 kg		MB	
Length	225 mm			Burst	
Range	Effect.	65 m		Auto	
	Max.			Cyclic	
Notes					

The Astra Model 400 was produced by the Societa Unceta and Compania (now known as Astra-Unceta y Cia), located in Guernica, Spain. The Spanish military adopted the pistol in 1921, leading to the weapon being widely exported. Sales even reached into Nazi Germany, which bought the pistol for their own army. With the outbreak of World War Two, German troops encountered problems when using their 9mm Luger ammunition in the 9mm Astra Model 400. The German military's demanded changes lead to the Astra Model 600 being released in 1943, so that the Germans had a weapon that used their Luger ammunition without difficulty. This model also saw widespread export. A more compact version, the Model 300, was made to use .32 ACP or .380 ACP ammunition as well. In the end, the Model 400 and its variants ceased production in 1946, when the Star Modelo A replaced the Astra Model 400 as the Spanish Army's standard sidearm.

The Astra Model 400 has a rather interesting history, its sales to Germany aside. During the Spanish Civil War (1936-1939) both sides utilized the Astra Model 400. Realizing that the Astra factory would not be able to keep up with demand, the Republican government authorized two additional factories to produce Model 400 pistols. The Tarrasa arsenal produced approximately 8,000 pistols under the name F. Ascaso and a private firm in Valencia produced approximately 15,000 pistols under the name Republica Española. Both of these variants can be identified by their different crest atop the slide and distinctive grip panels; F. Ascaso grips marked F. Ascaso, and Republica Española grips marked RE. In addition, the Nationalist army captured one of Astra's factories, using the facility to produce their own Model 400 pistols. This same factory produced Model 900 pistols right up until the day it was captured.

The Model 400 is a blowback operated, hammer fired, single action semiautomatic pistol. The recoil spring is located around the barrel. The gun featured no manual safeties. One automatic safety is located at the rear of the grip and locks sear when gun does not gripped by the shooter properly. The other, internal safety, disconnects the trigger bar from the sear when slide does not close completely. The slide stop is located at the left side of the frame. Thanks to the long barrel and heavy weight, the gun was comfortable to fire and showed good acuuracy despite the fact that the blowback operated action is often assumed to be unsuitable for full-powered ammunition such as 9mm Largo or 9mm Luger.

The Astra Model 400 was a potent weapon due to the versatility it had in accepting ammunition. It was chambered primary for 9mm Largo (9x23mm Bergmann-Bayard) cartridge but chamber and magazine dimensions allowed to load and fire other 9mm cartridges, such as 9x23mm Steyr, 9x20mm Browning Long, 9x19mm Luger/Parabellum, offering almost unprecendent versatility. Using cartirdges shorter than the Largo results in only the extractor holding the round in place when it fires. While the weapon can properly chamber all these 9mm rounds, the regular use of cartridges shorter than 23mm results in wear, deformation and eventual breakage of the extractor and scores the chamber walls, resulting in poor accuracy and the eventual inability to properly chamber, fire, and extract the correct sized rounds. Additionally, The weapon's metallurgy cannot handle the forces gereated by the .380 Super or 9mm x 23mm Winchester cartridges. Persistent use of these cartridges can result in a ruptured chamber, fractured slide or fractured frame, all of which destroy the weapon and risk causing damage to the shooter.

ASTRA 400

Cyberthriller													
Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Astra Model 400	HND	0	J	M,O	9mm*	0	8	2 [SS]	ST	65 m	1.14	1.22	$400
Special Rules	The weapon can use any 9mm ammunition provided the cartridges are no longer than 23mm in length, This includes 9mm Makarov, 9mm Parabellum, 9mm Steyr, 9mm Largo, and a wide range of other 9mm and .38/.380 rounds.												

D20 Modern										
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Astra Model 400	2d6	20	ballistic	20	SA	8	Md	3 lb	14	Lic (+1)
Special Rules										

ASTRA MODEL 600

The Model 600 was developed in 1943 as an answer to Nazi complaints about their 9mm Luger munitions jamming up in the Astra Model 400 pistols. The Model 600 was simply a slight modification to the magazines and chamber to fit only the 9 x 19 mm Luger or Parabellum ammunition, though on could assume it would also work with shorter rounds like the 9 x 17mm Browning Short, much as the Astra 400 could chamber and fire shorter rounds. The pistol was manufactured in an Astra factory in German-occupied France. The company manufactured a total of 28,000 weapons, of which 10,450 were delivered to the German army before the factory was captured by Allied forces. The remainder of the production run was seized by the Spanish Army, and sold off to various governments, putting the weapons in the hands of the Portuguese Navy, Chilean Air Force, and the militaries of Turkey and Jordan. Astra never resumed production of the Astra 600.

Weapon	Model 600				
Manufacturer	Astra-Unceta y Cia		Year	1943-1944	
Nation	Spain				
Caliber	9mm Parabellum		Mags	8	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.08 kg	ROF	SS	40
	Loaded	1.16 kg		MB	
Length	205 mm			Burst	
Range	Effect.	65 m		Auto	
	Max.			Cyclic	
Notes					

ASTRA MODEL 600

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Astra Model 600	HND	0	J	M,O	9mm	0	8	2 [SS]	ST	65 m	1.08	1.16	$700
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Astra Model 600	2d6	20	ballistic	20	SA	8	Md	2 lb	14	Lic (+1)
Special Rules										

ASTRA MODEL 900

Weapon	Model 900				
Manufacturer	Astra-Unceta y Cia		Year	1928-1937	
Nation	Spain				
Caliber	7.62 x 25mm Mauser		Mags	10	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.41 kg	ROF	SS	40
	Loaded	1.53 kg		MB	-
Length	298 mm, 648mm w/ stock			Burst	4
Range	Effect.	85 m		Auto	200
	Max.			Cyclic	500, 350
Notes					

During the latter portion of the 1920's, a number of Spanish gun manufacturers noticed the high demand in China for the Mauser Model 1896 "Broomhandle" semiautomatic pistol. During this timew, German armaments manufacturers were under the strict control of the Treaty of Versailles, which prevented the export of what was considered a military handgun. Many of Mauser's foreign competitors took advantage of this problem throughout the 1920's. Astra's response to the situation was to develop the Model 900. Externally, the weapon is nearly identical to the Mauser Model 1896, but internally, the gun uses completely different mechanisms to avoid production problems. As with the Mausers, the Model 900 also could be fitted with a shoulder stock, effectively turning the pistol into a short-barrelled carbine rifle. The weapon and its minor variants (Models 901, 902, and 903) were in production from 1928 to 1937, when the factory producing the Model 900 was captured by nationalist forces in the midst of the Spanish Civil War, which then used the factory to produce Model 400 pistols for their arsenal.. Of some 35,000 weapons produced, 30,000 were exported to China. During World War Two, another 3,000 were sold to the German military between 1940 and 1943. 1944 saw a change in gun laws in Spain, preventing private gun firms from manufacturing any weapons capable of firing in full automatic mode. Astra exported off the remainder of their Model 900 pistols in a trickle of sales that lasted until 1955, a full 18 years after the weapon ceased production.

The Model 901 was identical to the Astra 900, aside from a minor modification that made the weapon a fully automatic machine pistol. The Model 902 was a modification to use a 20 round magazine. The Model 903 was the final model, able to use both magazines, and available in 7.62mm Mauser, 9mm Parabellum, 9mm Bergmann, and .38 Super calibers. For the Spanish Civil Guard, they also produced the Model 904, which had a cadence retarder to reduce the cyclic rate of fire to 350 rounds per minute. The model 904 was also designated as the Model 903F. All Model 900 components were fully interchangeable, meaning that with a simple swap of parts, a Model 900 could become a Model 904.

ASTRA MODEL 900

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Astra Model 900	HND	0	J	C,O	7.63 Mau	0	10	3 [SS]	ST	85 m	1.41	1.53	$400
Astra Model 901	HND	0	J	C,O	7.63 Mau	0	10	3 [SS], 10 [A], 25 [C]	ST	85 m	1.41	1.53	$475
Astra Model 902	HND	0	J	C,O	7.63 Mau	0	20	3 [SS], 10 [A], 25 [C]	ST	85 m	1.41	1.61	$500
Astra Model 903	HND	0	J	C,O	7.63 Mau	0	10, 20	3 [SS], 10 [A], 25 [C]	ST	85 m	1.41	1.61	$550
Astra Model 904	HND	0	J	C,O	7.63 Mau	0	10, 20	3 [SS], 10 [A], 17 [C]	ST	85 m	1.41	1.61	$750
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Astra Model 900	2d4	20	ballistic	30	SA	10	Lg	3 lb	14	Lic (+1)
Astra Model 901	2d4	20	ballistic	30	SA, A	10	Lg	3 lb	15	Res (+2)
Astra Model 902	2d4	20	ballistic	30	SA, A	20	Lg	3 lb	15	Res (+2)
Astra Model 903	2d4	20	ballistic	30	SA, A	10, 20	Lg	3 lb	15	Res (+2)
Astra Model 904	2d4	20	ballistic	30	SA, A	10, 20	Lg	3 lb	16	Res (+2)
Special Rules										

BUSHMAN IDW

The Bushman IDW (Individual Defense Weapon) was an innovative new SMG design meant to be cheap and easy to manufacture. The weapon is made entirely from stamped steel parts. The most innovative feature what the mechanical regulator that could be adjusted with a simple switch, allowing the weapon's rate of fire to be adjusted anywhere within the range of 100 to 1400 rounds per minute. The default setting, as set in the factory is 450 rounds per minute. The idea behind the IDW was to produce a weapon with a rate of fire that matched the "natural frequency" of the weapon, thereby eliminating the effects of recoil and producing an SMG that can even be accurately fired one-handed. People who have fired the weapon say that when fired on full-auto, the weapon does not jump in the hand, but rather raocks slightly from side to side. The weapon was designed as an early example of the Personal Defense Weapon concept, with the goal to sell it to the British military as a personal weapon for non-frontline troops as well as combatants in positions outside the infantry (anyone from vehicle and artillery crews to cooks).

Weapon	IDW (Individual Defense Weapon)				
Manufacturer	Bushman LTD.		Year	1990-1994	
Nation	United Kingdom				
Caliber	9mm Parabellum, 10mm Colt or .41 AE		Mags	20, 28, 32	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	3.2 kg	ROF	SS	40
	Loaded	3.9 kg		MB	-
Length	276mm w 82.5mm barrel			Burst	4
Range	Effect.	170 m		Auto	100
	Max.			Cyclic	450
Notes	Cyclic rate of fire adjustable from 100 to 1400 rounds per minute.				

Unfortunately, Bushman LTD couldn't fund mass production for the weapon, fell into bankruptcy, and the design was eventually sold to Parker & Hale, who butchered it. The prototypes were developed with three barrel lengths (82.5mm, 152mm, and 254mm) and three calibers (9mm Parabellum, 10mm Colt, and .41 AE). Magazines for these prototypes were manufactured in 20, 28, and 32 round capacities.

BUSHMAN IDW

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Bushman IDW/82.5	SMG	+2	J	E,O	9mm P	0	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.2	3.9	$480
Bushman IDW/82.5	SMG	+2	J	E,O	10mm C	0	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.2	3.9	$480
Bushman IDW/82.5	SMG	+2	J	E,O	.41 AE	0	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.2	4.0	$480
Bushman IDW/152	SMG	+3	T	E,O	9mm P	-1	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.4	4.1	$520
Bushman IDW/152	SMG	+3	T	E,O	10mm C	-1	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.4	4.1	$520
Bushman IDW/152	SMG	+3	T	E,O	.41 AE	-1	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.4	4.2	$520
Bushman IDW/254	SMG	+4	T	E,O	9mm P	-3	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.7	4.4	$540
Bushman IDW/254	SMG	+4	T	E,O	10mm C	-3	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.7	4.4	$540
Bushman IDW/254	SMG	+4	T	E,O	.41 AE	-3	20, 28, 32	2 [SS], 4 [AB], 5 [A], 5-70/22 [C]	RE	170	3.7	4.5	$540
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Bushman IDW/82.5 9mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Sm	8 lb	15	Mil (+3)
Bushman IDW/82.5 10mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Sm	8 lb	15	Mil (+3)
Bushman IDW/82.5 .41	2d8	20	ballistic	55	SA, B, A	20, 28, 32	Sm	8 lb	15	Mil (+3)
Bushman IDW/152 9mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Md	8 lb	15	Mil (+3)
Bushman IDW/152 10mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Md	8 lb	15	Mil (+3)
Bushman IDW/152 .41	2d8	20	ballistic	55	SA, B, A	20, 28, 32	Md	8 lb	15	Mil (+3)
Bushman IDW/254 9mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Md	9 lb	15	Mil (+3)
Bushman IDW/254 10mm	2d6	20	ballistic	55	SA, B, A	20, 28, 32	Md	9 lb	15	Mil (+3)
Bushman IDW/254 .41	2d8	20	ballistic	55	SA, B, A	20, 28, 32	Md	9 lb	15	Mil (+3)
Special Rules										

FN HERSTAL F2000

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 fulfill multiple tasks. With defense budgets around the world under intense pressure, multi-role weapons provide a cost effective solution.

The F2000 is a modular weapon system developed in a rapid cycle by FN Herstal of Belgium. They began marketing the weapon in 2001. The system consists of the F2000 rifle and its numerous add-on modules, which can be installed and removed quickly without the use of any tools. The design of both rifle and add-on modules pay great attention to the desire for ergonomics, balance, and the smooth lines of the weapon, while providing the accessories necessary to meet the present and future requirements of different types of units on a wide range of missions.

The rifle is a gas-operated, rotating bolt, select fire weapon, using a bullpup frame and polymer stock and completely ambidexterous controls. The weapon bears a unique ejection system, in which spent brass is sent from the rear of the gun along a special tube so that they may be efected near the muzzle, falling a safe distance from the user's face. As required of all NATO-compliant rifles and LMGs, the F2000 uses STANAG or M-16 magazines. It has standard mounting rails atop the weapon for scopes and a NATO-compliant mounting system just ahead of the magazine where additional modules may be mounted underbarrel. In standard configuration, the weapon is mounted with a 1.6X scope atop and a removable handguard below. The rifle itself already provisions sufficient internal space for a centralized power pack to provide power for the FCS and night vision sight. Incidentally, power is supplied from a standard 9-volt battery. The ergonomics of the weapon extend to address ambidexterity. The weapon's forward ejection system allows the weapon to be used left-handed with no modification, protecting left-handed shooters from cases, gas and debris. The safety, firing selector, magazine catch and other controls are also easily manipulated by a left-handed shooter.

The F2000 is available for immediate purchase in three configurations. The first configuration is the basic package. This includes the rifle, handguard, and 1.6x scope, which can be purchased for an economical $700. The second configuration includes the rifle, shotgun module, and nonlethal module, costing $1200 to $1900. The third configuration is the "full package". This includes the rifle, handguard and 1.6x scope of the basic package, but also includes a 4x day/night electronic scope, Shotgun Module, XM-303 Underbarrel Nonlethal Module, LG-41 40mm Grenade Launcher, and a spare handguard, at a projected price of only $3,000 to $5,000. There is also a shotgun module available, with pricing estimated between $500 and $1200, based on quantity purchased. They also make available a handguard with built-in laser designator, and another handguard with a built-in flashlight.

FN Herstal also has a product development schedule established. During 2003, they are expected to release a 3-round underbarrel grenade launcher. 2004 is expected to see a fire control system module similar to that of the OICW.The module will integrate a laser rangefinder to calculate the point of aim for both the rifle and grenade launcher, and set its sight reticle appropriately. Its functionality with the grenade launcher is impressive, the user sights the target, the FCS ranges it, then the user simply tilts the weapon's muzzle upward. When the correct degree of inclination is reached, two green lights illuminate on the rear of the FCS, indicating the weapon is properly reanged to fire. The FCS can store targeting data on up to 6 types of rounds and can be reprogrammed at any time to handle any round types of virtually any caliber of launched grenade if such alternate caliber grenade launcher become available. More importantly, the FCS is upgradable. While the version detailed above will be available by 2004, one future improvement for the FCS will be an electronic rate of fire control component. This will reduce the rate of fire automatically while increasing burst length as range increases. So

Weapon	F2000 LG-1				
Manufacturer	FN Herstal		Year	2000-	
Nation	Belgium				
Caliber	5.56 x 45 mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity	900m/s		Energy		
Weight	Empty	3.6 kg	ROF	SS	40
	Loaded	4.1 kg		MB	3
Length	694mm			Burst	-
Range	Effect.	500 m		Auto	400
	Max.			Cyclic	850
Notes	Cyclic rate of fire adjustable from 100 to 1400 rounds per minute. In 2004, a modified version should be available to handle an electronic regulator for the weapon's rate of fire and mechanical burst capacities. Weight is for the rifle alone with 1.6x scope and handguard.				

Weapon	LG-41 Grenade Launcher				
Manufacturer	FN Herstal		Year	2000-2003	
Nation	Belgium				
Caliber	40 x 46 mm Low Velocity Grenade		Mags	1	
Accuracy	Group			MOA	
	Kill				
Velocity	76 m/s		Energy		
Weight	Empty	1.0 kg	ROF	SS	1
	Loaded	1.25 kg		MB	-
Length	extends rifle to 727mm long			Burst	-
Range	Effect.	350 m		Auto	-
	Max.	400 m		Cyclic	-
Notes	Weights are for the grenade launcher alone. Effective direct fire range 150m, minimum safe range 10 m. The fully loaded weight with 30 round magazine, LG-41 with 1 round, and 4x sight is 6.2 kg.				

Weapon	XM-303 Nonlethal Module				
Manufacturer	FN Herstal		Year	2000-2003	
Nation	Belgium				
Caliber	.68 caliber projectiles		Mags	3	
Accuracy	Group			MOA	
	Kill				
Velocity	90 m/s		Energy		
Weight	Empty	1.5 kg	ROF	SS	40
	Loaded	1.8 kg		MB	-
Length				Burst	-
Range	Effect.	50 m		Auto	-
	Max.	100 m		Cyclic	-
Notes	Projectiles can be loaded with a glycol-based impact load, washable or indelible paint, OC powder, Illuminant, or a mixture of CS and OC powders. XM-303 also works as a stand-alone weapon as well as a rifle attachment.				

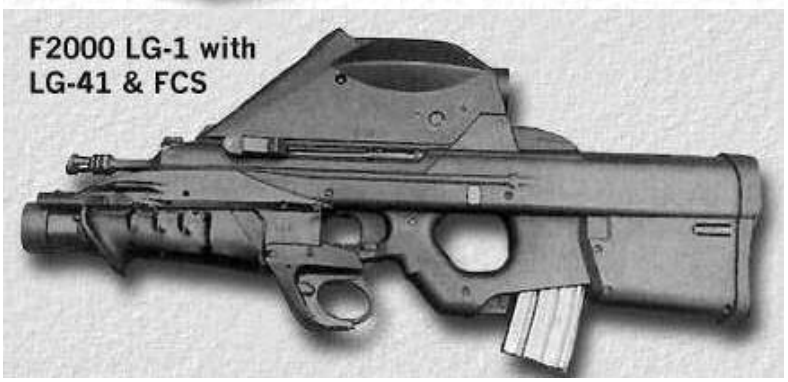
Weapon	F2000 Shotgun Module				
Manufacturer	FN Herstal		Year	2000-2003	
Nation	Belgium				
Caliber	12 Gauge		Mags	5	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty		ROF	SS	40
	Loaded			MB	-
Length				Burst	-
Range	Effect.	50m		Auto	-
	Max.	100m		Cyclic	-
Notes					

FN HERSTAL F2000

at 200 m, the weapon would fire a 3 round burst at 850 rpm, but at 600m, it may fire a 5-round burst at 300 rpm, thereby improving hit probabilities. This upgrade is expected by 2006. Finally, 2005 can expect a 20mm underbarrel module in an attempt to give the weapon the capacity to fire the same 20mm ammunition the OICW fires. This, along with necessary FCS upgrades to operate it properly, is expected during the course of 2005. Each accessory weapon manufactured for the F2000 includes a trigger assembly that extends beneath the rifle's trigger guard. By doing this, the shooter can use the accessory weapon by simply adjusting his grip to put his finger on the accessory's trigger, rather than having to release the rifle's grip and grasp another grip/trigger assembly forward on the gun.

Over the course of 2001, the F2000 was extensively reviewed by the US military as an alternative to both the M-4 Modular Weapon System and the Objective Individual Combat Weapon. The review either fell short or failed to be completed in time, as the OICW has been designated by the military as the XM-29 Selectable Assault Battle Rifle (XM-29 SABR). However, not all hope is lost. A fully outfitted F2000 weighs about 0.2 kg less than a fully outfitted XM-29. So looking at the bottom line, the F2000 offers a sleek level of efficient modularity the US military has desperately sought in what ended up being the hodge-podge of bulky parts in the M-16/M-4 Modular Weapon System. So even though the military has outfitted its forces with the M-4 and MWS relatively recently, it is taking a serious look at offering FN Herstal a gap-bridging contract to issue the F2000 to special forces rather than the M-4 MWS. FN's advantage is that is has a rifle ready to enter service now, rather than in the 2007-2010 timeframe of its competitors.


F2000 LG-1 with 4x sight and LG-41



FN HERSTAL F2000


F2000 LG-1 with
1.6x optic


F2000 LG-1 with
backup iron sights


F2000 LG-1 with
4x sight & XM-303

FN Herstal currently makes or plans to make the following additional upgrade components available for their F2000 weapon system:

F2000 FCS – This fire control module with laser rangefinder calculates the point of aim for both the rifle and grenade launcher, and sets the site reticle appropriately. Its functionality with the grenade launcher is impressive, the user sights the target, the FCS ranges it, then the user simply tilts the weapon's muzzle upward. When the correct degree of inclination is reached, two green lights illuminate on the rear of the FCS, indicating the weapon is properly reanged to fire. The FCS can store targeting data on up to 6 types of rounds and can be reprogrammed at any time to handle any round types of virtually any caliber of launched grenade if such alternate caliber grenade launcher become available. A future improvement in the FCS will be electronic ROF control, which will reduce the rate of fire automatically while increasing burst length as range increases. So at 200 m, the weapon would fire a 3 round burst at 850 rpm, but at 600m, it may fire a 5-round burst at 300 rpm, thereby improving hit probabilities. This electronic rifle control is expected to exist in F2000's made in 2004.

F2000 LG-41 40mm Grenade Launcher – Fires any of NATO's 40mm low velocity grenades (see M-79 Blooper in heavy weapons)

F2000 XM303 Non-Lethal Module – a three shot variant of FN Herstal's FN3030 Less Lethal Launcher, made specifically for the F2000.

F 2000 Shotgun Module – a 5-round, 12 ga. module.

F 2000 3-round Grenade Launcher – Available in 2003

F 2000 20mm Module – Expected to be available in 2005, this is an attempt to create a 20mm weapon that provides the functionality of the OICW's 20mm airburst cannon or compatibility with the OICW's munitions.

F2000 Laser Pointer – a handguard with a laser pointer built in.

F2000 Flashlight – a handguard with a mini-mag flashlight built in.

FN HERSTAL F2000

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
F2000 LG-1	AR	+3	T	M	5.56 N	0	30	2 [SS], 3 [B], 42 [C]	VR	500	3.6	4.1	$700
LG-41 Grenade Launcher	ACC	+2	T	M	40mm LV	0	1	1	VR	350	1.0	1.25	$900
XM-303	ACC	+2	J/T	M	.68 NL	0	3	1	RE	50	1.5	1.8	$500
F2000 Grenade Launcher	ACC	+2	T	M	40mm LV	0	3	1	ST	350			$1200
F2000 Shotgun Module	ACC	0	T	M	12 Ga.	0	5	1	VR	50			$500
F2000 20mm Weapon	ACC	+2	T	M	20mm ABM	0	1	1	ST	1000			$3000
Special Rules	Items with their names in italics are currently nonexistent and listed as a speculative endeavor. Want a fire control system? It will set you back $2,000.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
F2000 LG-1	2d8	20	ballistic	165	SA, A	30	Md	165	16	Mil (+3)
LG-41 Grenade Launcher	3d6, 10'r	-	slashing	115	SS	1	Md	115	17	Mil (+3)
XM-303	-			15	SA	3	Md	15	15	Mil (+3)
F2000 Grenade Launcher	3d6, 10'r	-	slashing	115	SA	3	Md	115	18	Mil (+3)
F2000 Shotgun Module	2d8		ballistic	15	SS	5	Md	15	15	Mil (+3)
F2000 20mm Weapon	3d6, 5' r	-	slashing	330	SA	1	Md	330	22	Mil (+3)
Special Rules	Items with their names in italics are currently nonexistent and listed as a speculative endeavor.									

FN HERSTAL P-90 PDW

Weapon	P-90 PDW (Personal Defense Weapon)				
Manufacturer	FN Herstal		Year	1990	
Nation	Belgium				
Caliber	5.7 x 28mm SS-190		Mags	50	
Accuracy	Group			MOA	
	Kill				
Velocity	711 m/s		Energy	514 J	
Weight	Empty	2.54 kg	ROF	SS	40
	Loaded	3.0 kg		MB	-
Length	500 mm			Burst	4
Range	Effect.	200 m		Auto	300
	Max.			Cyclic	900
Notes					

This weapon looks more like a weapon from a science-fiction movie than an authentic weapon. It looks so much so that it was eventually chosen to become the primary weapon of the SGC offworld exploration teams on the sci-fi show Stargate SG-1. The FN P90 submachine gun (SMG) was developed in the late 1980s as a defensive weapon for the troops whose primary activities does not include small arms - vehicle and tank crew members, artillery crews, truck drivers, mortuary teams, cooks, etc. Standard pistols and SMGs chambered for pistol rounds were proven to be increasingly ineffective against enemy soldiers wearing body armor, so FN Herstal developed a new round with enhanced penetration - the SS190. This round looks like scaled down 5.56mm NATO round and forces the pointed, steel core bullet to the 600-700 meters per second velocity range at the muzzle, thus being capable to defeat standart CRISAT helmets and armour vests at reasonable distances (50-100 meters).

According to comparison tests, the SS-190 could penetrate 48 layers of kevlar at 200 meters, while NATO 9mm ball ammunition can't penetrate 24 layers at 1 meter. There has been a lot of controversy surrounding the SS-190. Some independent tests show that the bullet tumbles through the air to an extent that at 100 meters, one round might pierce 48 layers of kevlar, but the very next round out of the same gun may tumble into a position where not only a single layer of kevlar is sufficient to deflect it, but the round fails to penetrate even the ballistic nylon outer shell common on many forms of body armor. Another comparison done by the military showed that an inexpensive .22 Magnum round, which can be bought at no more than 1/3 the price of an SS-190 round, provides quite similar effects when compared to the SS-190.

The P90 is a blowback operated, selective fire weapon. It is fed from 50-rounds box magazines, made from transluscent polymer. The magazine is being located above the barrel, with the cartridges being aligned at 90 degrees to the barrel axis. Each magazine has built-in ramp that rotates cartridge to align it with the barrel prior to chambering it. The P90 controls are completely ambidextrous, with charging handles located at the both sides of the weapon, and the safety/fire mode selector is located below the trigger. The P90 also features downward ejection of the spent cases. P90 is built in bull-pup configuration, with polymer stock, and features built-in reflex collimator sight with 1X magnification and reticle automaticaly adjustable to the light level, as well as a set of the backup open sights. P90 may be equipped with special silencer, that should be used with special, sub-sonic variant of the 5.7x28mm cartridge.

P90 may be referred as one of the forerunners of the PDW (Personal Defense Weapon) concept, that arose in last 4 or 5 years. Through the 1990's, the weapon was adopted by Saudi Arabia, Peruan Special Forces and some special units of Thailand army, and offered for export by FN.

FN HERSTAL P-90 PERSONAL DEFENSE WEAPON

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
P-90	SMG	+2	T	M	SS-190	+1	50	2 [SS], 4 [AB], 15 [A], 45 [C]	VR	200	2.54	3	$1,350
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
P-90	2d8	20	ballistic	65	SA,A	50	Md	6 lb	19	Mil (+3)
Special Rules										

GIAT PAPOP

Weapon	P-90 PDW (Personal Defense Weapon)				
Manufacturer	FN Herstal		Year	1990	
Nation	Belgium				
Caliber	5.7 x 28mm SS-190		Mags	50	
Accuracy	Group			MOA	
	Kill				
Velocity	711 m/s		Energy	514 J	
Weight	Empty	2.54 kg	ROF	SS	40
	Loaded	3.0 kg		MB	-
Length	500 mm			Burst	4
Range	Effect.	200 m		Auto	300
	Max.			Cyclic	900
Notes					

The Giat PAPOP (Poly Arme Poly Projectiles) is France's attempt at a next-generation assault weapon, competitor on the world arms market to both the ATK/HK XM29 SABR (OICW) and FN's F2000 LG-1. Based in Giat's FAMAS rifle, the PAPOP combines a 5.56mm rifle with an integrated 35mm grenade launcher. Scheduled to enter service by 2010, the weapon is still in development. Currently, it exists as a fully integrated dual weapon, unlike the XM29 which breaks down into three major components. The PAPOP is complete with an electronic fire control system and electrically driven ammunition feed (which suggests misfiring cartridges will be ejected properly by this system).

The PAPOP FCS (Fire Control System) is very much like the XM29 FCS. It provides a digitally superimposed reticle of the bullet's point of impact once the range is determined by the integrated laser rangefinder. It also provides feed connections to ouput the scope video to external viewers. The PAPOP has available two different viewers. One is a helmet visor system that will superimpose the scope's view into the soldier's field of sight. The second is a detachable small LCD screen that can be reoriented, allowing in either case the soldier to view around corners without excessively exposing himself. Both external viewers connect through the same cable and power ports. The FCS also provides nightvision support for nighttime operations.

The PAPOP grenade launcher currently is not an extensive improvement over the technology made available in the 60's with the M-203 underbarrel grenade lanucher. The PAPOP uses a three-round tube magazine and fires 0.25 kg 35mm low velocity grenades, out to a range of roughly 200 meters. By the time the rifle is fielded, the grenade launcher will use an internal magazine with a selector switch that will allow it to select which round will load and fire, if the soldier has mixed ammunition in the launcher. In any case, the magazine is internal, non-removable, and must be reloaded by hand. The grenades themselves are programmable to detonate with varying fragmentation patterns, resulting in a grenade that can have an incredibly short safe arming distance.

The 5.56mm rifle component of the PAPOP illustrates the long-standing reluctance of France to become totally compliant with NATO standards. First, the weapon uses a 40-round magazine which is a capacity not available with STANAG magazines. Second, it fires a saboted submunition which won't chamber in NATO weapons that fire the SS109 NATO 5.56mm Ball ammunition. These saboted munitions are a stage between the ammunition technologies of the 50's and 60's and the often-tried and failed technologies of flechettes. The sabotted rounds offer higher velocities and more level flight to provide better "raygun performance", to use a term often associated with flechettes. The rounds give the rifle an effective range of 600 meters or more.

Though this weapon is scheduled to go into service by 2010, one curious note must be made of the fact that no new information on the weapon has been released since early 2002. Even Giat has expunged not only all mention of the weapon from its website, but all appearances of it as well, including details about its use as part of France's FELIN program (FELIN is synonymous in goals to the US Army's Land Warrior program). This leads to speculation that the weapon's development program may have been terminated now that the F2000 is available for sale and the XM29 SABR appear to be rapidly approaching production status as well.

GIAT PAPOP

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Giat PAPOP Rifle	RIF	+2	T	M, E	5.56mm Saboted	0	40	3 [SS], 5 [AB], 25 [C]	RE	600	7 kg	8.3	$4,550
Giat PAPOP Grenade Launcher	ACC	+3	T	M,E	35mm LV Grenade	0	3	1 [SS]	RE	200m	-	-	-
Special Rules	Grenade launcher is an integrated portion of the PAPOP rifle												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Giat PAPOP Rifle	2d8	20	ballistic	200	SA,A	50	Md	6 lb	19	Mil (+3)
PAPOP Grenade Launcher	3d6, 10'r	-	slashing	115	SA	3	Md	-	-	-
Special Rules	Grenade launcher is an integrated portion of the PAPOP rifle.									

ILARCO 180

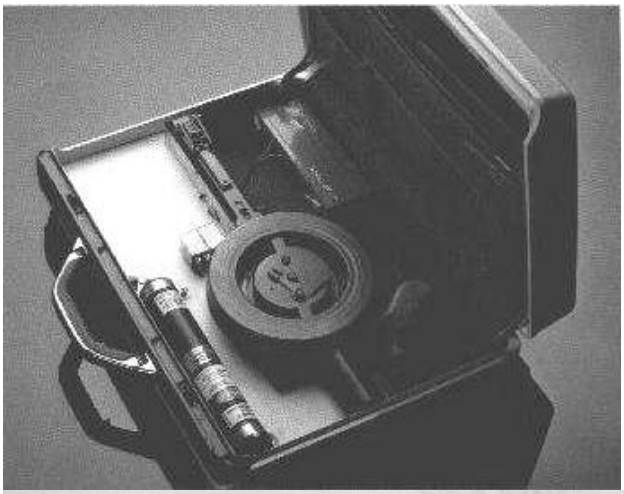
When American Arms International was shut down in 1986 by the ATF for fraudulently claiming weapons they had not yet manufactured, most gun enthusiasts thought that the American 180 would quietly fade into firearms history. However, 1987 saw the resurrection of the American 180 when it was purchased by Illinois Arms Company, Inc (ILARCO). ILARCO did some retooling of the weapon before unleashing it on the market once again as the ILARCO 180 Weapon System. The most important thing ILARCO did was address the magazine shortage that had been plaguing the American 180 for years. ILARCO developed a dual caliber lexan magazine that could hold 165 rounds of either .22 Long Rifle or .22 Short Magnum ammunition. The magazines are quite reliable compared to the older 177 round magazines, except for one technical problem that has no effect on performance; the lexan magazines tend to fail to feed the last one or two rounds of ammunition. Another important change was an unbreakable spring winding system, which can apparently be retrofitted into the older 170 round magazines. Within a few years, ILARCO also added lexan magazines with capacities of 220 and 275 rounds.

In addition, ILARCO also manufactured the Model 180-SC, another briefcase-mounted version of the American 180. The unit is almost identical to the old American Arms International version, aside from the addition of a tumbler lock that operates the safety, rather than linking it to the same button as the laser designator.

ILARCO eventually bankrupted too, selling the design to the current manufacturer, E & L Manufacturing, Inc. They currently provide service and parts on older American 180 versions and produce to custom order the American SAR 180/275.

Weapon	Model 180 Weapon System				
Manufacturer	Illinois Arms Co., Inc.		Year	1987-1995	
Nation	United States				
Caliber	.22 LR or .22 Short Mag.		Mags	165, 220, 275	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	3.4 kg	ROF	SS	40
	Loaded	5.5 kg		MB	-
Length	910 mm			Burst	5
Range	Effect.	200 m		Auto	500
	Max.			Cyclic	1800
Notes	The empty/loaded weights for the magazines are: 165 rounds - 0.45/1.25 kg, 220 rounds - 0.65/1.65 kg, 275 rounds - 0.8/2.1 kg.				

Weapon	Model 180-SC Briefcase Gun				
Manufacturer	American Arms Intl. Inc.		Year	1987-1995	
Nation	United States				
Caliber	.22 Long Rifle		Mags	165	
Accuracy	Group	15.25 cm		MOA	
	Kill				
Velocity	461 m/s		Energy		
Weight	Empty	2.72 kg	ROF	SS	40
	Loaded	4.32 kg		MB	-
Length	927 mm			Burst	20
Range	Effect.	75 m		Auto	500
	Max.			Cyclic	1800
Notes					



ILARCO 180

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
ILARCO AM-180 .22LR	SMG	+3	J	C,O	.22 LR	0	165, 220, 275	2 [SS], 20 [AB], 1500 [C]	ST	200	3.4	5.5	$1050
ILARCO AM-180 .22 Mag	SMG	+3	J	M, O	.22 SM	0	165, 220, 275	2 [SS], 20 [AB], 1800 [C]	RE	200	3.4	5.5	$1200
ILARCO Model 180-SC	SMG	-2	N	M, O	.22 SM	0	165, 220, 275	2 [SS], 20 [AB], 1800 [C]	RE	75	6.2	7.4	$4000
E&L Mfg. American SAR 180/275	RIF	+4	N	C	.22 SM	0	275	2 [SS]	RE	250	2.9		$995
Special Rules	Loaded weight based on using a 275 round magazine.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
ILARCO AM-180 .22LR	2d6	20	ballistic	65	SA, A	165, 220, 275	Lg	11 lb	18	Res (+2)
ILARCO AM-180 .22 Short Magnum	2d8	20	ballistic	65	SA, A	165, 220, 275	Lg	11 lb	18	Res (+2)
ILARCO AM-180 .22 LR Briefcase Gun	2d6	20	ballistic	20	SA, A	165	Lg	14 lb	23	Res (+2)
American SAR 180/275	2d8	20	ballistic	65	SA	275	Lg	11 lb	17	Lic (+1)
Special Rules	Loaded weight based on using a 275-round magazine.									

ILARCO 180 QUAD

Weapon	Model 180 Quad				
Manufacturer	Illinois Arms Co., Inc.		Year	1987-1995	
Nation	United States				
Caliber	.22 Short Magnum		Mags	165, 220, 275	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	24.1 kg	ROF	SS	40
	Loaded	32.5 kg		MB	-
Length	910 mm			Burst	5
Range	Effect.	200 m		Auto	500
	Max.			Cyclic	1800
Notes	Listed weight based on a pair of loaded 275-round magazines.				

With the 180 Twin in their hip pockets, ILARCO continued expanding the American 180 product line with the Model 180 Quad Squad Automatic Weapon. Yes, that's exactly right. Like the 180 Twin, the 180 Quad is a multibarrel weapon. This time, they built a special frame to hold the grip and trigger assembly, and coupled it to four receiver/barrel assemblies, each with its own magazine. As you can see from the illustration, the resulting weapon makes even a Browning M2HB look like a sleek and slender weapon. The weapon weighs in excess of 50 lbs when fully loaded, making one wonder how anyone at ILARCO could possibly have the nerve to designate it as a "Squad Automatic Weapon" when the weapon is so large and heavy that there are platoon-level heavy weapons half the weight it is.

The 180 Quad was originally designed to operate as a sentry weapon. The idea was to mount the weapon atop some fashion of remote servo mechanism, then mount a CCTV (Closed-Circuit TeleVision) camera on the gun, aligned with the barrels. The weapon then could be operated remotely from a guardpost or security station and used to eliminate anything from vermin to heavily armed and armored intruders. However, at that time, the project produced a security system to large and cumbersome to be deployed properly in most circumstances. This lead to later plans to redevelop the weapon for mounting on a wide variety of ground vehicles, marine craft, and even aircraft.

At one point, one of ILARCO's sales reps actually took a pair of these weapons and mounted them on a Falcon ultralight airplane, complete with electronic fire control and quick change fuselage hardpoints. The eight guns could be fired in any combination of one to eight guns, producing a weapon system that could either produce 88 seconds worth of sustained fire, or put 2200 rounds on target in under ten seconds. The weapon was a resounding success as it was used to destroy a number of bouys in the Atlantic Ocean, though it never made it past the point of prototype. The system was intended as a cheap ground support aircraft for third world nation, but ILARCO never managed to sell any of them. While this bright idea never floated with third world nations, it probably would have done well with the US Air Force as part of their predator armament program. Unfortunately, ILARCO went out of business before the military started arming Predators in 2001.

ILARCO 180 QUAD

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
ILARCO AM-180 Quad	SMG	+3	N	M,O	.22 SM	0	275x4	4 [SS], 40 [AB], 3600 [C]	ST	200	7.7	10.2	$17000
Special Rules	Loaded weight based on using a pair of 165 round magazines.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
ILARCO AM-180 Quad	2d8	20	ballistic	65	SA, A	275x4	Lg	72 lb	27	Mil (+3)
Special Rules	Loaded weight based on using a pair of 165 round magazines.									

ILARCO 180 TWIN

When ILARCO bought the designs to the American 180, They didn't simply end the magazine shortage and continue producing slightly refined versions of the American Arms International versions of the weapons. They also sought to develop a number of weapons that might be considered suitable for military use as well. Their first effort was the Model 180 Twin.

The 180 Twin is a double-barrelled version of the American 180. ILARCO took a pair of receiver and barrel assemblies and mounted them at a right angle to each other on a single weapon frame. With the pull of one trigger, the weapon fed and fired from two magazines, offering a frightening rate of fire of over 3,600 rounds per minute. While this weapon could pack a powerful punch, it's 17 lb unloaded weight combined with a very awkward design cumbersome volume left quite a bit to be desired as a military weapon. Another important factor in its unacceptable nature was the firing of both barrels simultaneously, effectively cutting the ammunition load in half. 330 rounds of ammunition doesn't go very far when you're firing two rounds at a time, even in semi-automatic mode.

Weapon	Model 180 Twin			
Manufacturer	Illinois Arms Co., Inc.		Year	1988-1995
Nation	United States			
Caliber	.22 Short Magnum		Mags	165, 220, 275
Accuracy	Group		MOA	
	Kill			
Velocity			Energy	
Weight	Empty	7.7 kg	ROF	SS 40-160
	Loaded	10.2 kg		MB -
Length	640 mm			Burst 20-60
Range	Effect.	200 m		Auto 500-2000
	Max.			Cyclic 1800-7200
Notes	Listed weight based on a pair of loaded 165-round magazines. Weight with loade 220-round magazines is 11 kg and weight with two loaded 275-round magazines is 11.9 kg.			

ILARCO 180 TWIN

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
ILARCO AM-180 Twin	SMG	+3	N	M,O	.22 SM	0	165x2	4 [SS], 40 [AB], 3600 [C]	ST	200	7.7	10.2	$8000
Special Rules	Loaded weight based on using a pair of 165 round magazines.												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
ILARCO AM-180 Twin	2d8	20	ballistic	65	SA, A	165x2	Lg	23 lb	25	Mil (+3)
Special Rules	Loaded weight based on using a pair of 165 round magazines.									

IM METAL HS 2000

Weapon	HS2000				
Manufacturer	IM Metals		Year	1999-	
Nation	Croatia				
Caliber	9x19mm Parabellum, .357 SIG, .40 S&W		Mags	15	
Accuracy	Group	26 cm		MOA	
	Kill				
Velocity			Energy		
Weight	Empty	0.65 kg	ROF	SS	40
	Loaded	0.91 kg		MB	-
Length	180 mm			Burst	-
Range	Effect.	110 m		Auto	-
	Max.			Cyclic	-
Notes					

The HS 2000 is manufactured by Croatia's IM Metal, first appearing on the market in 1999. Compared to some other weapons to be produced in the region after the collapse of the communist state of Yugoslavia, the gun is quite modern. It's modern features include a polymer frame, ambidexterous magazine release, high visibility sights, a "chamber loaded" indicator on the top of the slide behing the ejection port, a "cocked" indicator for the firing pin on the back of the slide, and redundant safeties. The four safety mechanisms incorporated into the weapon are a grip safety on the rear of the grip, a trigger safety, a drop-type firing pin safety, and an empty/missing magazine safety.

Reviews of the gun claim it is a very comfortable weapon to hold, reasonably reliable, and fairly accurate. The weapon can be best described as a cross between a SIG and a GLOCK, but manages to remain at a price point below either. The weapon proved to be very popular and rapidly became the #1 seller for IM Metal. However, the weapon is now illegal to commercially import into the United States. Springfield Arms bought the design and made a number of extreme changes to the design. The weapon is now manufactured in the United States as Springfield Arms' X-treme Duty Pistol product range, which will be detailed at a later date.

IM METAL HS 2000

Cyberthriller													
Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
HS 2000 9mm	HND	+2	J	C	9mm P	0	15	2 [SS]	RE	110	.68	.91	$259
HS 2000 .357 SiG	HND	+2	J	C	.357 SiG	0	15	2 [SS]	RE	110	.68	.91	$299
HS 2000 .40 S&W	HND	+2	J	C	.40 SW	0	15	2 [SS]	RE	110	.68	.91	$289
Special Rules													

D20 Modern										
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
HS 2000	2d6	20	ballistic	35	SA	15	Md	2 lb	13	Res(+2)
Special Rules										

IMI TAVOR TAR-21

As with virtually every nation in the 90's, Israel felt its arsenal of weapons was starting to age into obsolescence. To satisfy their changing needs in an assault rifle, they began developing the Tavor Assault Rifle for the 21st Century, the TAR-21 Tavor. The new bullpup rifle has been developed through close cooperation between Israel Military Industries and the Israeli Defense Forces. The original prototype, designated the M203, was not designed by actual weapons designers, but rather by a pair of civilian engineers. Amazingly, many of the features those civilians incorporated have remained in the final production model. And unlike most recent IMI weapons, the Tavor is a completely new design, rather than an upgrade of an existing weapon. This new rifle first appeared in public in 1998 and was heavily tested by the IDF between 1999 and 2002. As of 2003, the IDF has made no significant effort to issue the weapon as a replacement for their M-16A1, CAR-15s and Galils, but India has purchased about $20 million worth of the rifle and Croatia has obtained an unknown but small quantity of them.

The Tavor incorporates most of the mainstream developments of "advanced" assault rifles. It features a bullpup layout, polymer housing, optical sights as primary sighting equipment, and a reconfigurable modular design including a reconfiguable ejection port and charging hyandle to the left or right. Finally, it also incorporates an ambidexterous selector switch/safety above the pistol grip. Interestingly, the weapon has no reciever, instead housing its mechanisms inside a steel reinforced high impact polymer housing. All versions use STANAG compliant M-16 style magazines. The weapons are available in a number of finishes, including olive drab, black, and desert camouflage.

The rifle isn't without its flaws. As with all bullpup configuration assault rifles, the weapon doesn't lend itself to fast reloading and with the ejection port so close to the user's face, thew weapon doesn't lend itself to being used on both shoulders. The need to strip down the weapon to swap the ejection port to the opposite side of the weapon further exapnds this problem.

The Tavor is available in four military configurations. The base configuration is a standard assault rifle, the TAR-21 Tavor Assault Rifle. Along with the standard features of the rifle design, the weapon has a 460mm barrel and is issued with a two-part optics system consisting of an ITL MARS and an ITL Mini N/SEAS Night Vision Device, along with having emergency iron sights mounted on the MARS component, rather than the rifle itself. This model of the Tavor is the only one capable of mounting the M203 grenade launcher or other compatible underbarrel weapons, although a barrel adapter is required. One interesting feature is the on/off switch for the laser designator on the MARS. The switch is located on the foregrip of the rifle, rather than on the scope itself.

The CTAR-21 Compact Tavor Assault Rifle is the second variant of the weapon. This model doesn't differ significantly from the TAR-21 aside from the barrel being shortened to 380mm and an incompatibility with underbarrel accessories.

The third configuration is the MTAR-21 Micro Tavor Assault Rifle. Aimed at sales as a vehicle crew PDW and as a counter-terrorism/special forces assault SMG, the barrel was cut down to a stubby 250mm, forcing the entire housing to be redesigned to continue allowing two-handed use. The MTAR-21 is outfitted with the same sighting devices as the TAR-21.

Weapon	TAR-21 Tavor Assault Rifle				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.8 kg	ROF	SS	40
	Loaded	3.63 kg		MB	-
Length	720mm			Burst	3
Range	Effect.	600 m		Auto	200
	Max.			Cyclic	900
Notes					

Weapon	CTAR-21 Compact Tavor Assault Rifle				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.7 kg	ROF	SS	40
	Loaded	3.5 kg		MB	-
Length	640mm			Burst	3
Range	Effect.	500 m		Auto	200
	Max.			Cyclic	900
Notes					

Weapon	MTAR-21 Micro Tavor Assault Rifle				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.5 kg	ROF	SS	40
	Loaded	3.2 kg		MB	-
Length	480mm			Burst	3
Range	Effect.	400 m		Auto	200
	Max.			Cyclic	900
Notes					

Weapon	STAR-21 Sharpshooting Tavor Assault Rifle				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	3.45 kg	ROF	SS	40
	Loaded	4.25 kg		MB	-
Length	720mm			Burst	3
Range	Effect.	800 m		Auto	200
	Max.			Cyclic	900
Notes					

IMI TAVOR TAR-21

Last is the STAR-21 Sharpshooting Tavor Assault Rifle. This is a heavy-barreled TAR-21 outfitted with a Harris bipod and a Trijicon ACOG 4x32 Day Optic, the same configuration as the Israeli M16 Designated Marksman System. Compared to the system it replaces, the STAR-21 is a shorter, more comfortable weapon that offers a lower shooter profile.

The Tavor has one other variant available. It is a semi-automatic version designed for sales to law enforcement as a patrol car and urban area weapon. It has a slightly shortened 410mm barrel over that TAR-21 and is known as the TC-21 TAR-21 Carbine.

Along with these variants, the Tavor MTAR has spawned a line of weapons of its own, Called the TAVOR-2 rifle. It is a heavily modified version of the MTAR, with an entirely redesigned polymer housing. Unlike the original Tavor, this one has been designed with heavy input from the IDF Special Forces and is designed as a counter-terrorism weapon. The major change to the weapon is the ability to convert ir from a 5.56x45mm assault rifle to a 9mm or .40 caliber submachinegun, with the switch being easy and fast to perform. Other changes include dropping the grip handguard for a trigger guard, M1913 rails for mounting accessories, and improved safety systems. The scope rail is elevated above the rifle housing and the sights are replaced with a more affordable Meprolight reflex sight. This rifle too is available in more than one version. Primarily it is available in a regular version to which a suppressor can be attached, and as a Designated Marksman System, with a longer barrel, day optic, and Harris bipod. In its 5.56mm configuration, the weapon uses STANAG magazines, and in 9mm or .40 configuration, it uses 17 or 33 round magazines manufactured for various Glock firearms. While the Tavor-2 is still being tested by the IDF, IMI has made the effort to market the rifle to the U.S. Army as a temporary solution to meet the interim needs of the Army until the M-29 SABR is issued to the troops.

Weapon	Tavor-2				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO, 9mm Parabellum, .40 Smith & Wesson		Mags	30 (5.56mm) or 17, 33 (9mm, .40)	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.5 kg	ROF	SS	40
	Loaded	3.2 kg		MB	-
Length	720mm			Burst	-
Range	Effect.	350 m		Auto	100
	Max.			Cyclic	750
Notes					

Weapon	Tavor-2 Designated Marksman Rifle				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	3.45 kg	ROF	SS	40
	Loaded	4.25 kg		MB	-
Length	640mm			Burst	-
Range	Effect.	600 m		Auto	100
	Max.			Cyclic	750
Notes					

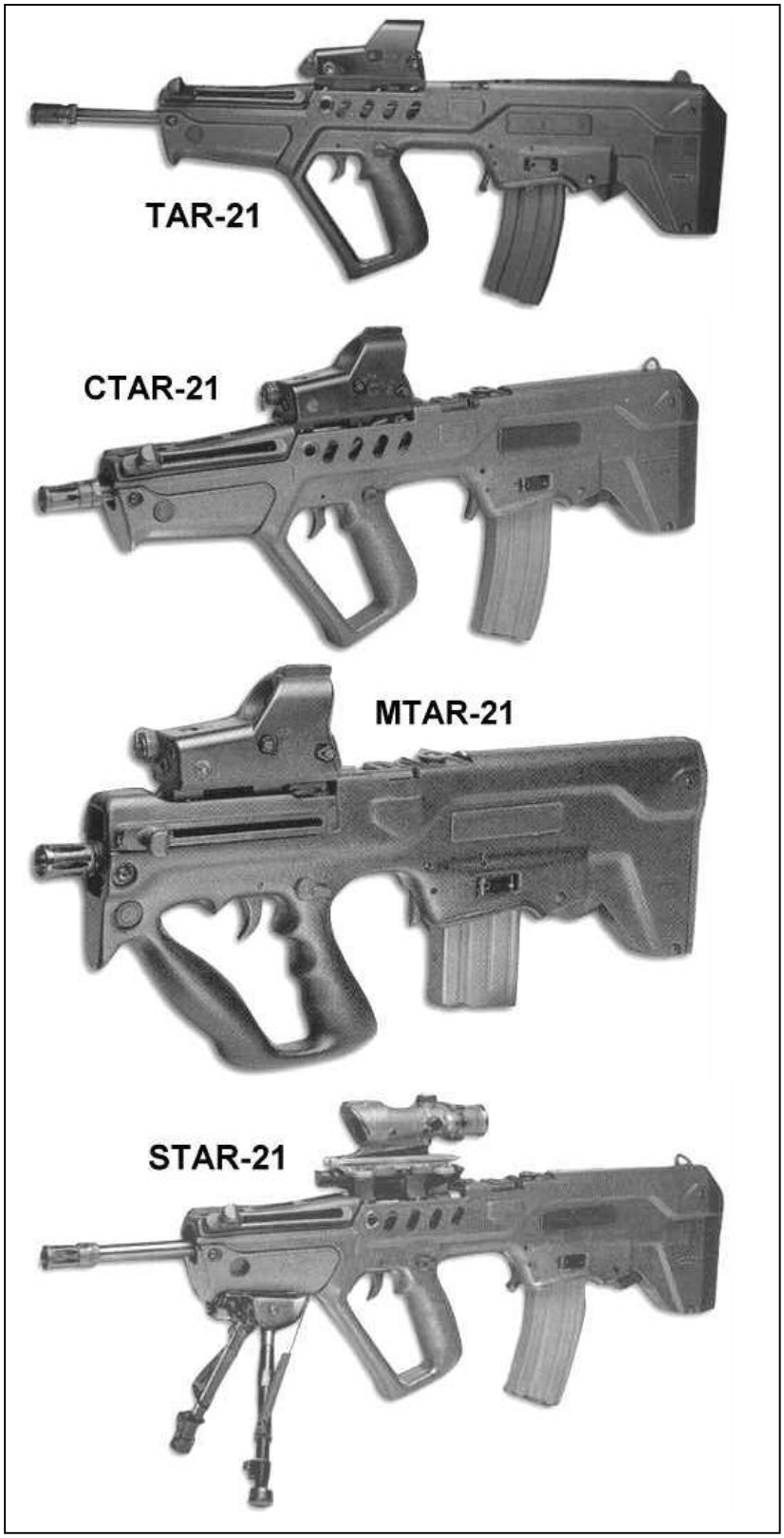
Weapon	Tavor OICW				
Manufacturer	Israeli Military Industries		Year	2002-	
Nation	Israel				
Caliber	5.56x45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	4 kg	ROF	SS	40
	Loaded	4.7 kg		MB	-
Length	480mm			Burst	3
Range	Effect.	600 m		Auto	200
	Max.			Cyclic	900
Notes					

The Tavor-2 isn't the end of product development. Just like the French, Russians, Belgians, British, Australians, and Americans, the Israelis are investing in a technologically advanced future weapon system centered on the Tavor assault rifle, even though the weapon hasn't formally replaced existing weapons in the IDF inventories. Both the French and Americans are developing advanced soldiering systems revolving around information technologies. In the United States, the program is the Force XXI Land Warrior program, and in France, they are developing a system called FELIN. The Israelis are following suit with a program called the IDF Land Forces Command Future Infantry Warrior Program. Unlike other advanced infantry weapon programs, the Tavor OICW isn't an integrated multiple weapon system. It is simply an assault rifle with an advanced combination scope and fire control system fully integrated with the rifle.

The Tavor OICW is a modified CTAR-21 Tavor mounting an advanced digital fire control system manufactured by Elbit. This fire control system integrates day sight, night optics, laser rangefinder and laser pointer functions. It connects to a fiber optic feed that runs from the FCS mount atop the weapon to a second connector on the bottom of the stock just forward of the buttplate. This second connector than connects to more fiber optic cable to connect the rifle to the digital infantry combat system, which eventually routes all data to the soldier's heads up display mounted on his helmet. Planned upgrades to the fire control system include GPS functionality, a miniature digital camera, and the ability to control the soldier's entire digital wardrobe, right down to digitial wireless video broadcasting.

To make the Tavor OICW a competitive weapon without resorting to the multi-weapon trend of the American M-29 SABR, Belgian F2000, French PAPOP and Australian AICW, IMI is working to develop new advanced lethality ammunition suitable for the rifle.

IMI TAVOR TAR-21



IMI TAVOR TAR-21

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
TAR-21 Tavor Assault Rifle	AR	+2	T	M	5.56 N	0	30	2 [SS], 10 [A], 45 [C]	ST	600	2.9	3.6	$1000
CTAR-21 Compact Tavor	AR	+2	T	M	5.56 N	0	30	2 [SS], 10 [A], 45 [C]	ST	500	2.8	3.5	$950
MTAR-21 Micro Tavor	SMG	+1	J	M	5.56 N	0	30	2 [SS], 10 [A], 45 [C]	ST	400	2.5	3.2	$900
STAR-21 Sharpshooting	RIF	+4	T	M	5.56 N	0	30	2 [SS], 10 [A], 45 [C]	ST	800	3.45	4.25	$1400
TC-21 Tavor Carbine	RIF	+2	T	M	5.56 N	0	30	2 [SS]	ST	500	2.8	3.5	$800
Tavor-2 5.56mm	SMG	+2	J	M	5.56 N	0	30	2 [SS], 10 [A], 37 [C]	ST	350	2.5	3.2	$1000
Tavor-2 9mm	SMG	+2	J	M	9mm P	0	30	2 [SS], 10 [A], 37 [C]	ST	350	2.5	3.2	$1000
Tavor-2 .40 S&W	SMG	+2	J	M	.40 SW	0	30	2 [SS], 10 [A], 37 [C]	ST	350	2.5	3.2	$1000
Tavor-2 Marksman System	RIF	+4	T	M	5.56 N	0	30	2 [SS], 10 [A], 37 [C]	ST	500	3.45	4.25	$1400
Tavor OICW	AR	+4	T	E	5.56 N	0	30	2 [SS], 10 [A], 45 [C]	ST	600	4	4.7	$5000
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
TAR-21 Tavor Assault Rifle	2d8	20	ballistic	200	SA, A	30	Sm	8 lb	18	Mil (+3)
CTAR-21 Compact Tavor	2d8	20	ballistic	165	SA, A	30	Sm	8 lb	17	Mil (+3)
MTAR-21 Micro Tavor	2d8	20	ballistic	135	SA, A	30	Sm	7 lb	17	Mil (+3)
STAR-21 Sharpshooting	2d8	20	ballistic	265	SA, A	30	Sm	9 lb	19	Mil (+3)
TC-21 Tavor Carbine	2d8	20	ballistic	165	SA, A	30	Sm	8 lb	17	Mil (+3)
Tavor-2 5.56mm	2d8	20	ballistic	115	SA, A	30	Lg	7 lb	18	Mil (+3)
Tavor-2 9mm	2d6	20	ballistic	115	SA, A	33	Lg	7 lb	18	Mil (+3)
Tavor-2 .40 S&W	2d6	20	ballistic	115	SA, A	17	Lg	7 lb	18	Mil (+3)
Tavor-2 Marksman System	2d8	20	ballistic	165	SA, A	30	Sm	9 lb	19	Mil (+3)
Tavor OICW	2d8	20	ballistic	200	SA, A	30	Sm	10 lb	20	Mil (+3)
Special Rules										

IZHMASH BIZON

Weapon	Bizon				
Manufacturer	IzhMash		Year	P2000	
Nation	Russia				
Caliber	9mm Makarov, 9mm Parabellum, 9mm Browning Short, or 7.72mm Tokarev.		Mags	64	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.1 kg	ROF	SS	40
	Loaded	2.47 kg		MB	-
Length	660 mm open, 425 mm folded			Burst	4
Range	Effect.	150 m		Auto	
	Max.			Cyclic	700
Notes					

The Bizon (Bison) SMG is a compact weapon designed for use by armed forces and police when firepower is needed in tight quarters. It is manufactured by IZHMASH JSC, just outside the Russian city of Izhevsk in the western Urals. It is based on the AK-100 series of assault rifles, sharing a 60% parts compatibility with that assault rifle. The trigger mechanism also shares compatibility with that of the AK74M.

The weapon's major innovation is the 64-round helical magazine. Unlike most magazines of this type, the Bizon mounts magazines below the gun, rather than using a gravity assisted feed. The magazines also have slots in the right side, marking the points where 4, 24, 44, and 64 rounds are still present in the magazine. Additionally, the magazines are quick and easy to reload; all round s are oriented nose forward, making it impossible to load incorrectly.

There are three models of the Bizon, each differing in the type of sights and stocks that they use. The Bizon-2 has a Kalashnikov-style sliding tangent type rear sight with markings for elevation at 50, 100 and 150 meters, along with an AK74M front sight. The Bizon-3 Features a pop-up dioptric rear peep sight with protective ears, combined with the front sight of an SVD. For all the Bizons, a number of modular muzzle devices are also available to allow the weapon to meet tactical mission requirements. This includes silencers, muzzle brakes, compensators, flash hiders, and more. The various folding stocks are all sturdily built and make for a very controllable weapon.

The weapon is primarily available chambered for the 9x18mm Makarov round and can use both the normal and high impulse variants of these munitions. A limited quantity have also been manufactured for 9mm Parabellum, 9mm Browning Short, and the 7.72x25mm Tokarev round.

Bizon-2

Bizon-3

IZHMASH BIZON

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Bizon Markarov	SMG	+2	T	M	9mm M	0	64	2 [SS], 4 [AB], 35 [C]	RE	150	2.1	2.47	$580
Bizon Parabellum	SMG	+2	T	M	9mm P	0	64	2 [SS], 4 [AB], 35 [C]	RE	150	2.1	2.47	$640
Bizon Browning	SMG	+2	T	M	9x17mm	0	64	2 [SS], 4 [AB], 35 [C]	RE	150	2.1	2.47	$620
Bizon Tokarev	SMG	+2	T	M	7.72mmP	0	64	2 [SS], 4 [AB], 35 [C]	RE	150	2.1	2.47	$600
Special Rules													

D20 Modern

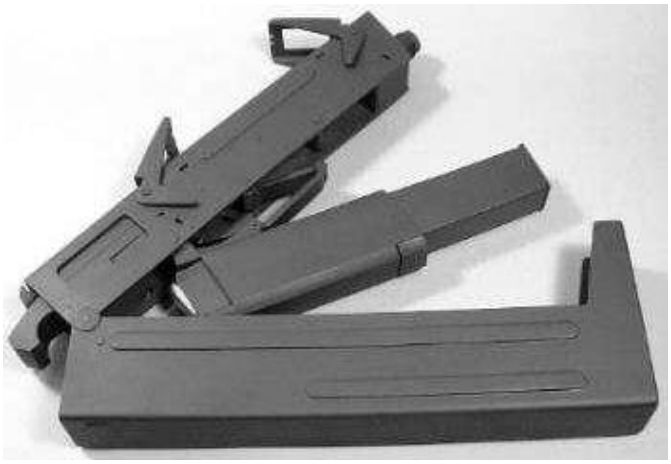
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Bizon	2d6	20	ballistic	50	SA, A	64	Md	5 lb	14	Mil (+3)
Special Rules										

KBP PP-90M FMG

Disappointed that the production of the Ares FMG ended long before you could obtain one? Have no fear, for the Russians know a useful weapon when they copy one! The PP-90 has been developed as a weapon for use by special police, undercover agents, bodyguards, and as a PDW for vehicle crews, in an effort to create a useful last-ditch, close-in combat weapon. The PP-90M is obviously based on the Ares FMG, folding in an almost identical manner to a box form slightly larger than the Ares and passing for a soviet-era field radio hand unit. The PP-90M adds a few improvements on the Ares, including crude flush folding iron sights and an optional suppressor and laser designator. However, these options destroy the disguisability; the Ares FMG was designed to potentially pass as a spare battery pack for a portable video camera. The PP-90M is chambered for 9x18mm Marakov ammuniton (and also compatible with 9x18mm Marakov High Impact ammunition and 9x17mm .380 ACP ammunition), and the PP-90M1 is chambered for 9x19mm Parabellum ammunition.

Weapon	PP-90M				
Manufacturer	KBP		Year	1995	
Nation	Russia				
Caliber	9mm Parabellum or 9mm Makarov, .380 ACP		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity	330 m/s		Energy		
Weight	Empty	1.83 kg	ROF	SS	40
	Loaded	2.23 kg		MB	-
Length	490mm unfolded, 270x90x32 folded			Burst	4
Range	Effect.	100 m		Auto	100
	Max.			Cyclic	700
Notes					

The PP-90M is a blowback-operated weapon that fires full auto only. There is no safety, either internal or external, although the weapon can only fire from its extended position. Crude iron sights are fitted but must be manually lifted into place by the firer. The weapon is mostly stamped steel, with sharp, unfinished edges. As a result, the PP-90M has a reputation of pinching the user's hands and being generally uncomfortable to fire.



KBP PP-90M FMG

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
PP-90M FMG	SMG	0	J	M	9mm M, .380	0	30	2 [SS], 4 [B], 35 [C]	ST	100 m	1.83	2.23	$700
PP-90M1 FMG	SMG	0	J	M	9mm P	0	30	2 [SS], 4 [B], 35 [C]	ST	100 m	1.83	2.23	$770
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
PP-90M FMG	2d6	20	ballistic	35	SA, A	30	Md	5 lb	16	Mil (+3)
PP-90M1 FMG	2d6	20	ballistic	35	SA, A	30	Md	5 lb	16	Mil (+3)
Special Rules										

KELTEC SUB-RIFLE

Weapon	Sub-2000				
Manufacturer	Kel-Tec CNC Industries, Inc.		Year	1995	
Nation	USA				
Caliber	9mm Parabellum or .40 Smith & Wesson		Mags	10	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	1.8 kg	ROF	SS	40
	Loaded	2.0 kg		MB	-
Length	762mm unfolded, 406x178 folded			Burst	4
Range	Effect.	150 m		Auto	100
	Max.			Cyclic	700
Notes	Aluminum-cased ammunition is known to cause malfunctions of this weapon.				

The Ares FMG provided the gun industry a single innovation that lead to some lame attempts to duplicate the "coolness" of that weapon. This weapon is an example of that lameness. The Sub-Rifle is a folding submachinegun produced by the upstart firearms company, Kel-Tec CNC Industries, Inc. The Sub-Rifle began as the Sub-9, a 9mm semi-automatic carbine that folded in half. The weapon managed to incorporate one particularly important facet of the PDW concept; it was a longarm compatible with sidarm magazines. The weapon was designed to be provided from the factory fully compatible with Glock 17 magazines, and capable of being custom ordered with compatibility with any single magazine of the purchaser's choice. The weapon was later revised to the Sub-2000 format. This weapon was heavily redesigned, making extensive use of polymers. Astonishingly, the end result is an inexpensive, unusually accurate weapon. While reviews claim the weapon is sturdy or durable, none subjected the weapon to heavy use. I don't know about you, but I question the durability of a firearm that has a frame made of an injection-molded frame made of a left and right half fastened by machine screws. Additionally, the weapon has no safety mechanisms aside from the lock that engages to keep the weapon from discharging while it is folded.

KELTEC SUB-RIFLE

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Sub-2000 9mm	RIF	+3	J	C	9mm P	0	10	2 [SS]	ST	300	1.8	2.0	$383
Sub-2000 .40	RIF	+3	J	C	.40 SW	0	10	2 [SS]	ST	300	1.8	2.0	$383
Sub-9	RIF	+2	J	C,O	9mm P	0	17	2 [SS]	ST	200	3.2	3.6	$425
Special Rules	If modified for fully automatic fire, the weapon has a cyclic rate of fire of 500 rounds per minute, or 25 [C]												

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Sub-2000	2d6	20	ballistic	100	SA	10	Lg	4 lb	13	Lic (+1)
Sub-9	2d6	20	ballistic	65	SA	17	Lg	7 lb	14	Lic (+1)
Special Rules	Can be modified to Rate of Fire A and is considered easily concealable when folded.									

KOLIBRI

Weapon	Kolibri				
Manufacturer	Franz Pfannl		Year	1914-1938	
Nation	Austria & Germany				
Caliber	3 x 12 mm Kolibri		Mags	5	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy	2.7 J	
Weight	Empty	0.2 kg	ROF	SS	40
	Loaded	0.22 kg		MB	
Length	762mm unfolded, 406x178 folded			Burst	
Range	Effect.	5 m		Auto	
	Max.			Cyclic	
Notes					

Between approximately 1870 and 1930, the firearms industry was heavily focused on the efforts of individuals, rather than mass production. In this era, hundreds of men made important advancements in firearms technology. One strange area of this advancement came in the field of what was known as miniature firearms. These are working firearms so small that they make derringers look like heavyweight monstrosities. The pistols were both handcrafted and mass produced from about 1895 to 1955.

One of the men famous for miniature pistols was FRanz Pfannl, an Austrian watchmaker who lived from 1867 to 1961. He manufactured weapons from 1897 to 1938. His most famous miniature gun was the Kolibri ("Hummingbird") pistol. The Kolibri was a smoothbore semi-automatic 2.7mm pistol, weighing in at 0.22 kilograms when loaded with a 5-round magazine. The weapon was advertised as a self-defense gun, as it actually did fire a projectile, though with a mere 2 foot-pounds of energy propelling the 3 grain bullet. He patented the gun in 1910 but didn't start manufacturing until 1914. In 1928, he also added a 3 mm version of the Kolibri to his product line, but only three known copies of this weapon were produced.

The Kolibri wasn't a gun of any substantial power, but it was a quality weapon and concealable like nothing else. Today, the weapon is a premium collector's item, with examples in good condition fetching well over $5,000 and the few 2.7mm and 3mm rounds sell at between $75 and $100 per round.

KOLIBRI

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Kolibri	HND	-4	P	E,O	3x12	0	5	1 [SS]	ST	10	.2	.22	$5,000
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Kolibri	1	20	ballistic	3	SA	5	Sm	1/2 lb	23	
Special Rules										

M-29 SABR

The recently designated XM-29 Selective Assault Battle Rifle (SABR) is a very new weapon that hasn't yet reached the production, but it has a lengthy history. The M-29 saw its start in the ashes of the US Army's Advanced Combat Rifle trials that spanned 1988 to 1992. The ACR trials aimed to procure for the Army an infantry assault weapon that was a 100% improvement in the kill factor of the M-16. There were an array of entries into this program, including the HK G11, Colt ACR, the AAI ACR, the Steyr-Mannlicher ACR, and the Ares FARC, to name only a few. Many of the weapons performed quite impressively, but none met the program's goals, though the Steyr rifle did come close with a kill increase of up to 80% depending upon the account you read.

From the ashes of the ACR program sprang the Small Arms Master Plan, which in turn lead to the Objective Weapons Program, which consisted of four joint serves arms to be selected at a future date to replace the entire US military small arms inventory. The sub-programs were the Objective Individual Combat Weapon to replace the M-16, M-4, M-203 and other assault rifle packages used by the military, the Objective Crew Served Weapon to replace the military's aging inventory of M2HB machine guns, Mk 19 Grenade Machine Guns, and other heavy projectile weapons in the arsenals, the Objective Personal Defense Weapon to arm vehicle crews and combat-ready non-infantry personnel, and the Objective Sidearm Weapon, a replacement for the Beretta pistols currently in service. As time passed, the OPDW and OSW portions of the program faultered. The OICW and OCSW programs reached a state of prototypes in field testing.

The OICW program drew in a number of competitors for the program, including ATK, AAI, H&K, and a smattering of others. As the program approached its prototype stage in 1994, only ATK, AAI, and H&K remained in competition to produce working proof-of-concept models of their firearms. In the end, a consortium formed between Alliant Tech Systems, Contraves Brasher Systems, Inc, Heckler & Koch GmbH, HK Inc, and Dynamit Nobel AG, producing the weapon that won the OICW trials. This consortium won an $8.5 million contract to further develop the weapon.

The M-29 is a gun of the future, designed to enhance and extend individual soldier battlespace, resulting in the need for fewer troops to perform the same missions.It is a man portable "super weapon", turning every soldier into a super soldier, capable of seeing in the dark, shooting around corners, and enabling every one to be a capable sniper. Sounds rather amazing, doesn't it? Additionally, the weapon system also allows for bonuses that weren't intentionally designated for the system, such as the capacity to function as an automated forward fire coordinator and allowing coordinated fire support amongst the troops in the same unit.

The M-29 was designed with use in rural and MOUT (Military Operations on Urban Terrain) environments in mind, allowing significant performance advantages over the current M-16 and M-4 systems. The 20mm weapon provides the same offensive capacity as the M203 grenade launcher, but with vastly superior ballistic accuracy and up to five times the range. The M-29, in its current format, weighs in at 14 lbs, a full 6 lbs lighter than an an M-4 equipped with the appropriate MWS components to allow it equivalent function to the M-29. Lastly, the latest projected price for the M-29 is $10,000 to $12,000 per unit, which is significantly less than a fully kitted M-16 with an M-203, thermal sights, laser pointer, range finder, and digital compass, which costs $35,000 per unit. The last major advantage of the prototype M-29 shows in simulated combat testing; a unit conducting a combat simulation with M-16s suffered 70 casualties in the completion of that mission. Another unit simulating the same combat mission with M-29s suffered one casualty in the completion of the mission.

Weapon	XM-29 Selective Assault Battle Rifle				
Manufacturer	ATK, HK, Basher		Year	1994-	
Nation	United States				
Caliber			Mags		
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	5.5 kg	ROF	SS	-
	Loaded	6.8 kg		MB	-
Length	890 mm			Burst	-
Range	Effect.			Auto	-
	Max.			Cyclic	-
Notes	Details of the assembled XM-29 SABR as of 2002. See below for performance details for its components. The 1999 prototype weighed 8.17 kg loaded, 6.87 kg empty. The 2005 model is expected to weigh in at 6.36 kg loade or less.				

Weapon	XM-8 Light Assault Rifle				
Manufacturer	Heckler & Koch		Year	1994-	
Nation	United States				
Caliber	5.56 x 45mm NATO		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity	991 m/s w M193, 948 m/s w SS109.		Energy		
Weight	Empty	2.7 kg	ROF	SS	40
	Loaded	3.1 kg		MB	2
Length				Burst	-
Range	Effect.	600m		Auto	300
	Max.			Cyclic	850
Notes					

Weapon	20mm High Explosive Weapon				
Manufacturer	ATK, HK, Basher		Year	1994-	
Nation	United States				
Caliber	20mm ABM		Mags	6	
Accuracy	Group			MOA	
	Kill	70% @300m, 50% @ 500m, 30% to 1km			
Velocity	930 m/s		Energy		
Weight	Empty	2.8 kg	ROF	SS	10
	Loaded	3.7 kg		MB	-
Length				Burst	-
Range	Effect.	1000m		Auto	-
	Max.			Cyclic	-
Notes	This weapon is useless without being connected to an XM-8 Lightweight Assault Rifle, which provides a trigger.				

Currently, the US Army has less than 100 units of the M-29 prototypes in active service as part of the weapon's development program. The weapon will go into at some point between 2007 and 2009, with the military contracting for some 45,000 M-29 systems to be deployed amongst the Army and Marine elite forces (rangers, airborne, force recon, etc), with four men out of a squad of nine carrying the M-29 rather than an M-4. Originally, the weapon was due to enter service in 2006, but development delays have pushed that back by up to several years.

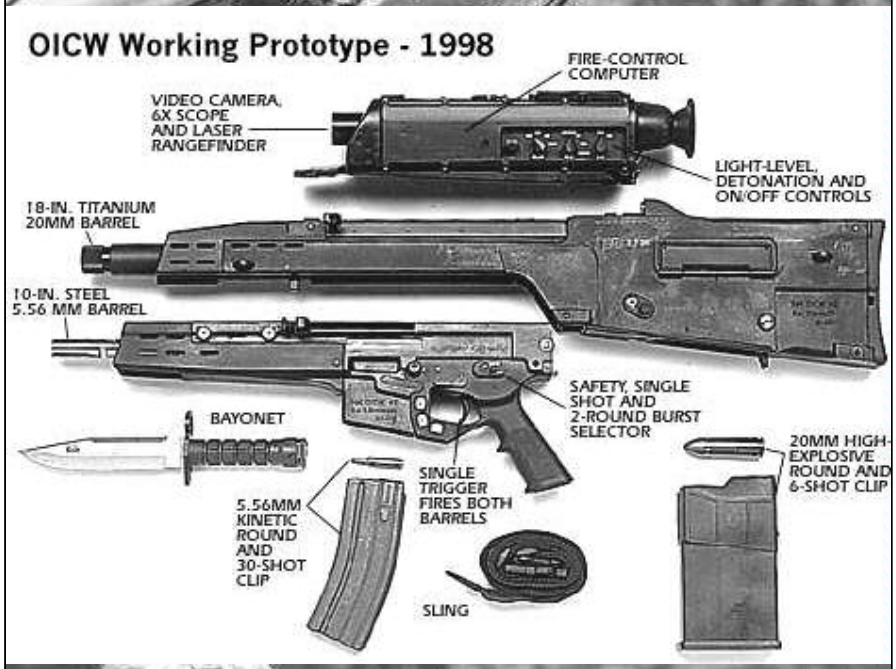
The M-29 is a multi-component weapon, consisting of the XM-8 Light Assault Rifle, an undesignated 20mm weapon, and an electronic fire control module. The top unit is the 20mm weapon, and the lower unit is the M-8 light assault rifle, derived from Heckler & Koch's G36 rifle. Quite literally, it is a G36 with an altered trigger guard/grip assembly and an adapter to allow it to use STANAG magazines. It fires the standard NATO 5.56x45mm SS109 ammunition, and is capable of semiautomatic fire, two round bursts and full automatic fire. The M-8 is to be typically issued with 30-round magazines and can be fitted with a bayonet, as well as any other underbarrel devices that can be mounted on a bayonet lug. The trigger of the M-8 interacts with the 20mm weapon, eliminating the need for a separate trigger assembly. This adds escape security for retreating troops; the 20mm component, the heaviest portion of the weapon, as well as its ammunition, can be ditched without fear of the enemy turning it on US troops.

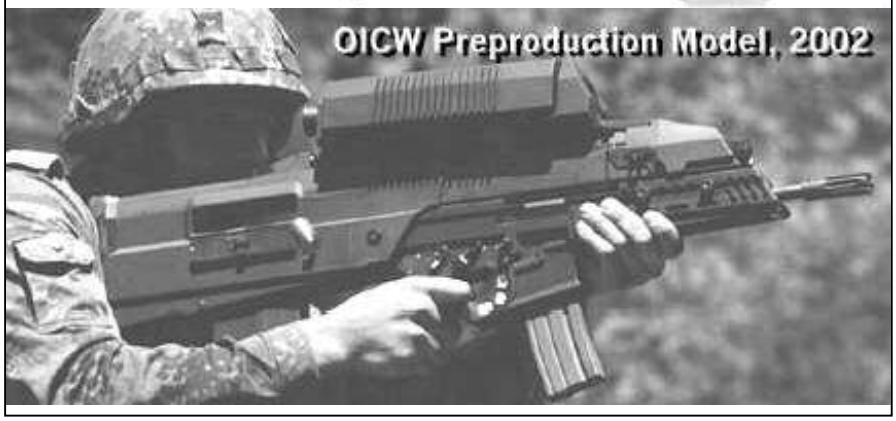
M-29 SABR

The 20mm weapon is currently still designated only as the High Explosive Weapon, rather than receiving a specific numeric designation as the entire system and the rifle component have. It is a semi-automatic weapon that fires 20 x 28 mm shells from a six round removable box magazine. These high explosive airburst munitions provide significant flexibility to the weapon thanks to smart fusing. The fuse is programmed by the weapon's fire control system just prior to firing, allowing for a wide range of capabilities. It can detonate in flight, throwing shrapnel at targets hiding behind an obstacle or in an earth depression like a ditch or crater. This in-flight detonation can also be used to detonate the round as it passes by a corner, effectively allowing it to throw shrapnel at targets hiding around the corner where the soldier cannot see. The fuses are capable of also being timed to detonate milliseconds after impact, allowing the round to detonate after penetrating thin armor. The fuse can also be 'safetied', instructed to arm a certain distance from the barrel, calculated by time in flight, turning the round into a normal kinetic energy round against targets too close to the soldier. All this astonishing capability will cost you a mere $30 per round currently, though in bulk, the price is expected to drop to as low as $19, a mere $5 more than a 40mm M433 HE round for the M203. In addition, the manufacturers are researching a number of additional payloads and technologies for the 20mm munitions, including nonlethal rounds and heat seeking projectiles.

The full-solution fire control system is a device in a constant state of evolution. It's original concept required that the FCS provide human and vehicle target identification capacity to a range of 1000 meters, accurate laser-based rangefinding, and a ballistic computer capable of presenting a proper digitally imposed aim point for the range, along with its most important feature of programming the electronic fuse of the 20mm shells. The current prototype weighs approximately 2.25 kg total, which includes the power pack which is actually stored seperately in the stock of the weapon. As electronic features are finalized, the development components should be replaced with optimized components, which will drive the FCS weight down significantly. It provides three visual display channels; day, night, and television. The day channel provides a high quality 3x magnification optical display with an 11 degree field of view. The television channel provides the same daylight display, but with a selection of electronic enhancements. These enhancements include 2x digital zoom, allowing 6x magnification in total, as well as laser steering and video tracking. The night channel is effectively the TV channel with always-on light amplification. The resolution is sufficient to allow identification of men at 500 meters and vehicles at 1000 meters.

Once the FCS met its requirements, its features began expanding. The unit has various operational modes allowing commanded built-in-test (BIT), boresighting, zeroing, compass calibration, maintenance and training. The FCS also employs a video tracker to detect moving targets and to perform scene tracking. The tracking function allows the motion of the target (for moving targets) and the motion of the weapon introduced by the user to be characterized separately. This functionality allows the optional laser steering system to compensate for the soldier's wobble





even for stationary targets. The laser steering system is steered to the target for moving targets identified by the video tracking system. The video tracking and laser steering systems are implemented in an integrated and automated way such that the soldier performs the same actions for both stationary and moving targets in all modes. Once the range to the target has been established, the FCS CPU computes a new adjusted aimpoint based on a full ballistic solution. The solution takes into account the cant angle, the site angle, the environment, the HE round characteristics, the barrel twist angle of the specific weapon being fired and any corrections established during the boresighting and zeroing processes. The ballistic algorithm also considers the parallax introduced by the FCS, corrects for the imperfect alignment of the display devices within the FCS and accounts for the fuze mode selected by the operator. Combined, the modal analysis and ballistic algorithms are executed in less than 100 milliseconds. Subsequently, the FCS generates a new red dot aimpoint and commands the turns count and mode to the fuze. The gunner places the red dot aimpoint onto the target and fires. In addition to improving the range measurement, the video tracking system provides cues to the soldier that improve his situational awareness. Up to four moving targets can be identified by the tracker at a time. Moving targets identified by the tracking system are indicated with an icon. The icon remains in the location where the target has gone to cover as an aid to the operator's ability to identify the current position of the targets.

The M-29 FCS is compatible with Land Warrior. This compatibility allows all of the electronic data presented in the FCS eyepiece to be displayed on Land Warrior's heads up display. This feature permits the M-29 weapon to be used by the soldier from a protected position. For example, a soldier can shoot the weapon around the corner of a building without full exposure, but with all of the advantages of the M-29 system. The knowledge of range and compass heading of the target also allows Land Warrior to identify the target's location so that indirect fire may be used against the target.

Although the M-29 FCS has been designed for a shouldered fired weapon for the individual soldier, the potential use of the resulting system extends beyond this application. The M-29 FCS is also the fire control system of the OCSW, part of a cost-reduction effort that results from weapons sharing compatible parts. Further efforts are being made to apply the FCS to a wide array of weapons, from the Mk19 40 mm Grenade Launcher and the M2 Heavy Barrel (HB) .50 Caliber Machine Gun, as well as 155mm Howitzers, 30mm cannons, and other vehicle weapon systems.

Increasing the range beyond 1000 meters requires a confirmation that both the laser configuration and the optical resolution are sufficient for the target of interest. Assuming a maximum range of 2000 meters and a vehicle target, the current laser configuration is more than sufficient for achieving this range even under harsh environments. The M-29 FCS optics have a 3x magnification which is adequate to support the detection of a kneeling soldier out to 1000 meters using both the day and TV channels. To be able to extend this capability to 2000 meters, the optical design needs to be modified to increase the magnification. This modification is only a minor rework of the optics using the same lens diameters and only changing the lens prescriptions. The change in magnification, however, does reduce the system's field of view. The changes of magnification and field of view are not necessary if vehicles are the primary targets of interest beyond 1000 meters.

With the technology developed under OICW, day/night imagery, laser ranging, a full ballistic fire control solution, an automatic red dot aimpoint, an automatic fuze setter, an increased probability of hit and the associated cost savings can be offered to the Mk19 40 mm Grenade Launcher, the M2 HB .50 Caliber Machine Gun and other similar systems. The FCS can be further enhanced to program a smart fuze for each of these systems,

M-29 SABR

when available. The Mk19 lends itself to be converted to an air bursting system. Further enhancements include, calculating lead angles based on the video tracking data and increasing the display resolution from VGA to SVGA to extend the range at which targets can be detected and recognized. For weapon systems mounted on a vehicle, the FCS could be enhanced for remote operation so that the video and tracker data, range, aimpoint, bearing, etc. are displayed within the vehicle. The accurate range and compass data provided by the FCS, combined with the Global Positioning System (GPS) of the vehicle, could also serve as a forward artillery observation post capable of transmitting range, bearing and other target data back to the field commander's post. The FCS can be applied to the 155 mm Howitzer system for self-protection while in the direct fire mode. The same technology can also be readily applied to medium caliber, rapid-fire systems for combat vehicles. If the FCS breaks in combat, both weapons possess flip up iron sights for more primitive use.

Along with the dveelopment of the OICW TA/FCS (Target Acquisition/Fire Control System) as a multi-purpose unit deployable to a wide range of weapon systems, Heckler & Koch has also been quietly working on a stand-alone version of the 20mm High Explosive Weapon. The 20mm gun is place into a shell with a fully integrated trigger assembly and fire control system. This system reduces the weapon's weight by roughly 2.5 kg.

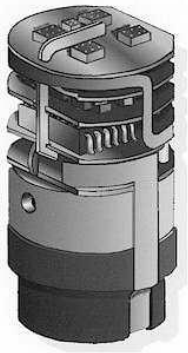
Between 1994 and 1996, several competitors participated in the trials to gain the contract for the OICW program. Heckler & Koch fielded a total of three different weapons for the competition. First was an over/under combination, with the 5.56mm KE weapon over the 20mm HE main weapon. The 20mm HE weapon was a bullpup configuration, the KE weapon a traditional assault rifle configuration. The weapon was rejected due to its use of a proprietary magazine for the 5.56mm rounds. The KE weapon loaded from the side, like many Sten SMGs, and the magazine hooked downward along the side of the weapon, making it awkward to reload. Their second entry was a bulky, fully integrated side-by-side 20mm/5.56mm combination weapon. Their third entry was developed after the consortium with ATK formed. This third OICW prototype was similar to the current M-29 system; a separate fire control system and stand-alone 20mm weapon, with an HK MP-7 PDW mounted as an underbarrel weapon for the 20mm cannon. AAI fielded a fully intregrated system as well. This was a 20mm weapon over a 5.56mm weapon. AAI's weapon was rejected due to the company's insistence in using flechette munitions. AAI had been pushing flechette technology since the 1950's and the Special Purpose Infantry Weapon program that lead to the M-16 being adopted by the US Army. While flechette technology offers significant potential for military application, 40 years of development up to that point had still failed to produce a flechette technology that would meet the military's goals. ATK was the final major participant in the OICW prototype trials, and they produced the winning design. ATK produced a system of three separate components; a rifle, to which attached the larger 20mm weapon, to which attached the fire control system. With the government obviously favoring this design, a consortium quickly formed between ATK and H&K, as well as two other companies to develop the FCS and munitions technologies.

1996 to 1999 saw a number of changes. Heckler & Koch, responsible for producing the weapon components, initially wanted to use its newly developed MP-7 Personal Defense Weapon as an underbarrel attachment to the stand-alone 20mm weapon. This concept was immediately rejected due to the proprietary munitions used in the MP-7. The US Army has no desire to add H&K's 4.6mm munitions to the inventory when there are tens of millions of rounds of 5.56mm NATO ammunition in inventory already. At this point, Heckler & Koch modified all components. The 20mm weapon lost its standalone functionality and the HK G36K was then heavily modified for use as the main control component. By 1998, the OICW design was essentially finalized, subjected only to design refinements over the next four years. The following year, 1999, saw the end of the Advanced Technology Demonstration Phase of development. This six year program completed on schedule with a prototype that fired over 7800 rounds of 5.56mm ammunition, 1400 20mm practice rounds, and 150 live 20mm HE rounds. August 2000 was the start of the PDRR (Program Definition Risk Reduction) Phase of development. This is a 4 1/2 year long phase in which weapon safety will be optimized, design changes will be made to meet soldier feedback requirements, weapon weight will be reduced, and overall costs will be reduced. 2002 saw the interim government milestone review for the weapon. The milestone review was successfully passed and the OICW received official designations; the XM-29 SABR (Selective Assault Battle Rifle) and XM-8 Light Assault Rifle. 2005 will introcude the EMD (Engineering and Manufacturing Development) Phase, in which the manufacturers begin tooling their facilities to mass produce the weapon. By 2007, the weapon will begin manufacture, and enter service in 2009.

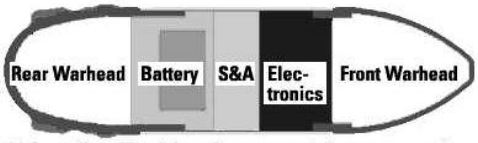
The current PDRR Phase XM-29 SABR weighs 14.96 lbs loaded, just shy of the 15 lb maximum weight allowed under Army guidelines. This includes 3 lbs of munitions, including the 30-round box magazine of 5.56mm ammunition and the 6-round box magazine of 20mm ammunition. The final EMD phase version of the weapon will have a weight threshold of 14 lbs and an objective goal weight of 10 lbs. This range of 10 to 14 lbs includes ammuntion weight, which will be include an increase to a payload of 8 20mm rounds.

M-29 SABR

Left to Right:
Airburst Munition (ABM)
High Explosive Munition (HEM)
Training Practice Round (TP)



Left: Airbursting Round
Right: Technical Illustration
of the Turn-In-Flight Fuse



Airbursting Munition Component Arrangement

The munitions for the M-29 SABR are still under development. The primary round is a high explosive fragmenting airburst munition. This munition uses very advanced smart fusing technology. The fuse has multiple modes of operation. These modes are: Airburst, MOUT Short Arm, Point Detonation, Point Detonation with Delay, Window and Self-Destruct. Airburst mode uses the fuse to arm the round at 25 meters and then detonate the round after the round has rotated a number of times specified by the distance at which the round is desired to detonate (this concept is known as turns in flight). This detonation reliably occurs within 0.5 meters of the target distance. Point Detonation mode (PD) is the default mode for the round. In this mode, the round arms at 25 meters and detonates on impact with any hard surface. Point Detonation with Delay (PDD) is an armor-piercing mode for the round. The round arms at 25 meters, then upon impact, a microsecond timer runs down and detonates the round. At closer ranges, this allows the round to penetrate several millimeters of armor as well as brick, concrete, wood and other wall construction materials so that it bursts on the other side. Window mode is a preset version of PDD mode, detonating the round a few milliseconds after it crashes through a window. MOUT Short Arm is a close combat mode that operates in conjunction with the other modes. Normally, the rounds arm at a distance of 25 meters after leaving the gun. MOUT short arm enables the user to specify arming ranges between 5 and 14 meters. The final mode is self-destruct mode, which allows the munitions ot be safely disposed of in combat as necessary. The Point Detonation mode is default mode as a forethough to account for the breakdown of the FCS or dead batteries.

While most of the attention has been focused on the revolutionary capabilities of the 20mm weapon and its airburst munitions, the Army has been working hard on a nonlethal 20mm munition for the weapon as well. Compared to the 9 years the OICW/SABR has been under development, the nonlethal munitions development has been lightning quick in comparison. The NL (Nonlethal) program was drafted in 2000, with legal review completion in 2001. Since then, the NL round had undergone prototype ballistic testing of an empty round in February 2002, and has undergone over a dozen chemical dispersion tests. The current prototype round is capable of dispersing chemical agents on target at a range of 250 meters, delivering 1.6 grams (approximately 5 cc) of bulk CS1 chemical agent with a 32% airborne yield. These prototype rounds, to be effective, require at least 3 rounds fired at the same target to disperse sufficient material to have reasonable effect. These current prototypes are considered deficient due to both payload and dispersion rates, due to the volume of the round consumed by the fuse. The final round, if the development is not programmed, will have a payload of 15cc (4.8 grams) of bulk CS1 with a 70% airborne yield, to a range of 5 to 500+ meters. These rounds will also have a 2 meter field of body injury by debris and an additional 3 meter field of eye injury by debris. The round will generate roughly 10 meter downwind cloud of CS gas with a concentration of 3.8+ mg per cubic meter at an altitiude of 1 to 5.5 meters. At ground level to 1 meter height, and 5.5 meters to 6.5 meters height, the cloud will have 3.0+ mg per cubic meter. The cloud will extend an addition 5 meters downwind, as well as an additional 1.5 meter in altitiude (total 8 meters) at a density of 1 mg+ per cubic meter.

HK Standalone 20mm Cannon

M-29 SABR

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
HK XM-8 Lightweight Assault Rifle	RIF	+2	J	M, E	M995	0	30	2 [SS] 0r [MB], 15 [A], 42 [C]	VR	600m	2.7	3.1	$1,000
XM-29 SABR 20mm Cannon	RIF	+6	N	M,E	M1018	0	6	1 [SS]	RE	200m	5.5	6.8	$12,000
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
HK XM-8 Lightweight Assault Rifle	2d8	20	ballistic	200	SA,A	30	Md	6 lb	18	Mil (+3)
XM-29 SABR 20mm Cannon	3d6, 5'r	-	slashing	330	SA	6	Lg	15 lb	26	Mil (+3)
Special Rules										

MGV-176

Weapon	American 180 M-2				
Manufacturer	American Arms Intl. Inc.		Year	1980-1986	
Nation	United States				
Caliber	.22 Long Rifle		Mags	177	
Accuracy	Group	15.25 cm		MOA	
	Kill				
Velocity			Energy		
Weight	Empty	2.95 kg	ROF	SS	40
	Loaded	4.55 kg		MB	-
Length	914 mm			Burst	20
Range	Effect.	200 m		Auto	500
	Max.			Cyclic	1500
Notes	selective fire version for law enforcement sales. A semi-automatic version is available as the American 180 M-1				

The original design to the American 180 was also retained by Voere through this entire chain of US ownerships, and they sold the design to a Slovenian firm in the mid-80's. The weapon once again appeared in 1989 as the MGV-176, used on a limited basis by a number of military units during the Balkan conflicts of the 90's.

The MGV-176 is identical to the American 180 in .22 Long Rifle caliber. The magazines have been slightly modified, holding 176 rounds, thereby eliminating the frequent failure to load the final round into the weapon with 177 round magazines. This weapon, being made in a country in the grips of turmoil and civil unrest, wasn't exactly the best of quality. The parts were of inferior materials and machining quality than those manufactured by Voere, and the resulting weapons were prone to even greater failure rates than the early American 180's.

The MGV-176 also saw a switch to the use of plastic magazines, just as the American version of the weapon did. While the magazines are inter-compatible between 165, 176, 177, 220, and 275 round capacity magazines on all American 180 derivatives, these Slovenian-made magazines aren't compatible with most American-180 magazine loaders, so anyone using the MGV-176 magazines will have to spend four to five minutes loading each MGV-176 magazine by hand. The company also manufactured a silencer for the weapon.

MGV-176

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
MGV-176	SMG	-1	T	C	.22 LR	0	176	2 [SS], 20 [AB], 1500 [C]	ST	200	2.88	4.48	$180
MGV-176 Suppressed	SMG	-2	T	C	.22 LR	0	176	2 [SS], 20 [AB], 1500 [C]	ST	140	3.07	4.74	$300
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
MGV-176	2d6	20	ballistic	65	SA, A	176	Lg	11 lb	12	Res (+2)
MGV-176 Suppressed	2d6	20	ballistic	45	SA, A	176	Lg	11 lb	13	Res (+2)
Special Rules										

OC-14 GROZA

The Groza (Russian for "thunder") is a relatively new assault weapon first put into service by the Russians in 1995. It is yet another weapon in the current trend to develop integrated small arms packages like the Giat PAPOP, M-29 SABR, and FN F2000 rifles. It was designed by the Central Design Bureau of Sporting and Hunting Weapons (CKIB SOO) and is manufactured By TOZ, the Tula Weapons Plant.

This weapon was initially designed for the Russian Internal Affairs Ministry special forces to meet their requirements for an assault rifle and grenade launcher package that can be reconfigured as required in the field. The rifle can be configured as:

- A short-barrelled carbine
- A normal assault rifle
- A silenced assault rifle
- An assault rifle/grenade launcher. When mounting the grenade launcher, the trigger guard and group of the rifle is removed and replaced with a new assembly that is attached to the grenade launcher. This new assembly provides one trigger for both weapons, and an extra selection on the selector switch to access the grenade launcher.

All components necessary for all four conversions come in a single kit.

This rifle uses special silent load SP-6 9 x 39mm ammunition. This ammunition is both silent and potent, having more muzzle energy than most other 9mm munitions. The rounds can pierce 2 mm of armor at 400 meters.

The rifle proved popular with other services and the OC-14 Groza-1 was also developed for the Army Spetznaz. The Groza-1 is revised to the soviet era M43 7.62 x 39mm round common in the eastern bloc. The weapon uses standard AK-47 family magazines, can mount an AK-47 bayonette, and shares 70% of its internal mechanics with the AKM assault rifle.

Weapon	OC-14 Groza				
Manufacturer			Year	1994	
Nation	Russia				
Caliber	9 x 39mm SP-6		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity	300 m/s		Energy		
Weight	Empty	3.2 kg	ROF	SS	40
	Loaded	3.6 kg		MB	-
Length	700 mm			Burst	2
Range	Effect.	200m		Auto	100
	Max.			Cyclic	750
Notes					

Weapon	OC-14 Groza-1				
Manufacturer			Year	1996	
Nation	Russia				
Caliber	7.62 x 39 mm or 9x39mm (PAB-9, SP-5 or SP-6)		Mags	30	
Accuracy	Group			MOA	
	Kill				
Velocity			Energy		
Weight	Empty	3.2 kg	ROF	SS	40
	Loaded	3.6 kg		MB	-
Length	700 mm			Burst	2
Range	Effect.	500m		Auto	100
	Max.			Cyclic	750


Groza Base Configuration


Groza SMG


Groza Assault Rifle & Grenade Launcher


Groza Carbine Assault

OC-14 GROZA

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
OC14 Assault Rifle SP-6	AR	+3	T	M	SP6	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	300	3.2 kg	3.6 kg	$900
OC14 Assault Carbine SP-6	AR	+2	T	M	SP6	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	200	3.2 kg	3.6 kg	$900
OC14 Silenced Rifle SP-6	AR	+2	T	M	SP6	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	200	3.2 kg	3.6 kg	$900
OC14 SMG SP-6	SMG	0	J	M	SP6	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	150	3.2 kg	3.6 kg	$900
OC14 Grenade Launcher	ACC	-2	T	M	35mmG	0	1	1/2 [SS]	RE	350	3.2 kg	3.6 kg	$900
OC14 Assault Rifle 7.62mm	AR	+3	T	M	7.62B	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	500	3.2 kg	3.6 kg	$900
OC14 Assault Carbine 7.62	AR	+2	T	M	7.62B	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	300	3.2 kg	3.6 kg	$900
OC14 Silenced Rifle 7.62mm	AR	+2	T	M	7.62B	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	300	3.2 kg	3.6 kg	$900
OC14 SMG 7.62mm	SMG	0	J	M	7.62B	0	30	2 [SS], 2 [AB], 5 [A], 37 [A]	RE	200	3.2 kg	3.6 kg	$900
Special Rules	$900 covers the cost of a full kit which can be configured into any of the above weapons as needed.												

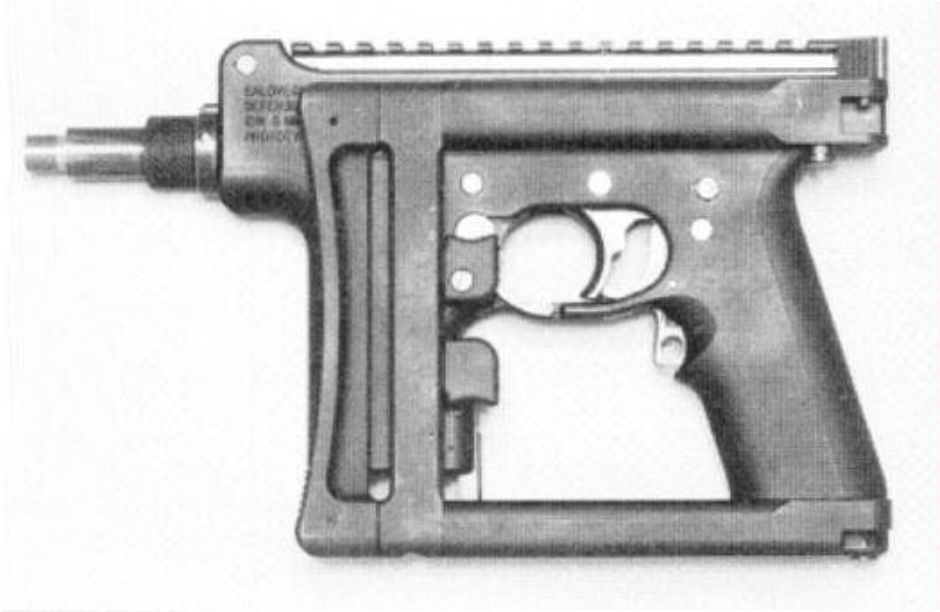
D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
OC14 Assault Rifle SP-6	2d10	20	ballistic	100	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 Assault Carbine SP-6	2d10	20	ballistic	65	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 Silenced Rifle SP-6	2d10	20	ballistic	65	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 SMG SP-6	2d10	20	ballistic	50	SA, A	30	Md	8 lb	17	Mil (+3)
OC14 Grenade Launcher	3d6, 10'r	20	ballistic	115	SA	1	Lg	8 lb	17	Mil (+3)
OC14 Assault Rifle 7.62mm	2d10	20	ballistic	165	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 Assault Carbine 7.62mm	2d10	20	ballistic	100	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 Silenced Rifle 7.62mm	2d10	20	ballistic	100	SA, A	30	Lg	8 lb	17	Mil (+3)
OC14 SMG 7.62mm	2d10	20	ballistic	65	SA, A	30	Md	8 lb	17	Mil (+3)
Special Rules										

PARKER & HALE IDW

After the bankruptcy of Bushman LTD, Parker & Hale bought the design for the IDW. After several years of tinkering, their "new and improved" IDW was ready for the market. The first major change was the shape of the gun and the reduction of the amount of metal used in thw weapon, thereby lightening it. The next change was the addition of the two point folding collapsible stock which folds to the left of the gun and collapses to align with the magazine well. They then eliminated two calibers from availability and swapped the selection of three barrels for five, effectively making the weapon the same size as anything from a pistol to a carbine rifle. The last change made by Parker & Hale is probably the only alteration one would consider going backwards. Parker & Hale opted to permanently set the weapon to a rate of fire of 450 rounds per minute, thereby eliminating the highly innovative mechanical limiter that could adjust the rate down to as low as 100 rpm and as high as 1400 rpm. What replaces it is an innovative selector switch system. First the weapon has a finger depressed selector that switches to full auto when the grip is squeezed right. Second, through the trigger, partial depression will fire either one, two, or three rounds when in full auto mode, while fully depressing it will fire until the trigger is released.

Weapon	IDW (Individual Defense Weapon)			
Manufacturer	Parker & Hale		Year	1998
Nation	United Kingdom			
Caliber	9mm Parabellum		Mags	10, 20, 32
Accuracy	Group		MOA	
	Kill			
Velocity	330 m/s		Energy	
Weight	Empty	2.0 kg	ROF	SS 40
	Loaded	2.4 kg		MB 1-3
Length	295mm folded, 574mm open (108mm barrel)			Burst 3
Range	Effect.	100 m		Auto
	Max.			Cyclic 450
Notes				



PARKER & HALE IDW

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
PH IDW / 108	SMG	+2	J	M	9mm P	0	10, 20, 32	2 [SS], 1-3 [B], 22 [C]	ST	170	2.0	2.4	$780
PH IDW / 152	SMG	+3	T	M	9mm P	-1	10, 20, 32	2 [SS], 1-3 [B], 22 [C]	ST	200	2.2	2.6	$800
PH IDW / 254	SMG	+4	T	M	9mm P	-2	10, 20, 32	2 [SS], 1-3 [B], 22 [C]	ST	230	2.4	2.8	$820
PH IDW / 305	SMG	+4	T	M	9mm P	-3	10, 20, 32	2 [SS], 1-3 [B], 22 [C]	ST	260	2.5	2.9	$840
PH IDW / 356	SMG	+5	T	M	9mm P	-3	10, 20, 32	2 [SS], 1-3 [B], 22 [C]	ST	300	2.6	3.0	$860
Special Rules													

D20 Modern

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
PH IDW / 108	2d6	20	ballistic	55	SA, B, A	10, 20, 32	Sm	5 lb	17	Mil (+3)
PH IDW / 152	2d6	20	ballistic	65	SA, B, A	10, 20, 32	Md	5 lb	17	Mil (+3)
PH IDW / 254	2d6	20	ballistic	75	SA, B, A	10, 20, 32	Md	6 lb	17	Mil (+3)
PH IDW / 305	2d6	20	ballistic	85	SA, B, A	10, 20, 32	Lg	6 lb	17	Mil (+3)
PH IDW / 356	2d6	20	ballistic	95	SA, B, A	10, 20, 32	Lg	7 lb	17	Mil (+3)
Special Rules										

PRETORIA IFA

Weapon	IDW (Individual Defense Weapon)				
Manufacturer	Bansha Investments		Year	2003	
Nation	South Africa				
Caliber	9mm Parabellum		Mags	10	
Accuracy	Group			MOA	
	Kill				
Velocity	400 m/s		Energy	5900 ft-lbs	
Weight	Empty	1.2 kg	ROF	SS	40
	Loaded	1.8 kg		MB	
Length	295mm folded, 574mm open (108mm barrel)			Burst	
Range	Effect.	50 m		Auto	
	Max.			Cyclic	
Notes					

The South African Pretoria is the world's first ready-for-market "Intelligent Firearm", a weapon that can only be used by its rightful owner. The weapon is a bulky, blocky cross between a plastic sci-fi raygun and a power spray hose attachment, made of milled wood and machined aluminum. After eight years of development starting back in 1994 and though still in prototype form, the weapon is ready for manufacturing and the rights are being negotiated with Denel and an unnamed European manufacturer to produce it.

The Pretoria IFA uses a biometric sensor located just above the grip (roughly the location of a selector switch or safety lever) to activate its firing capability. The sensor reads the thumbprint and compares it with a small database of those of any and all authorized users for that specific weapon. If the thumbprint is recognized, it unlocks the safety and the shooter can then blast away. If the thumbprint isn't recognized, the gun is about as useful as a wooden club. In addition to the database of thumbprints, the weapon also stores personal data on each authorized user, including such things as license or identity number, gun permit status, etc. While the weapon also records data on each and every shot it ever fires, one major drawback is that the weapon cannot have its authorized user files revised. Those are set in stone and effectively make the weapon impossible to resell or trade as with other used firearms. A capacity to track sales and possession of the weapon would have also been quite effective, as would the ability to store the thumbprint of any unauthorized individual that attempts to use the weapon. Perhaps these sorts of features will appear in the gun within a few years after it enters manufacturing. The developer hopes to increase the weapon's "safety" with a smart-card based proximity transponder technology that will also lock out the weapon's functions if the user doesn't also carry a correctly encoded smart card on his person. Another current feature of the weapon is a gun camera. When the weapon is fired, it snaps and stores a small digital photo of whatever the weapon was pointed at the moment the trigger was pulled. Law enforcement can download the images for investigative purposes. The pictures are timestamped, and will eventually include GPS information pinpointing the location at which the shot took place. Flame spectrometry data will also be included eventually, so that even a fragment of the bullet can be traced back to the gun that fired it.

This weapon uses unusual technology, right down to its firing mechanism and ammunition. Let's not forget that the weapon's very multi-barrel design lends to inherent inaccuracy since only one barrel can possibly be aligned properly with the sights. The pistol doesn't use normal cartridges or magazines as we all know them. Instead, it uses caseless ammunition which propels a 100 gram bullet at a velocity of roughly 400 meters per second. One hell of a heavyweight bullet, what's it for, hunting elephants? The rounds are affixed inside the breech end of a barrel and are virtually impossible for anyone other than an authorized dealer to reload. The ten barrels (in two vertical rows of five) can be swapped out easily and exchanged for reloading. The ammunition itself, aside from being the first caseless ammo since the 4.7mm ammo of the H&K G11, is also encoded to assist in tracking down whomever fired it, as mentioned in the electronic features. The rounds also do not possess primers. The pistol is dicharged by firing a laser through a lens, igniting the propellant of the bullet.

This weapon possesses a great deal of potential, but also a great deal of flaws. First, the technology behind it is delicate, as are all electronics. Then there are issues about battery power and lifespan. And the fact that it robs the gun community of a time-honored tradition of hand reloads. Then there is the big brother factor of all the governmental oversight the weapon suggests to offer. And are there really any governments out there that are willing to spend the money necessary to establish and maintain the technological overhead required to properly implement this weapon's market use and support? Lastly, the weapon will not be universally legal. For example, the bullet fingerprinting technology would be illegal in the US, where government is prohibited from maintaining any databases of firearms physical identifiers or ballistics information on a gun unless the weapon has been tested as part of a criminal investigation. Gun owners and manufacturers have fought the government's efort to establish such a database for over 70 years on the basis of violation of privacy.

This gun is so new to the market that it came into general public knowledge outside South Africa in March 2003.

PRETORIA IFA

Cyberthriller													
Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Pretoria IFA	HND	-3	J	E	Pre 9	0	10	3 [SS]	ST	50	1.2	1.8	$1,200
Special Rules													

D20 Modern										
Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
Pretoria IFA	2d12	20	ballistic	15	SA	10	Lg	4 lb	18	Lic (+1)
Special Rules										