

BIG BANG

The Mostly Illustrated RPG Guide
to Modern Weapons



Designed for use with all roleplaying
game systems.



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THE MOSTLY ILLUSTRATED RPG GUIDE TO FIREARMS VOLUME 3: ARMY FUTURE COMBAT SYSTEMS

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WELCOME TO BIG BANG

Welcome to yet another volume of Big Bang. Originally, this was meant to be the second installment of Mini-Bang. Mini-Bang is a supplementary series to the regular series, designed for use as convention giveaways, freebies, review award programs, and as a general filler in between release of volumes of the regular series. Some you can buy, others you can only get by winning or perhaps attending a convention. The first one has been produced as part of our review awards program on RPGnow, where we award a free copy once per month as incentive to get buyers to write reviews. Another will be produced as part of an award program to entice buyers into writing reviews on other sites. Occasionally, they'll appear for sale, short books with 10-15 weapons, retailing at \$2.00

Seems the overall plans for the Big Bang series are starting to become expansive. We've got the highly successful regular series, plus its enhanced annual CD-ROM edition, we've got software coming out in a few weeks, plans for the Big Bang Ricochet series of printed books for exposure in stores, and now the Mini-Bang series. Of course, that isn't the end. We're now working on licensing deals which will result in the publications of appendices that present game statistics for game systems using a royalty licensing structure. Initially, we had planned to just publish an ever-expanding free booklet of conversion rules, but who wants to do all that work involved with conversions at the game table? Hell, even I don't want to do that sort of work, but at least I'll be getting a paycheck out of it! On the flip side, as a programmer, I am capable of writing software to automate the task as well.

Since the first issue of Mini-Bang is a rarity you won't be able to obtain for awhile, it covered three main weapons. First is the world's first plastic pistol and its not the Glock 17. It is the H&K VP-70, which you're probably familiar with from the movie Aliens, or perhaps the Playstation game,

Biohazard 2. Second is a gun that was made for sale to airline flight crews, the Colt Lawman Mk III Air Crew Revolver, an odd mix of space age innovation and wild west technologies. Last is the XM-148, the grenade launcher that should have been the M203, had Colt put more effort into it. Between these items, there were a total of six weapons "stat"ed out.

This volume was originally expected to contain stats on 11 weapons that are part of the Army Future Combat Systems Special. We have already covered the OICW... ermmm... I mean the XM29 SABR. However, we need to revisit the weapon, since there have been some recent developments since April. Same goes for the XM8 Lightweight Assault Rifle, since they've announced plans to make an entire family of XM8 rifles. We will also cover the X312 Lightweight Heavy Machine Gun, the XM307 Objective Crew-Served Weapon, the XM25 25mm Airburst Weapon, the XM107 Long Range Sniper Rifle, and Barret's Payload Rifle.

One last thing you'll notice is some more formatting changes. Big Bang is an evolving project, continually expanding and improving. There has been demand for improved formatting, so you folks are getting it. There also isn't much to update in the rules section, either, so only the ammunition tables of the Big Bang series are presented here.

On a final note, I'd like to mention that there is a new royalty free system licensed, called Prometheus. This system is an OGL system derived from the D20 SRD. Prometheus is a response to changes recently made in the D20 trademark license involving issues of quality control. Already one publisher has been stripped of the D20 license under these nebulous quality guidelines. We're also looking into EABA, Tri-Stat/BESM, and "Powered by GURPS".

ARMY FUTURE COMBAT SYSTEMS AN OVERVIEW

The Army of the United States of America (AUSA) is well known worldwide for being the most technologically advanced military in the world. It is a long-term effort of the U.S. government dating back to the middle of the 1950's and the initiation of the Special Purpose Individual Weapon program. Had this \$30 million boondoggle actually been successful, it would have produced one of the world's most advanced weapon systems, firing both a flechette munition and an explosive munition. While the SPIW program was a failure, it did spawn the revolutionary 40mm grenade launcher system, a technology that eventually propagated in one form or another around the entire world. Even the poorest nations stock these ubiquitous weapons.

The failure of the SPIW program also helped spur the development and adoption of the M16, the second most numerous weapon in the world, with more than seven million units manufactured. This next technological leap came with the M16, in the height of the SPIW fiasco. Initially unreliable, this rifle was revolutionary for its vast use of polymers and other lightweight materials, as well as being a smaller caliber than most other military small arms of the time. Ten years later, even the Soviets followed suit in changing to a smaller caliber with their AK-47 5.45mm rifles.

The late 1980's saw another wave of technological advancement in the Advanced Combat Rifle competition, which introduced the world to such advanced weapons as the FARC, the G11, and the Steyr Flechette Rifle. While none of these weapons met the competition goals of doubling the M16's efficiency, many exhibited some profound improvements over the M16. Shortly after the ACR competition came a string of small arms directives that culminated in the Joint Services Small Arms Master Plan, which outlines the Mission Needs Statement for the Objective Family of Small Arms. This program consisted of the Objective Individual Combat Weapon (OICW), Objective Crew Served Weapon (OCSW), Objective Personal Defense Weapon (OPDW), Objective Sniper Weapon (OSW) and the Objective Personal (Sidearm) Weapon (OPW). These weapons systems would then be used to not only replace virtually all the projectile-based weapon systems used by U.S. ground forces, but to also provide interoperability with any U.S. law enforcement agency willing to buy these weapon systems. These new weapon systems were to also share technologies, allowing them to greatly reduce the overall cost of long term weapon maintenance. Overall, the United States military intends to completely rearm with these new weapons over a span of five to ten years (depending upon the weapon system), beginning no later than 2010.

Objective Individual Combat Weapon (OICW):

This is the next-generation individual weapon envisioned to replace the current inventory of small arms weapon systems. The weapon involves a 5.56mm kinetic energy

weapon and a 20mm airburst munition. Using advanced fire control technology, the weapon will have the single shot capacity to defeat targets in defilade and behind barriers and cover from even long ranges, making the system an overmatch for the threat of enemy infantry compared to the baseline of the M16/M203 combination. The technologies exploited to achieve the overmatch capability include high strength, ultralightweight materials, high tech miniaturized fuzing, high explosive air bursting projectiles, electronic ranging, ballistic computation, reticle displacement, video sighting and sophisticated fire control devices.

The OICW program is rapidly nearing completion. In 1999, the significant potential of the OICW in an urban environment was demonstrated in the Military Operations in Urban Terrain (MOUT) ACTD. Originally expected to begin deployment in late 2004 or 2005, the program has encountered delays. It wasn't until Spring 2003 that the fusing technology was reliable enough to produce ammunition in quantity. Additionally, the rifle is still slightly overweight. However, even if the weapon does not improve any further, the U.S. Army still intends to field it as the new grenadier's weapon, two weapons per squad, to the tune of some 22,000 units. If the weapon design does reach its development goals before 2007, deployment could be expanded to general replacement of the M16 eventually. Deployment is expected between 2007 and 2009. The weapon has reached the point where the Army has adopted it as an experimental weapon, designated as the XM-29 Selective Assault Battle Rifle or the XM29 SABR. It has also spawned additional development of its two modular weapons, resulting in the XM-8 Lightweight Assault Rifle and the XM-25 Airburst Weapon.

Objective Crew Served Weapon (OCSW):

The goal of this program is to produce a lightweight, two-man portable, crew-served support weapon capable of defeating enemy personnel and light vehicles out to a range of 2000 meters, effectively replacing the M2 machine gun and the Mk 19 grenade machine gun. Cost reduction measures include utilizing the same fusing and fire control technologies employed for the OICW's 20mm airbursting munitions.

The OCSW is the second most widely known part of the program. This program ran from 1996 to 2000 and produced a fully functional weapon within Army guidelines. However, the ammunition is still in the early stages of development and aside from a training round, will not be ready for years yet. The weapon itself has been redesignated as the XM-307 Airbursting Weapons System. It too has spawned additional development, in the form of the XM-109 25mm Payload Rifle and the M-312 lightweight .50 Caliber Machine Gun.

Overview: Army Future Combat Systems

Objective Sniper Weapon (OSW): The OSW is a relatively unknown program, though many are familiar with the popular weapon selected as the current choice of this program. The goals of the OSW program were finalized in 1994, but languished for several years as technological studies were undertaken in a number of technical areas, including bullet guidance systems and crosswind sensing. The development program ran from 1997 to 2002, with prototypes undergoing testing after that point.

Like the other Future Combat Systems, the OSW is supposed to be a technological marvel, incorporating technologies including: Innovative Mechanisms, Pulsed Laser, Guided Bullets, Image Enhancement, Sensor Fusion, Target Illumination, Target Identification, Cross-Wind Sensing, Inertial Reticle, and, Improved Materials, resulting in a rifle weighing under 15 pounds and capable of hitting targets to ranges of up to 2,000 meters, probably using the new M118 Long Range 7.62mm cartridge.

This program is coupled with the Long Range Sniper Rifle Project, with the hopes that one rifle can be developed which will fit the needs of both programs. Currently, the army has selected the M82A1 rifle from Barret as an interim weapon, if not an outright replacement for the OSW.

XM107 Long Range Sniper Rifle: This program began concurrently with the OSW program in 1997. The goal is to produce a .50 caliber rifle capable of engaging targets at extreme ranges in situations where high caliber automatic weapons fire will present too much possibility for collateral damage or bystander casualties, as well as functioning as a counter-sniper weapon capable of operating at ranges greater than those of existing military issue sniper weapons around the world. The program was mandated by the U.S. Army Special Operations Command.

Objective Personal Weapon (OPW): The OPW is the side arm of the future. The pistol is meant to meet

SOCOM needs for a sidearm capable of incapacitating a target with the first shot, even if the target is in body armor. Again, it will be a technologically advanced weapon, using new materials and technology concepts. It will also include technologies for increased accuracy, and sighting systems allowing efficient use, day or night. The OPW program actually isn't scheduled to begin as of yet. It exists on the military's timetables to take place between 2004 and 2009.

Objective Personal Defense Weapon (OPDW): The OPDW is the weapon of the future for those troops that don't need to carry an assault rifle or cannot carry an assault rifle due to their jobs. The resulting high-tech weapon will be a highly ergonomic design weapon to allow mainly vehicle crews and artillery crews to have a weapon capable of full-time carry that will not interfere with movement or their duties. This program is scheduled for the latter half of this decade, but may be cancelled, as the XM-8 lightweight assault rifle may suit the requirements for this program.

Multi-Purpose Individual Munition/Short Range Assault Weapon (MPIM/SRAW): This program was established to produce and advanced technology, lightweight, shoulder-fired assault weapon to replace the AT4 and M72 weapons. Of all the Army Future Combat Systems, this is the only system that actually exists in inventory now. The MPIM/SRAW entered development in the late 1980's, long before the Objective Family of Small Arms was even established. The concept is to produce a rocket with a modular series of warheads for various tasks. The weapon is also being considered by the Marines as the Predator SRAW and by the British as the Kestrel.

Overall, these numerous programs have produced a wide array of experimental weapon systems, all of which are under serious consideration by the U.S. Military.

Cartridge Guide Chart

COMPLETE CARTRIDGE GUIDE CHART

Cartridge	ABBR	Type	Bullet Wt (gm)	Vel. (m/s)	Pen	Total Disrupt.	Per Inch Disrupt.	Qty.	Wt (kg)	Cost	Energy (ft-Lbs)	Notes
Generic Cartridges												
.22 Long Rifle (5.7 x 17mmR)	.22 LR	P	2.59	330	14.2	0.41	0.03	5000	25	245	104.1	
.22 Short Magnum	.22 SM	P	2.1	606	26.1	1.11	0.04	50 500		8 75	285	
.25 ACP (6.3x15.5mm)	.25 ACP	P	3.25	246	11.9	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	30.2	5.76	0.19	50	1.1	50	576	
.380 Automatic (9x17mm)	.380 Auto or .380 ACP	P	5.8	303	22.2	2.2	0.1	1500	15	125	196	
.38 Special (9x29mmR)	.38 Spec	P	7.1	286	21	2.42	0.12	1000	15	175	214	
.38 Special Match	.38SpM	P	9.6	210	15.4	1.76	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	26.4	5.97	0.23	1000	17	225	452	
.45 ACP (11.43x23mm)	.45 ACP	P	13	296	25.7	6.68	0.26	1000	20	63	420	
6.35mm	6.35	P	3.25	240	11.6	0.34	0.03				69	
7.62mm Tokarev	7.62 TT	P	5.5	510	29.5	3.75	0.13				528	
7.65mm	7.65	P	4.6	320	18.6	1.23	0.07				174	
9mm Makarov (9x18mm) 0.35	9mm M	P	6.15	321	22	2.31	0.11	1500	15	200	234	
9mm Parabellum (9x19mm)	9mm P	P	7.5	379	25.9	3.93	0.15				397	
9mm Largo (9x23mm)	9mmL	P	8	361	24.7	3.81	0.15				384	
9mm Short	9 Short	P	6.1	305	20.9	2.07	0.1				209	
10mm Colt (10x25mm)	10mmC	P	11	406	30.8	8.16	0.26	1000	17	225	688	

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Cartridge	ABBR	Type	Bullet Wt (gm)	Vel. (m/s)	Pen	Total Disrupt.	Per Inch Disrupt.	Qty.	Wt (kg)	Cost	Energy (ft-Lbs)	Notes
Specific Cartridges												
* Indicates a military issue round and data is calculated according to the use of an FMJ tumbler, rather than a commercial/civilian use FMJ bullet.												
.41 Swiss Peabody Rimfire (10.4x38mmR)	.41 Swiss	R	20.2	470	37.2	21.74	0.58				1647	
.41 Vetterli-Vitali Rimfire (10.4s47mmR)	.41 V-V	R	20	430	34	17.97	0.53				1361	
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.
4.6 x 30mm	4.6 HK	P	1.7	725	25.3	0.86	0.03				329.5	HK PDW ammo.
5x54mm AIWS*	AIWS	R	6.5	945	32.1	28.9	0.9				2140.8	Composite cartridge round for AIWS
7x27mm Nambu	7 Nam	P	3.63	381	6.3	1.2	0.19				196	
7N6 5.45 x 39mm Ball*	7N6	R	3.43	880	36.4	3.53	0.1				979.6	Russian 5.45mm Ball. 7.5cm group
7T3 5.45mm Tracer	7T3	R	3.23	883	24.9	4.2	0.17				928.7	Russian tracer, 14cm group
Colt Plaster Round	CPR	P	0.25	549	3.35	0.025	0.007				29	
DM-11 4.7 x 33mm*	DM11	R	3.2	930	29.7	12.4	0.42				1021	Final form for the caseless ammo for G-11.
L191 5.7x28mm Tracer	L191	P	2	715	31	1.51	0.05	1000	6	710	377	Tracer version of the SS-190
M/12 6.5x55mm Mauser	M/12	R	6	510	25.2	2.94	0.12	.051			575	M/94 Practice/gallery round.
M/94 6.5x55mm Mauser M/94	M/94-94	R	10.1	742	36.6	10.5	0.29	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
M1906 .30-06 (7.62 x 63mm)	M1906	R	9.72	707	40.9	12.72	0.31				1792	Original .30-06 US military cartridge.
M1 .30-06 (7.62 x 63mm)	M1	R	11.28	693	40.1	14.18	0.35				1998	WW2 US round
M1 .30 Carbine (7.62 x 33mm)	M1 Car	R	7.1	570	33	6.04	0.18				851	WW2 US Carbine round.
M2 .30-06 Ball (7.62 x 63mm)	M2 .30	R	9.85	734	42.5	13.9	0.33				1957	WW2 US round
M2 .30-06 AP (7.62 x 63mm)	M2 .30 AP	R	10.89	726	71.5	15	0.21				2117	WW2 US round
M2 .50 BMG Ball	M2 .50	R	50	924	89.2	308.58	3.46				15,744	
M2 7.62mm NATO AP	M2	R	10.8	868	85.4	21.3	0.25				3001	Older US AP round
M17 .50 BMG Tracer	M17	R	40.2	884	58	283.8	4.89				11,586	
M20 .50 BMG Tracer	M20	R	39.5	896	58.8	286.5	4.87				11,695	

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Cartridge	ABBR	Type	Bullet Wt (gm)	Vel. (m/s)	Pen	Total Disrupt.	Per Inch Disrupt.	Qty.	Wt (kg)	Cost	Energy (ft-Lbs)	Notes
Specific Cartridges												
* Indicates a military issue round and data is calculated according to the use of an FMJ tumbler, rather than a commercial/civilian use FMJ bullet.												
M33 .50 BMG Ball*	M33	R	44.6	897	77.4	1167.3	15.07				13,235	
M61 7.62mm AP	M61	R	9.8	868	85.4	19.3	0.23				2723.1	Older US AP round
M62 7.62mm Tracer	M62	R	8.5	825	32.5	18.9	0.58				2133.6	
M67 7.62mm Bloc Ball*	M67R	R	8	740	38.3	51.6	1.35				1615.6	Soviet 7.62x39mm Ball ammo.
M78 7.62mm Bloc Silencer*	M78R-S	R	11.8	290	15	11.7	0.78				366	Soviet 7.62x39mm cold-loaded ammo.
M78 7.62mm Bloc Tracer	M78R-T	R	7.7	715	28.2	12.9	0.46				1451.8	
M80 7.62mm NATO Ball*	M80	R	9.65	868	45	85.7	1.91				2681.4	standard NATO 7.62mm round, US designation.
M118 5.56mm Long Range	M118	R	11.4	786	45.5	18.44	0.41				2597	Long range NATO standard round, +1 to hit.
M193 5.56mm NATO Ball*	M193	R	3.95	1005	38	25.2	0.66				1471.4	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	27.6	6.7	0.24				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	23.1	17.4	0.75				389	Standard NATO 9x19mm Parabellum NATO ammo.
M885 5.56mm NATO Ball*	M885	R	4	1005	38	25.5	0.67				1490	For NATO weapons with a 1-in-7 twist. Green tip.
M856 5.56mm NATO Tracer	M856	R	4.15	875	25.1	5.6	0.22				1149	Tracer version of M885. Orange tip.
M993 7.62mm NATO AP	M993	R	8.4	950	93.5 20mm	19.9	0.21				2796	Latest US armor-piercing round.
M995 5.56mm NATO AP	M995	R	3.37	1013	72.8 12mm	4.8	0.07				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	28.1	8	0.28				536.6	Russian subsonic armor piercing round. SJESC.

Cartridge Guide Chart

Cartridge	ABBR	Type	Bullet Wt (gm)	Vel. (m/s)	Pen	Total Disrupt.	Per Inch Disrupt.	Qty.	Wt (kg)	Cost	Energy (ft-Lbs)	Notes
Specific Cartridges												
* Indicates a military issue round and data is calculated according to the use of an FMJ tumbler, rather than a commercial/civilian use FMJ bullet.												
Pretoria 9mm	Pret 9	P	6.5	400	7.9	18.9	2.4				382.4	Used in the Pretoria IFA. Hollowpoint.
Roth-Steyr 8x18.7mm	RS 8mm	P	7.5	320	19.5	2.21	0.11				283.2	
Sb193 5.7x28mm Subsonic*	Sb193	P	3.6	300	11.6	2.2	0.19	1000	7.6	450	119.5	Subsonic version of SS-190, range of 50 meters.
SP-5 9 x 39mm*	SP-5	R	16	290	17.7	22.1	1.25				496.3	Soviet Subsonic sniper round
SP-6 9 x 39mm*	SP-6	R	16	290	28.1	7.4	0.26				496.3	Soviet Subsonic armor piercing round. SJESC
SS109 5.56mm NATO Ball*	SS109	R	4	930	35.2	21.8	0.62				1276	NATO European equivalent of the M885 round.
SS190 5.7 x 28mm Ball*	SS190	P	2	715	27.7	6.8	0.24	1000	6	410	377	
T194 5.7x28mm Practice	T194	P	1.75	705	30.5	1.28	0.04	1000	5.75	290	321	Practice version of SS190

Cartridge Guide Chart

Damage by Cartridge

Caliber	Abbr.	Cyberthriller	D20	FUDGE	Action!	Game 5	Game 6
Generic Cartridges							
.22 Long Rifle (5.7 x 17mmR)	.22 LR	2+1D3	2d4	2	2d6		
.22 Short Magnum	.22 SM	3+1D3	2d6	3	3d6+2		
.25 ACP (6.3x15.5mm)	.25 ACP	2+1D3	2d4	2	1d6+2		
.32 ACP (7.62x17mmR)	.32 ACP	4+1D3	2d4	2	2d6+2		
.32 Magnum	.32 Mag	5+1D3	2d4	3	2d6+2		
.357 Magnum (9x33mmR)	.357 Mag	10+1D3	2d6	4	4d6		
.380 Automatic (9x17mm)	.380 Auto or .380 ACP	5+1D3	2d6	3	3d6		
.38 Special (9x29mmR)	.38 Spec	6+1D3	2d4	3	2d6+2		
.38 Special Match	.38SpM	6+1D3	2d4	2	2d6		
.40 S&W (10x21mm)	.40 SW	11+1D3	2d6	4	4d6		
.41 Action Express (10.42x18mm)	.41 AE	12+1D3	2d6	3	3d6+2		
.45 ACP (11.43x23mm)	.45 ACP	13+1D3	2d6	3	3d6+2		
6.35mm	6.35	2+1D3	2d4	2	1d6+2		
7.62mm Tokarev	7.62 TT	7+1D3	2d6	3	4d6		
7.65mm	7.65	4+1D3	2d4	2	2d6+2		
9mm Makarov (9x18mm)	9mm M	6+1D3	2d6	3	3d6		
9mm Parabellum (9x19mm)	9mm P	8+1D3	2d6	3	3d6+2		
9mm Largo (9x23mm)	9mmL	8+1D3	2d6	3	3d6		
9mm Short	9 Short	5+1D3	2d4	3	2d6+2		
10mm Colt (10x25mm)	10mmC	14+1D3	2d6	4	4d6		
Specific Cartridges							
* Indicates a military issue round and damage is calculated according to the use of an FMJ tumbler, rather than a commercial/civilian use FMJ bullet.							
.41 Swiss Rimfire (10.4 x 48 mmR)	.41 Swiss	30+1D3	2d8	4	5d6		
.41 Vetterli-Vitali (10.4 x 47 mmR)	.41 V-V	27+1D3	2d8	4	4d6+2		
3x12mm Kolibri	3x12	1D3	2d3	1	1d6		
4.6 x 30mm HK PDW	4.6 HK	2 + 1D3	2d6	3	3d6+2		
5x54mm AIWS*	AIWS	45+1D3	2d8	4	4d6+2		
7x27mm Nambu	7 Nam	10+1D3	2d3	1	1d6		
7N6 5.45 x 39mm Ball*	7N6	25+1D3	2d8	4	4d6+2		
7T3 5.45mm Tracer	7T3	23+1D3	2d8	3	4d6+2		
Colt Plaster Round	CPR	1+1D3	2d3	1	1d6		
DM-11 4.7 x 33mm*	DM11	21+1D3	2d8	3	4d6+2		
L191 5.7x28mm Tracer	L191	3+1D3	2d6	4	4d6		
M/12 6.5x55mm Mauser	M/12	6+1D3	2d6	3	3d6+2		
M/94 6.5x55mm Mauser M/94	M/94-94	15+1D3	2d8	4	4d6+2		
M/94 6.5x55mm Mauser M/41	M/94-41	14+1D3	2d8	4	5d6		
M1906 .30-06 (7.62 x 63mm)	M1906	16+1D3	2d8	5	5d6		
M1 .30-06 (7.62 x 63mm)	M1	18+1D3	2d8	5	5d6		
M1 .30 Carbine (7.62 x 33mm)	M1 Car	10+1D3	2d8	4	4d6+2		
M2 .30-06 Ball (7.62 x 63mm)	M2 .30	17+1D3	2d10	5	5d6+2		
M2 .30-06 AP (7.62 x 63mm)	M2 .30 AP	11+1D3	2d10-1	8	5d6+2		
M2 .50 BMG Ball	M2 .50	174+1D3	2d12	9	9d6		
M2 7.62mm NATO AP	M2	13+1D3	2d10-1	9	6d6+2		
M17 .50 BMG Tracer	M17	245+1D3	2d12	6	9d6		
M20 .50 BMG Tracer	M20	244+1D3	2d12	6	9d6		
M33 .50 BMG Ball*	M33	754+1D3	2d12	8	9d6		
M61 7.62mm AP	M61	12+1D3	2d10-1	9	6d6+2		
M62 7.62mm Tracer	M62	30+1D3	2d10	4	6d6		
M67 7.62mm Bloc Ball*	M67R	68+1D3	2d10	4	5d6+2		
M78 7.62mm Bloc Silencer*	M78R-S	39+1D3	2d4	2	2d6+2		
M78 7.62mm Bloc Tracer	M78R-T	23+1D3	2d10	3	5d6+2		
M80 7.62mm NATO Ball*	M80	96+1D3	2d10	5	6d6+2		
M118 5.56mm Long Range	M118	21+1D3	2d10	5	6d6		
M193 5.56mm NATO Ball*	M193	34+1D3	2d10	4	5d6+2		
M196 5.56mm NATO Tracer	M196	13+1D3	2d8	3	5d6		
M200 5.56mm NATO Practice	M200	0	0	0	0		
M882 9mm NATO Ball*	M882	38+1D3	2d6	3	3d6+2		
M885 5.56mm NATO Ball*	M885	34+1D3	2d10	4	5d6+2		
M856 5.56mm NATO Tracer	M856	12+1D3	2d8	3	4d6+2		
M993 7.62mm NATO AP	M993	11+1D3	2d10-1	10	7d6		
M995 5.56mm NATO AP	M995	4+1D3	2d10-1	8	5d6+2		

Cartridge Guide Chart

M1018 20mm HEAB	M1018	5D6s	5d6, 5'r.	5, 5'r	5d6		
PAB-9 9 x 39mm*	PAB-9	15+1D3	2d4+/-1	3+/-2	2d6+5		
Pretoria 9mm	Pret 9	121+1D3	2d6	3	3d6+4		
Roth-Steyr 8x18.7mm	RS 8mm	6+1d3	2d4	2	2d6+2		
Sb193 5.7x28mm Subsonic*	Sb193	10+1D3	2d4	2	1d6+2		
SP-5 9 x 39mm*	SP-5	63+1D3	2d4	2	2d6+2		
SP-6 9 x 39mm*	SP-6	14+1D3	2d4 +/-1	3 +/-2	2d6+5		
SS109 5.56mm NATO Ba II*	SS109	32+1D3	2d8	4	5d6		
SS190 5.7 x 28mm Ball*	SS190	13+1D3	2d6	3	4d6		
T194 5.7x28mm Practice	T194	3+1D3	2d6	3	4d6		

AT-8 BUNKER BUSTER

The AT8 is an improvement over the M136 AT4 anti-tank weapon, developed as a light, disposable, multipurpose direct fire weapon for bunker defeat and urban warfare. The weapon is effective in breaching walls, destruction of fortified targets, and defeating light armored vehicles.

The AT8 is effective an AT4 launcher and rocket, but with an 83mm SMAW HEDP warhead attached. The warhead contains the same explosive load and fusing technology as the warhead used by the USMC, while the launcher provides the exact same controls as the AT4, meaning troops can use the weapon without further training. The M287 Trained, originally developed for the AT4, is also an effective training tool for the AT8 as well.

The AT8 is potent enough to blow a 1 meter diameter hole in the side of an LAV at 250 meters. It will also destroy a concrete wall over 260 mm thick at that range.

This weapon system is fully developed under contract for the US Army and awaits further funding in order to enter production. However, it currently appears that this weapon is one of the casualties of the Future Combat Systems program, as the military has consistently provided contracts to Talley to provide the SMAW-D/BDM for Army use. 1,500 SMAW-Ds were provided in 1995, another 1,012 in 1996, Congress funded 6,000 more in 1997, 1,076 more in 1999, and a final 1,000 units in 2000-2001, for a total of 10,588 units in service, enough to equip nearly two airborne

Weapon	AT8 Bunker Buster				
Manufacturer	Alliant Techsystems		Year	1992-	
Nation	United States, Sweden				
Caliber	9mm Parabellum		Mags	15	
Accuracy	Group			MOA	
	Kill			Pen	
Velocity	325 m/s		Energy		
Weight	Empty	0.86 kg	ROF	SS	45
	Loaded	1.16 kg		MB	-
Length	217 mm			Burst	-
Range	Effective	50 m		Auto	-
	Max.			Cyclic	-
Notes					

divisions. Meanwhile, the AT8, which finished development no later than 1993, is still waiting its first production contract from the U.S. government. This is a shame, really, since the AT8 costs less than \$2,000 per unit, while the military is shelling out \$7,800 per unit for the SMAW-D/BDM. However, the AT8 is apparently under consideration for adoption by the Swedish government, since it is based on the Bofors AT4 anti-tank weapon, of which Sweden already deploys four variants. At the very least, it is manufactured in Sweden as well, most likely by Bofors, since Alliant Techsystems manufactures the Bofors AT4 for the U.S. military as the M136.



AT-8 BUNKER BUSTER

Cyberthriller

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D20 System

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
AT8 Bunker Buster	PEN 3, 15d6, 30'	-	Fire	65	1	1	Lrg	16 lb	20	Mil (+3)
Special Rules										

FUDGE

Weapon	Shots	Rate of Fire	Range	Accy	Dmg	Cost	Notes
AT8 Bunker Buster	1	SS	Mediocre	Fair	12	\$1800	Poor Penetration
Special Rules							

Action!

Weapon	Dmg	Type	Acc	Rmod	STR Min	Max Rng	RoF	Amm	Wt	Cost	Notes
AT8 Bunker Buster	5d6 (53)	P/L	0	-1	3	250	1	1	7.3	\$1800	
Special Rules:											

MULTIPURPOSE INDIVIDUAL MUNITION/SHORT RANGE ASSAULT WEAPON

This weapon system has been under development for the U.S. Marine Corps since 1990. The program was initiated as a competitive development program meant to produce a lightweight, shoulder-fired, disposable weapon that can defeat MBTs equipped with reactive armor. The weapon would then replace the M136 AT4 and the M72 LAW. The resulting weapon was later renamed the Predator for further development as an anti-tank weapon for the USMC.

Lockheed Martin has facilitated the use of a modular warhead on the Predator, which would allow future development of the weapon for other purposes. When the Army announced its need for a man-portable, shoulder-fired weapon capable of defeating personnel protected by buildings, bunkers, and light armor, it was a simple matter to fit an alternative warhead to the Predator and enter the weapon into competition.

By 1994, the Lockheed Martin entry was selected over the AT8, SMAW-D/BDM, and French-made ABB by GIAT. In 1996, the weapon entered the Engineering and Manufacturing Development Phase, in which safety concerns of the weapon get addressed and the developer designs and builds the manufacturing facilities need to mass produce the weapon. The EMD phase ended in 2002, so the weapon now should be awaiting production funding.

The MPIM/SRAW is a rocket propelled 3.116 kg warhead, launched from a 900mm long disposable launch tube system. The entire package weighs 9 kg. The rocket is a fire-and-forget or FNF system, using an inertial guidance system to guide the rocket to the aimpoint, providing a very high probability of hitting bunkers, building, and light armor over a range of 17 to 500 meters, regardless the crosswinds or use of obscurants like smoke. Aiming is accomplished using a folding 2x magnification telescopic daysight, which testing troops have stated allows the weapon to be aimed very much like a rifle. If aiming at a moving target, the soldier needs to track the target

Weapon	MPIM/SRAW				
Manufacturer	Lockheed Martin		Year	2002-	
Nation	United States		Mags	1	
Caliber	142mm rocket				
Accuracy	Group		MOA	Pen	
	Kill				
Velocity	25 m/s at muzzle, 300 m/s maximum		Energy		
Weight	Empty	-	ROF	SS	1
	Loaded	9 kg		MB	-
Length	900 mm			Burst	-
Range	Effective	500 m		Auto	-
	Max.			Cyclic	-
Notes	Minimum 17 meter range.				

for about two seconds for the inertial guidance system to calculate its flight. The warhead is a two-stage system using an Explosively Formed Penetrator (EFP) and a follow-through fragmentation grenade (FTG). On impact, the crush switch triggers the EFP, which forms a long rod which passes through the center of the follow-through grenade and punches a hole into the object struck. The grenade, also propelled by the EFP, follows the rod through the hole and after a delay, detonates and scatters its lethal payload of fragments. The crush fuse also can operate on immediate or delayed basis. The immediate mode is used against hard targets, like brick or concrete, while the delay mode is used against soft targets, like sandbag bunkers. The warhead is effective against double-reinforced concrete walls, triple brick walls, earth and timber bunkers, and light armored vehicles. Once funded, the weapon can be expected to cost significantly less than the Predator SRAW, which costs \$13,485 per system, since development costs for the rocket itself have been absorbed in USMC and USN contracts.



MULTIPURPOSE INDIVIDUAL MUNITION/SHORT RANGE ASSAULT WEAPON

Cyberthriller

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D20 System

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PREDATOR SRAW MK.40 MOD 0

This weapon system has been under development for the U.S. Marine Corps since 1990. The program was initiated as a competitive development program meant to produce a lightweight, shoulder-fired, disposable weapon that can defeat MBTs equipped with reactive armor. The weapon would then replace the M136 AT4 and the M72 LAW. The resulting weapon was later renamed the Predator for further development as an anti-tank weapon for the USMC.

In 1996, the weapon finally entered the EMD phase, lasting some 5 ½ years. The first 400 weapons will finally be delivered to the USMC starting in 2004, part of a four year contract, that with ATD and EMD phase deliveries, will total 6,303 units delivered, at an average cost of \$13,485 each, including maintenance contracts. The Predator has been designated by the USMC as the SRAW, MK 40 Mod 0.

The Predator SRAW consists of a missile weighing some 6.4 kg, carrying a 3.26 kg warhead. The launch tube also functions as a sealed environment storage and carry unit, complete with a carry handle and sling. The launcher is fitted with an inexpensive but accurate 2.5x magnification telescopic sight which folds out to allow the weapon to be aimed much like a rifle. It can be fitted with current night vision systems, such as the AN/PVS-4 and AN/PAS-13. The warhead uses an EFP warhead fired in a top attack mode, allowing it to penetrate both reactive armor and the thin top armor of any armored vehicle. The resulting package is very stocky and cumbersome in appearance.

To fire, the safety cover is lifted, exposing the arming button and firing bar. Once the target is acquired, the arming button is pressed, which activates a thermal battery inside the missile. The

Weapon	MPIM/SRAW				
Manufacturer	Lockheed Martin		Year	2002-	
Nation	United States				
Caliber	142mm rocket		Mags	1	
Accuracy	Group			MOA	
	Kill			Pen	
Velocity	25 m/s at muzzle, 300 m/s maximum		Energy		
Weight	Empty	-	ROF	SS	1
	Loaded	9 kg		MB	-
Length	900 mm			Burst	-
Range	Effective	500 m		Auto	-
	Max.			Cyclic	-
Notes	Minimum 17 meter range.				

arming button is held down, and when ready to fire (moving targets require the soldier to track the movement for two seconds), the soldier holds down the firing bar. The missile performs a self-check, then activates the ordinance battery and fires less than a third of a second later. Once the missile enters its flight path, it rises to a height of 2.75 meters above the line of sight, providing the necessary clearance to allow the weapon to pass over the armored vehicle it is aimed at. A magnetic sensor first detects the missiles approach on the target, then an optical sensor detects the leading edge of the target. When it detects the trailing edge, the warhead detonates, driving an explosively formed penetrator down through the top armor of the target vehicle.



PREDATOR SRAW MK.40 MOD 0

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
Predator SRAW MK.40, Mod 0	HVY	+1	N	M,E	PEN 10, 4d10, 1m	0	1	1	RE	600	-	9	\$13,485
Special Rules	Items with Italicized names are extrapolated from similar systems, as no hard data has yet been published.												

D20 System

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XM8 LIGHTWEIGHT ASSAULT RIFLE

In 2002, as development of the XM-29 SABR continued, the US Army decided to explore the possibilities of developing the kinetic energy weapon portion of the XM29 as a stand-alone weapon. The resulting modified weapon shows a great deal of promise as a replacement for the aging stockpiles of M16A2 rifles and M4A1 carbines currently in service.

At the current schedule (and for once, it seems the Army has found a weapon that is developing on time, rather than years behind schedule), the rifle should be ready to enter production by no later than 2005, and once adopted as the M8, should become a standard next generation assault rifle for the US Army.

The rifle will be fully compliant with all NATO standard and US standard 5.56 x 45mm ammunition, as well as firing a new ammunition being developed specifically for the rifle. This new ammunition is designed to further lighten a soldier's load, using new propellants, and a composite cartridge case manufactured from a brass base plate and polymer walls. This ammunition will probably also use the new nylon-cored green bullets the US Army has been developing. This, along with the 20% reduction in rifle weight in comparison to the M4A1, should be greatly favored by US troops who have been weighed down over recent years with protective gear, communications equipment, and other battlefield supplies.

The XM8 is a derivative of the KE component of the XM29, which is in turn a derivative of the H&K G36 assault rifle. The XM29 KE component differs from the G36 mainly in its different housing style and the compatibility with M16 magazines. The XM8 differs from this with the inclusion of a telescoping plastic buttstock, four picatinny rails on the forearm, and a carry handle, which seems to hold both a short picatinny rail at the front and from the photos, the rear of the carry handle mounts either a basic optical scope or a mounting block for the OICW FCS or the "one mil mini pixel" thermal imaging system developed for the XM307. And yes, those forearm rails mean you'll eventually see XM8s mounting M203Pis rather than being slung beneath the XM29. The XM-8 also varies from the XM29 KE component in its lack of a burst limiter. The XM-8 will also be incompatible with the XM-29's 20mm weapon component.

In the latest announcements, it seems that the XM8 is definitely destined for military service. They have announced plans to

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 with M193, 948 m/s with M885.		Energy		
Weight	Empty	2.1 kg	ROF	SS	40
	Loaded	2.45 kg		MB	-
Length				Burst	-
Range	Effect.	600m		Auto	300
	Max.			Cyclic	850
Notes	This represents the XM-8 with a 10.5 inch barrel and a 30 round plastic magazine loaded with the new, lightweight nylon cored, plastic-cased, environmentally-friendly "green" 5.56mm ammunition.				

develop an entire family of weapons based upon the XM-8. Currently, this is expected to include a second carbine with a 14 inch barrel, a pair of rifles mounting 16 or 20 inch barrels, and a DMR/SAW variant sporting a 24 inch heavy barrel and bipod, as well as high capacity plastic magazines to replace the now unacceptable 100-round C-Mags manufactured by Beta. For special operations use, there are plans to develop a 7.62mm conversion kit, complete with 10.5, 16 and 24 inch barrels available. The commanding officer of PEO Soldier (the latest incarnation of the Land Warrior / Force XXI program) has stated that there will also be a 4.6mm conversion kit, which will presumably be to the cartridge developed for the H&K PDW, further indicating that the XM8 may also fill the OPDW program needs, thereby canceling that development program before it starts. As a PDW type weapon, a 4.6mm caliber XM8 will not likely have more than the 10½ inch or 14 inch barrel lengths available. The 4.6mm ammunition is available in 7 flavors: Steel jacketed ball, tracer, copper-clad training, blank, frangible, hollow point, and drill.

Currently, there are not a lot of details available about the XM8, just the vague details provided in a few articles and a single press op photo. The many of the details provided are extrapolated from the G36 assault rifle, upon which the XM8 is ultimately based upon.



XM8 LIGHTWEIGHT ASSAULT RIFLE

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 (10.5" barrel)	AR	+2	J	M, E	5.56N	0	30	2 [SS] 15 [A], 42 [C]	VR	600m	2.1	2.45	\$1,000
<i>XM-8 w/ 14" barrel</i>	AR	+2	J	M, E	5.56N	0	30		VR	600m	2.3	2.65	\$1,000
<i>XM-8 w/ 16" barrel</i>	AR	+3	J	M, E	5.56N	+1	30		VR	600m	2.4	2.75	\$1,000
<i>XM-8 w/ 20" barrel</i>	AR	+3	J	M, E	5.56N	+1	30		VR	600m	2.5	2.85	\$1,000
<i>XM-8 SAW</i>	AR	+4	N	M, E	5.56N	+2	30	15 [A], 42 [C]	VR	800m	3.0	3.35	\$1,800
<i>XM-8 DMR</i>	AR	+4	N	M, E	5.56N	+2	30	2 [SS] 15 [A], 42 [C]	VR	1000m	3.6	3.95	\$1,800
<i>XM-8 7.62mm carbine (10.5")</i>	AR	+1	J	M, E	7.62N	0	30		VR	600m	2.5	3.4	\$1,000
<i>XM-8 7.62mm Rifle (16")</i>	AR	+2	J	M, E	7.62N	0	30		VR	600m	2.9	3.8	\$1,000
<i>XM-8 7.62mm SAW</i>	AR	+3	N	M, E	7.62N	+1	30	15 [A], 42 [C]	VR	800m	3.4	4.3	\$1,800
<i>XM-8 7.62mm DMR</i>	AR	+3	N	M, E	7.62N	+2	30	2 [SS] 15 [A], 42 [C]	VR	1000m	4	4.9	\$1,800
<i>XM-8 4.6 mm</i>	SMG	+1	J	M,E	4.6HK	0	20 or 40	2 [SS], 15 [A], 42 [C]	VR	200m	2.1	2.45	\$1,000
Special Rules	Items with italicized names are extrapolated from similar types of weapons.												

D20 System

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XM8 LIGHTWEIGHT ASSAULT RIFLE

Action!											
Weapon	Dmg	Type	Acc	Rmod	STR Min	Max Rng	RoF	Amm	Wt	Cost	Notes
HK XM-8 Lightweight Assault Rifle	5d6+2	P/L	+1	+1	3	600	2/42	30	2.45	\$1000	
<i>XM-8 w/ 14" barrel</i>	5d6+2	P/L	+1	+1	3	600	2/42	30	2.65	\$1000	
<i>XM-8 w/ 16" barrel</i>	5d6+2	P/L	+2	+1	4	600	2/42	30	2.75	\$1000	
<i>XM-8 w/ 20" barrel</i>	5d6+2	P/L	+2	+1	4	600	2/42	30	2.85	\$1000	
<i>XM-8 SAW</i>	5d6+2	P/L	+2	+3	5	800	42	30	3.35	\$1800	
<i>XM-8 DMR</i>	5d6+2	P/L	+2	+1	4	1000	2/42	30	3.95	\$1800	
<i>XM-8 7.62mm carbine (10.5")</i>	6d6+2	P/L	+1	+1	3	600	2/42	30	3.4	\$1000	
<i>XM-8 7.62mm Rifle (16")</i>	6d6+2	P/L	+1	+1	4	600	2/42	30	3.8	\$1000	
<i>XM-8 7.62mm SAW</i>	6d6+2	P/L	+2	+1	5	800	42	30	4.3	\$1800	
<i>XM-8 7.62mm DMR</i>	6d6+2	P/L	+2	+3	4	1000	2/42	30	4.9	\$1800	
<i>XM-8 4.6 mm</i>	3d6+2	P/L	+1	+3	3	200	2/42	20 or 40	2.45	\$1000	
Special Rules:	Items with italicized names are extrapolated from similar types of weapons.										

XM-25 AIRBURST WEAPON SYSTEM

Among the latest developments of the OICW program has been a development spiral. The OICW itself is approaching completion, now entering the test phase as the XM-29 Selective Assault Battle Rifle. However, it has spawned several different sub-programs to further develop individual weapons to create an entire family of weapon systems under its umbrella. Along with the XM-29, it has spawned the XM-8 Lightweight Assault Rifle family, the XM320 40mm Grenade Launcher, and the XM-25 25mm Airburst Weapon System.

The XM25 Airburst Weapon System is a weapon that Heckler & Koch has pushed for since the inception of the OICW program back in 1994; a stand-alone version of the OICW's 20mm cannon. Heckler & Koch has almost gotten what it wanted. Army officials decided that rather than maintain squad-level ammunition compatibility with the XM-29, they would increase the weapon's caliber so it can fire the more potent 25 x 59mm ammunition used by the XM109 and XM307, both of which would be issued on a company level or higher. With this new weapon only recently announced and the first working prototypes due to the Army by Christmas 2003, this weapon will obviously be an upscaled version of the 20mm component of the XM29, produced by Heckler & Koch.

Currently, details are few and far between. It will incorporate the same manner of smart technologies as the XM-29, which means it will probably use the same fire control system. It will also utilize the 1½ pound "one mil mini pixel" thermal imaging system developed for

Weapon	XM25 Airburst Weapon System				
Manufacturer	Heckler & Koch		Year	2003-	
Nation	Germany		Mags		
Caliber	25 x 59mm			6	
Accuracy	Group		MOA		
	Kill		Pen		
Velocity	325 m/s		Energy		
Weight	Empty	0.86 kg	ROF	SS	45
	Loaded	1.16 kg		MB	-
Length	217 mm			Burst	-
Range	Effective	2000 m		Auto	-
	Max.			Cyclic	-
Notes	All Data is extrapolated from similar weapon systems.				

the XM307. Of course, there are already issues of concern regarding the XM29. The XM29 uses a Breashear LP fire control system and Alliant Techsystems, while the XM307 uses a Raytheon FCS and fusing technology from Kaman Dayron, Inc. This means that at the very least, Heckler & Koch must learn to work with an entire new suite of weapon electronics and at worst, it raises the spectre of possible intellectual property rights disputes between General Dynamics and Heckler & Koch. Hopefully, the government is finally started contracting weapon development programs on a work-for-hire basis.

HK Standalone 20mm Cannon



XM-25 AIRBURST WEAPON SYSTEM

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
<i>XM25 Airburst Weapon System</i>	HVY	+6	N	M,E	25x59mm	0	6	2 [SS]	RE	2000	4.2	6.2	\$15,000
<i>OCSW 25x59mm HEAB Munition</i>	-	-	-	M,E	7D6, 15m	-	-	-	-	-	-	0.25	\$25
Special Rules	Items with an italicized name are experimental/theoretical and extrapolated from data on similar weapon systems.												

D20 System

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XM-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 faltered. 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 XM-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 XM-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 XM-29, in its current format, weighs in at 14 lbs, a full 6 lbs lighter than an M-4 equipped with the appropriate MWS components to allow it equivalent function to the XM-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 XM-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 XM-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		Mags		
Caliber					
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 loaded or less.				

Weapon	XM-29 Kinetic Energy Weapon				
Manufacturer	Heckler & Koch		Year	1994-	
Nation	United States		Mags	30	
Caliber	5.56 x 45mm NATO				
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	-
				Auto	-
Range	Effect.	1000m		Cyclic	-
	Max.				
Notes	This weapon is useless without being connected to an XM-8 Lightweight Assault Rifle, which provides a triager.				

Currently, the US Army has less than 100 units of the XM-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 XM-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 XM-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 XM-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 XM-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 XM-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 XM-8 interacts with the 20mm weapon, eliminating

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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.

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 separately 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

HK OICW Feb 94



AAI OICW 1994



ATK OICW 1994



ATK/HK OICW 1997
w/ HK MP-7 PDW



XM-29 SABR

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

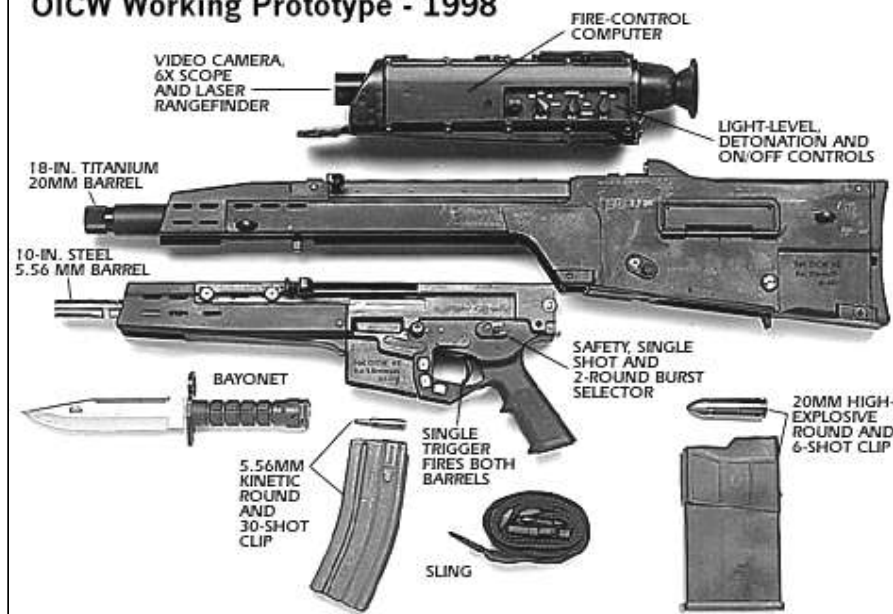
for both stationary and moving targets in all modes. Once the range to the target has been established, the FCS CPU computes a new adjusted aimpoint based on a full ballistic solution. The solution takes into account the cant angle, the site angle, the environment, the HE round characteristics, the barrel 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 fuse 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 fuse. 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 XM-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 XM-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 XM-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 XM-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



OICW Working Prototype - 1998



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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 fuse 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 fuse for each of these systems, 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 development 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 placed 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 integrated 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 led 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

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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 introduce 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 ammunition weight, which will be include an increase to a payload of 8 20mm rounds.

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 to be safely disposed of in combat as necessary. The Point Detonation mode is default mode as a forethought 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 altitude 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 altitude (total 8 meters) at a density of 1 mg+ per cubic meter.

Additional munitions are being studied or developed, including HESH and Thermobaric munitions.

HESH (High Explosive, Squashing Head) munitions, also known as HEP (High Explosive Plastic), are an anti-armor technology. Rather than relying on penetration of the armor, these warheads instead are filled with plastic explosive and a detonator at the rear of the warhead. When they strike, the warhead crushes and ruptures, allowing the explosive to spread and flatten into a pancake shape on the struck surface, and then it detonates. The shockwave creates thusly then causes the inner surface of the armor to fragment and shear off, producing a spalling effect inside the vehicle. With lightly armored vehicles, these warheads can actually blow out a large plug of the armor in the process, opening a sizable hole in an otherwise sealed vehicle. HESH is rendered ineffective by spaced armor, as the fragments bounce around between the layers



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of armor. The small fragments can also be stopped by anti-spall shielding installed inside most modern MBTs.

Thermobaric munitions rely on the Fuel-Air Explosive concept. It creates a cloud of highly volatile aerosolized liquid or particulate solid explosive, then ignites it to produce an explosive effect that generates a significantly more powerful concussive force and an oxygen-starving vacuum. This technology, thanks to the way it can mold itself to things inside the cloud, is used for building demolitions as well as clearing anything from caves and bunkers to jungle landing zones.

When detonated, the cloud creates an explosive fireball of 400+ psi pressure and up to 3,000C temperatures, with a blast wave traveling at a speed of 9,500 feet per second. This blast wave creates a vacuum that both pulls loose objects and drags the burning fuel to create almost complete penetration of anything non-airtight within the blast radius. Human casualties typically suffer extensive burns and lung collapse.

A serious problem is that it can easily cause significant collateral damage and casualties, and after use of this technology in both Afghanistan and Iraq, there have been numerous calls to have it classified as a weapon of mass destruction, since some of the

effects, particularly the long duration high pressure wave and extreme heat, are similar to that of a low yield nuclear weapon. However, these weapons are not new. The United States initially developed them in the 1960's for use in Vietnam to clear landing zones, mine fields, and tunnel networks. The Soviets mastered the technology in a man-portable form in the late 60's with the RPO-A Shmel, which has been used in Chinese border conflicts, Afghanistan, and Chechnya.

Thermobaric ammunition for the XM-29 would by far be the smallest such weapon developed to date.

The latest significant change in the XM29 has been the price tag. Several years ago, when the system was unveiled to the public by Popular Mechanics, the estimated price was around \$20,000 with a target goal of between \$10,000 and \$12,000. The price actually dropped to \$14,000, then finally as low as \$10,000. Unfortunately, the price has since started climbing again, and is currently estimated at between \$15,000 and \$18,000 per unit. This is still significantly cheaper than the \$39,000 price tag for an equally equipped M4A1 carbine.

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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, SABR Compatible	RIF	+2	J	M, E	M995	0	30	2 [SS] Or [MB], 15 [A], 42 [C]	VR	600m	2.7	3.1	\$1,000
XM-29 SABR 20mm Cannon	RIF	+6	N	M,E	20x28mm	0	6	1 [SS]	RE	1000m	5.5	6.8	\$12,000
M1018 20x28mm HEAB	-	-	-	M,E	5D6, 5m	0	-	-	-	-	-	0.25	\$19
20 x 28mm Thermobaric	-	-	-	M,E	5D6, 15m	0	-	-	-	-	-	0.25	\$55
20 x 28mm HESH	-	-	-	M,E	PEN 2, 5D6, 1m	0	-	-	-	-	-	0.25	\$20
20 x 28mm CS	-	-	-	M,E	CS, 10x5m	0	-	-	-	500m	-	0.25	\$30
Special Rules	Items with italicized names have no existing data, and are therefore extrapolated from similar weapon systems.												

D20 System

[illegible]

FUDGE

Weapon	Shots	Rate of Fire	Range	Accy	Dmg	Cost	Notes
HK XM-8 Lightweight Assault Rifle, SABR Compatible	30	SA, A, C	Good	Good	4	\$1,000	
XM-29 SABR 20mm Cannon	6	SA	Superb	Superb	-	\$12,000	
M1018 20x28mm HEAB	-	-	-	-	8	\$19	5m radius
20 x 28mm Thermobaric	-	-	-	-	8	\$55	15m radius
20 x 28mm HESH	-	-	-	-	8	\$20	1m radius
20 x 28mm CS	-	-	-	-	-	\$30	10m x 5 m cloud, 5 m high
Special Rules	Items with italicized names have no existing data, and are therefore extrapolated from similar weapon systems.						

Action!

[illegible]

XM-107 LONG RANGE SNIPER RIFLE

The XM107 Long Range Sniper Program is one of the short term Future Combat System programs that offers a vivid look at how weapon selection competitions work. This program started a number of years ago with an RFI and a number of manufacturers submitted weapons for the program. Recently, a modified Barret M82A1M .50 Caliber "Light Fifty" rifle was selected as the Army's XM107 rifle. However, the program ran such a short period that it is still possible to easily obtain documentation on a number of the many different weapons submitted for the competition. Each of these weapons will be detailed later as a separate entry and data sheet. Here, we will detail the Barret M82A1.

The M82A1 was designed as a rifle for law enforcement sales, with the intended uses of Explosive Ordnance Disposal and to serve as a long range interdiction weapon. They suggest it is also useful as a light ocean-going watercraft defensive weapon, and a variety of sniper applications in military and law enforcement deployment.

The M82A1 operates using a short recoil principle. When the rifle is fired, the discharge delivers a considerable amount of thrust against the bolt face. This thrust transfers through the bolt lugs to the barrel extension and through the bolt body to the rear of the bolt carrier. This unique method of recoil management dissipates much of the firing shock, which might otherwise damage the rifle. By the time the bullet leaves the barrel, it has recoiled 13mm, at which point the recocking pin withdraws and resets the firing pin. At 25mm of travel, the bolt separates from the bolt carrier and barrel extension, transferring the energy of the barrel to the bolt carrier. The barrel's movement stops at 53mm. The bolt carrier continues moving to the rear, where the bolt becomes fully extended, the cartridge case is extracted and ejected, and the recoil process reverses. The barrel return spring returns the barrel to the forward battery position and the main return spring begins forcing the bolt carrier forward, where it strips a new round from the magazine before it returns to its own battery forward position. This, along with a muzzle brake that reduces recoil energy by 65%, results in a .50 BMG rifle that has a recoil measured as a hundred pounds, rather than a thousand pounds.

The weapon comes with an adjustable bipod, but can also be fitted to a soft mount pintle adaptor, allowing it to be fit to vehicle pintle mounts and to tripods. The rifle is fitted with iron sights and a 10x magnification telescopic sight which employs a ballistic reticle calibrated for the recommended ammunition types. The reticle can be adjusted for a point of impact anywhere from 500 to 1800 meters away. Barret suggests the weapon be used with APEI ammunition, then APHC1 and AP M8 ammunition, but any 12.7 x 99mm BMG load can be fired through the rifle.

The M82A1M, also known as the M82A3, is modified for use by the military. It varies from the M82A1 as follows:

- Monopod on the rear of the buttstock.
- Rear grip to assist in stabilizing the rifle.
- A 19 inch long MIL-STD-1913 rail mount with numbered slots for optical sights, night vision gear, and other accessories.
- Removable muzzle brake.
- Lightweight bolt carrier.
- Sight calibration for the Nammo Raufoss MK 211 round.
- Quick-release bipod with spiked feet.

The Marines replace the default 10x scope with an AN/PVS-12.2 Day/Night Sniper Sight. Powered by a pair of "AA" batteries, this 2.5 kg scope provides 16x magnification and the image enhancement of a generation 3 image tube.

The M82A2 Rifle was a bullpup format variant designed to be fired from the shoulder, rather than from a stable prone or braced position. It was meant to be used as an anti-helicopter weapon,

Weapon	XM107 Long Range Sniper Rifle				
Manufacturer	Barret Firearms Mfg		Year	2002-	
Nation	United States				
Caliber	.50 BMG		Mags	10	
Accuracy	Group			MOA	1.0
	Kill			Pen	
Velocity	853 m/s		Energy		
Weight	Empty	10.45kg	ROF	SS	45
	Loaded	14.28kg		MB	-
Length	1,142 mm			Burst	-
Range	Effective	1800 m		Auto	-
	Max.	6800 m		Cyclic	-
Notes	Loaded weight includes 2.5 kg for optical equipment.				

Weapon		Special Application Scoped Rifle, 12.7x99mm M82A1			
Manufacturer	Barret Firearms Mfg		Year	1986-	
Nation	United States		Mags	10	
Caliber	.50 BMG				
Accuracy	Group			MOA	2.0
	Kill			Pen	
Velocity	853 m/s		Energy		
Weight	Empty	13.4 kg	ROF	SS	45
	Loaded	17.23kg		MB	-
Length	1,549 mm			Burst	-
Range	Effective	1800 m	Auto		-
	Max.	6800 m	Cyclic		-
Notes	Loaded weight includes 2.5 kg for optical equipment.				

Weapon	M82A2 "Light Fifty" .50 Caliber Rifle				
Manufacturer	Barret Firearms Mfg		Year	1987-1992	
Nation	United States				
Caliber	.50 BMG		Mags	11	
Accuracy	Group			MOA	2.0
	Kill		Pen		
Velocity	853 m/s		Energy		
Weight	Empty	12.24kg	ROF	SS	45
	Loaded	16.07kg		MB	-
Length	1,409 mm			Burst	-
Range	Effective	1800 m	Auto		
	Max.	6800 m	Cyclic		
Notes	Loaded weight includes 2.5 kg for optical equipment.				

Weapon		Special Application Scoped Rifle, 12.7x99mm M82A3			
Manufacturer	Barret Firearms Mfg		Year	2002-	
Nation	United States				
Caliber	.50 BMG		Mags	10	
Accuracy	Group			MOA	1.5
	Kill			Pen	
Velocity	853 m/s		Energy		
Weight	Empty	13.6 kg	ROF	SS	45
	Loaded	17.43kg		MB	-
Length	1,448 mm			Burst	-
Range	Effective	1800 m		Auto	-
	Max.	6800 m		Cyclic	-
Notes	Also known as the M82A1M. Loaded weight includes 2.5 kg for optical equipment.				

useful against fast moving targets on the ground and in the air when fired from the shoulder. The weapon was not successful sales-wise and was soon dropped from production. The rifle was a bit odd, because the action extended over the shooter's soldier, more like an old WW2 era bazooka than a rifle.

Now, the XM107 is essentially a refurbished M82A1, fitted with a shorter barrel and a different muzzle brake, as well as a number of lightweight internal components. This results in a rifle that is a foot shorter and 10 pounds less than the M82A1M, but retains the accuracy of earlier versions of the M82 system. When war broke out

XM-107 LONG RANGE SNIPER RIFLE

in Afghanistan, the Army procured 50 units of the XM107 for deployment with Special Operations Forces operating with the 82nd and 101st Airborne divisions. Over the last two years, procurement has increased to the point where several hundred are in the field in both Afghanistan and Iraq. The Army plans to finish testing and officially deploy the weapon by the end of 2003. While the rifle itself has finished development, the optics for it are not. In May 2003, the Army began searching for new telescopic day sights and night vision equipment for the rifle. The day sight is expected to be a commercial

off-the-shelf model, while the night sight is expected to be a milspec 3rd generation image intensification scope, which optimally would attach to the selected day sight. Until the new night scope is completed, the rifle is fitted with a thermal sight.

Some other rifles that competed to become the XM107 were: DMCI XM107 .50 Caliber Rifle, EDM Arms Windrunner XM107 .50 Caliber Rifle, and the EDM Arms Windrunner XM107 .338 Lapua Rifle.



XM-107 LONG RANGE SNIPER RIFLE

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
XM107 Long Range Sniper Rifle	RIF	+5	N	M	.50 BMG	0	10	2 [SS]	VR	1800	10.45	14.28	\$8000
M82A1 Special Application Scoped Rifle	RIF	+3	N	M	.50 BMG	0	10	2 [SS]	VR	1800	13.4	17.23	\$7300
M82A2 "Light Fifty"	RIF	+3	N	M	.50 BMG	0	10	2 [SS]	VR	1800	12.24	16.07	\$7300
M82A3 Special Application Scoped Rifle	RIF	+4	N	M	.50 BMG	0	10	2 [SS]	VR	1800	13.6	17.43	\$7800
Special Rules													

D20 System

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XM109 BARRET PAYLOAD RIFLE

As development work on the Objective weapons programs reaches the test deployment phase, problems have cropped up along the way, delaying the deployment date for these weapons. It has brought about a need to develop interim weapon systems to fill the gap between now and then. With delays in the Objective Crew Served Weapon (OCSW) program, a need has been identified to develop an interim weapon system capable of firing the 25 x 59 mm OCSW cartridge being developed for the XM307. The military identified the need in mid-2002 and issued a requirement for a semiautomatic, magazine-fed weapon in this caliber, capable of being transported and fired by a single man. And since seeing the Russian AGS-17 30mm automatic grenade launcher, Barret had wanted to develop a similar type of grenade launcher based on their popular anti-materiel rifle platform, the M82.

With the 25x59mm OCSW ammunition, Barret could produce a new anti-materiel sniper rifle with almost the same range and accuracy of the .50 BMG caliber M82A1, but with far superior terminal effect, thanks to the HE and shaped charged AP rounds being developed for the XM307. Also, unlike the XM307, the Payload Rifle is dummied down to tradition sniper rifle "fire control systems", meaning no computerized fusing technology, but instead the preferred scopes, sights, and/or night vision equipment used by the shooter.

The XM107 Payload Rifle was required to use the lower receiver of the M82A1, so the bulk of the modifications to the M82A1 occur in the upper receiver and barrel. The primary change is the muzzle brake, which is so effective that if fit on a .50 caliber M82A1, the rifle would fail to cycle properly and jam before ejecting the spent casing. Second, the upper receiver is modified to reduce the bolt speed to around 250 inches per second, roughly the same velocity as the bolt in an M82A1, keeping the action at a speed that will not be so slow as to cause jams, failed extractions or stovepiping, and not be so fast as to cause case head separation. The solution currently in use is to insert a conversion kit into the upper receiver of the M82A1 that adds two extra barrel return springs and a pair of hydraulic buffers. This reduces the carrier and barrel velocities to a point that provides smooth extraction. However, since the Army only

Weapon	XM109 25mm Payload Rifle					
Manufacturer	Barret		Year	2002-		
Nation	United States					
Caliber	25 x 59mmB OCSW		Mags	4		
Accuracy	Group			MOA	1 ½	
	Kill			Pen		
Velocity	325 m/s		Energy			
Weight	Empty	13.86kg	ROF	SS	45	
	Loaded	14.86kg		MB	-	
Length	1166 mm			Burst	-	
Range	Effective	2000 m		Auto	-	
	Max.			Cyclic	-	
Notes						

uses peak recoil impulse to measure recoil levels, rather than relying on recoil as a function of time, the weapon is still considered to violate maximum levels established by the Army and is therefore too violent for regular use. Overall, the felt recoil is roughly the same as firing a 12 gauge shotgun with 3 ½ inch magnum cartridges, with no perceivable aftereffects after firing five rounds.

Currently, the only 25x59mm ammunition available are the TP or Training Practice rounds, which are ballistically matched to the specifications set forth for the as of yet undeveloped HEAB or High Explosive Airburst rounds. Even once the more advanced munitions are finally developed of the XM307, the XM109 Payload Rifle will have no need for such technologies as smart fusing. The weapon will perform in its role using a simple point detonating or impact fuse for the HE round and a point initiating base detonating fuse for the shaped charge round. The result of using such purely mechanical fuses is the weight and space savings which will make the munitions even more effective in their given task than the OCSW's smart munitions. Barret is working with a third party independent ammunition design and development corporation. With the low technology of these experimental munitions and the relatively small problems remaining in the rifle, one can expect that the XM109 could be fielded by the U.S. military as early as 2005, well ahead of the rollout of the XM307 or XM29 weapon systems.



XM 109 BARRET PAYLOAD RIFLE

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
XM109 Payload Rifle	RIF	+5	N	M,E	25x59mm	0	4	1 [SS]	VR	2000	13.86	14.86	\$7500
OCSW 25x59mm HEAB Munition	-	-	-	M,E	7D6, 15m	-	-	-	-	-	-	0.25	\$25
XM109 25x59mm HE Munition	-	-	-	M,E	7D6, 5m	-	-	-	-	-	-	0.25	\$20
XM109 25x59mm SLAP Munition	-	-	-	M,E	PEN 2, 7D6	-	-	-	-	-	-	0.25	\$25
Special Rules	These statistics are based upon extrapolation from similar weapon systems.												

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XM-307 25MM CREW SERVED WEAPON

After early design competitions, the PRIMEX Technologies entry was selected for further development as the Objective Crew Served Weapon (OCSW). The weapon is intended as a two man portable light support weapon intended to provide a high probability of suppression and incapacitation against light vehicles, slow moving aircraft, and watercraft to a range of one kilometer and against protected personnel up to a range of two kilometers. The weapon system would then replace the MK 19 40mm Automatic Grenade Launcher and the Browning M2 Heavy Machine Gun.

Development progressed according to a three year contract, with the delivery of three working prototypes, 1,000 rounds HE ammunition and 3,000 rounds TP ammunition in the third quarter of 1998. The weapon was to undergo technical and safety testing until 2001, then enter the engineering and manufacturing development phase between 2002 and 2006, with First Unit Equipped to occur during 2007, and an estimated 25,000 units would eventually be fielded. Unfortunately, due to certain development problems, the HE test ammunition was dumb fused since the smart fusing technology and fire control system were incomplete, a problem that has continued as late as February 2003, when Barret introduced the XM109 Payload Rifle.

The goal is to produce a gun weighing about 10.4 kg, with a softmount cradle and no ballast stable tripod weighing 4.1 kg and a fire control system weighing 2.1 kg, for a total of 16.6 kg. The three prototype systems weighed in at 18.6 kg each, a mere 2 kg overweight. This is still vastly less than the Mk 19 AGL, which weighs 35.3 kg alone, not including a 20 kg M3 tripod or 9.1 kg lightweight tripod. It is also vastly lighter than the M2 Browning .50 Caliber HB QCB Heavy Machine Gun, which weighs in at 38.2 kg without a tripod. The XM307 package breaks down into two modules. One module is the gun, FCS and softmount cradle, weighing 13.88 kg, and the other is the tripod and two boxes of ammunition, weighing 15.42 kg. In their latest incarnation, each ammunition container holds 37 rounds of ammunition, at a weight of 14 lbs, or 6.36 kg. However, the style and capacity of the ammunition containers are still not finalized.

The weapon operates by firing "out of battery", which means that the weapon discharges a shell while the recoiling parts are moving forward within the gun's housing. This leads to a drastic reduction of recoil to a point of about 1/10 what it would otherwise be, but it also vastly slows the rate of fire. Fired in semi-automatic or full automatic mode, the weapon's natural cyclic rate is a mere 260 rounds per minute, which makes the weapon ineffective against airborne targets. The weapon still requires an arced trajectory, similar to the

Weapon	M-9				
Manufacturer	Beretta		Year	1984-	
Nation	Italy, United States				
Caliber	9mm Parabellum		Mags	15	
Accuracy	Group	11.2 cm @ 50 m		MOA	
	Kill			Pen	
Velocity	325 m/s		Energy		
Weight	Empty	0.86 kg	ROF	SS	45
	Loaded	1.16 kg		MB	-
Length	217 mm				
Range	Effective	50 m		Auto	-
	Max.			Cyclic	-
Notes	US Army pays \$601 per unit, the US Marines pay \$586 per unit.				

MK 19 AGL. However, it is far less severe. When fired to 2,000 meters, the XM307 rounds reach an apogee of 100 meters, while the MK 19 AGL firing the same distance reaches an apogee of 400 meters.

The fire control system is a "full solution" system that operates by day or night and in all weather conditions. The system is designed to compensate for target range, atmospheric conditions, and weapon tilt, automatically setting the fuse and resetting the fuse of the loaded round each time a target is ranged. Many features are shared with the XM29 FCS, including the target tracking system devised by OCTEC in the UK.

The 25mm ammunition will be available in HE and AP service ammunition, plus ballistically matched TP training practice ammunition. Each round consists of a projectile weighing 132 grams and a cartridge weighing 167 grams, for a total round weight of 299 grams. The armor piercing ammunition will consist of a shaped charge warhead consisting of 15 grams of LX-14 explosive, providing penetration of 51mm with a 51 mm standoff. The high explosive ammunition consists of a steel fragmenting warhead body 2.4mm thick and filled with LX-14 explosive, with the fuse housed in an aluminum body. The fuse is remote settable with muzzle velocity correction capacity and several modes of operation. Set through electrical induction, the round can explode on a time delay or point detonation. Point detonation can be disabled for firing through brush, delayed to detonate after passing through light obstruction, or "superquick" detonation on impact. The rounds will also possess a self-destruct mode, which can be expected to trigger nine seconds after the round is fired, about the time it takes to travel 2,000 meters. Unfortunately, the fuses and fire control system were still incomplete as of February 2003, so the XM307 program is more than a year behind schedule.



XM-307 25MM CREW SERVED WEAPON



XM-307 25MM CREW SERVED WEAPON

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
XM-307 25mm Crew Served Weapon	AR	+5	J	M	9mm P	0	15	2 [SS], 2 [A], 13 [C]	RE	2000	18.6	1.16	\$263
OCSW 25x59mm HEAB Munition	-	-	-	M,E	7D6, 15m	-	-	-	-	-	-	0.3	\$25
OCSW 25x59mm AP Munition	-	-	-	M, E	PEN 2, 7D6	-	-	-	-	-	-	0.3	\$25
XM109 25x59mm HE Munition	-	-	-	M,E	7D6, 5m	-	-	-	-	-	-	0.3	\$20
XM109 25x59mm SLAP Munition	-	-	-	M,E	PEN 2, 7D6	-	-	-	-	-	-	0.3	\$25
Special Rules	Items with italicized names are extrapolated from similar weapon systems.												

D20 System

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XM-312 12.7MM HEAVY MACHINE GUN

One goal of the Army's Future Combat Systems program is to replace a number of aging weapon systems with a single new weapon. Namely, the Browning M2 HMG and the Mk. 19 AGL would be replaced by a single weapon system, the Objective Crew Served Weapon. However, due to development problems with the electronic FCS and the complex electronically fused ammunition, the military was been forced to issue a request for an interim weapon system in 2000, as the M2s were rapidly reaching a state of deterioration that demands many of them be replaced as soon as possible. The interim replacement needs to be at least as effective as the M2.

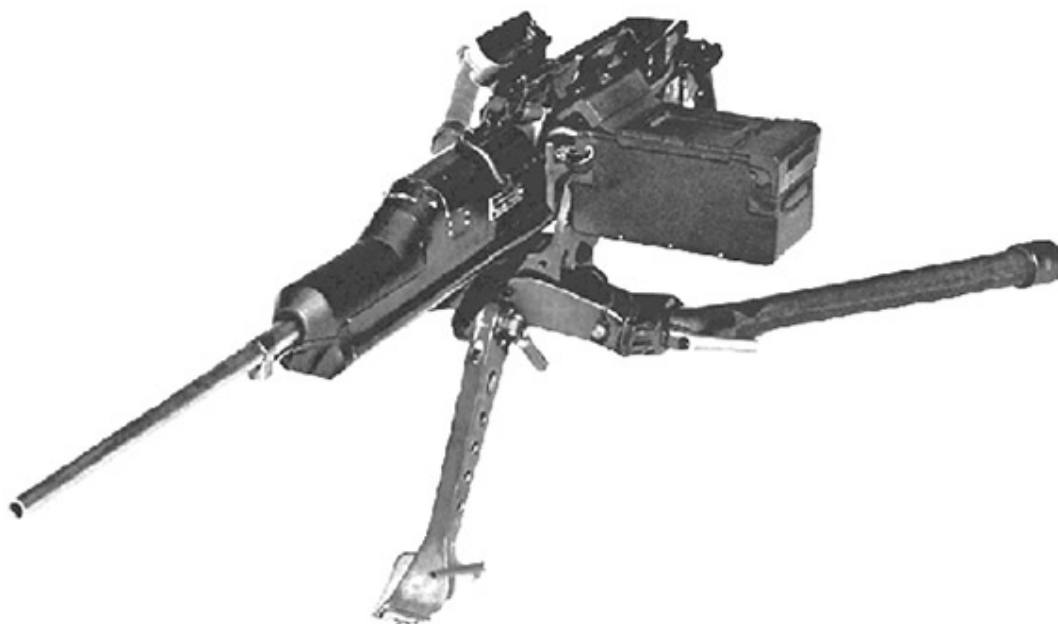
General Dynamics, the manufacturer developing the OSCW put forth a very interesting proposition; since the hardware development for the gun portion of the OCSW is finished, why not simply redevelop the weapon to fire the .50 BMG cartridge? After all, Barret was working on converting a .50 BMG rifle to 25mm, so why not try going the other way? Needless to say, the Army bought into the idea.

The XM-312 is based on the XM307 Crew Served Weapon. Externally, the two weapons appear to be identical. Internally, they may be so similar that when the XM307 is ready to enter service, it may be as simple as changing the barrel and a few other components on the weapon. According to Colonel James Moran, commanding officer of the PEO Soldier program (the latest incarnation of the Land Warrior Program), this is indeed the case. To quote: "We have one weapon that does two things: it fires the 25mm family of ammo and the same weapon, with changing fire parts, will fire a .50 cal, so we are going to have a weapon that is going to replace the M2 and the Mk 19." The weapon uses a novel approach to the typical gas operated recoil system. The bolt group moves within the barrel extension, which in turn moves inside the gun housing, along with the gas block and barrel. This arrangement results in an action that loads and fires a round from an open bolt while the entire recoil group is moving forward. The shot is forced to overcome the forward inertia of the recoil group before recoil can

Weapon				
XM312 Lightweight Heavy Machine Gun				
Manufacturer	General Dynamics		Year	2002-
Nation	United States			
Caliber	.50 BMG		Mags	105 belted
Accuracy	Group	15.9 cm @ 400 m		MOA
	Kill			Pen
Velocity	325 m/s		Energy	
Weight	Empty	19 kg	ROF	SS 45
	Loaded	33.56kg		MB -
Length	217 mm		Burst	2
Range	Effective	50 m	Auto	40
	Max.		Cyclic	260
Notes	US Army pays \$601 per unit, the US Marines pay \$586 per unit.			

adversely affect the weapon. This, along with an effective muzzle brake, greatly reduces the recoil generated by the weapon. This in turn allows the weapon to be far lighter, but also makes the weapon difficult and expensive to manufacture. The system also creates a secondary effect of greatly reducing the cyclic rate of fire to a mere 260 rounds per minute, less than half that of the M2. The practical rate of fire will be around 40 rounds per minute. This means the weapon will be used strictly to engage ground targets, as such a low rate of fire makes it very ineffective against fast flying targets. The weapon is metallic link belt fed from the left or right.

The XM312 12.7mm Lightweight Heavy Machine Gun is by far the lightest .50 BMG machine gun developed to date. With its tripod, the gun weighs a mere 19 kilograms, a considerable accomplishment, considering a belt of 105 rounds of ammunition weighs in at 14.56 kg. The XM-312 is expected to begin entering service in 2005 on a limited basis, long before the XM307 is entered into service. The weapon is currently awaiting the conclusion of development of a machine gun optical sight and night vision equipment that will allow it to fire reliably and accurately out to a range of two kilometers, day or night. This is apparently the only think preventing it from entering service immediately.



XM-312 12.7MM HEAVY MACHINE GUN

Cyberthriller

Weapon	Type	ACC	Con	Av	Caliber	DM	Ammo	Rate of Fire	Rel	Effect. Range (meters)	Weight Empty (kg)	Weight Loaded (kg)	Cost
XM312 LW Heavy MG	HVY	+4	N	M,E	.50 BMG	0	105	2 [A], 13 [C]	RE	2000	19	33.56	\$22,000
Special Rules													

D20 System

Weapon	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Mag	Size	Weight	Purchase DC	Restriction
M9 Service Pistol	2d12	20	Ballistic	660	A	105B	Lrg	73 lb	29	Mil (+3)
Special Rules	Weapon of quality. Gains a +1 equipment bonus to hit.									

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Weapon	Shots	Rate of Fire	Range	Accy	Dmg	Cost	Notes
M9 Service Pistol	105	SA, A, C	Superb	Great	9	\$22,000	Well Made
Special Rules							

Action!

Weapon	Dmg	Type	Acc	Rmod	STR Min	Max Rng	RoF	Amm	Wt (kg)	Cost	Notes
M9 Service Pistol	9d6	P/L	+2	+3	4	2000	2/13	105	33.56	\$22000	
Special Rules:											

XM-320 ENHANCED GRENADE LAUNCHER MODULE

The XM320 is the result of the US Navy issuing a Request for Information on behalf of the United States Special Operations Command (USSOCOM). The requirement is for an Enhanced Grenade Launcher Module, or EGLM, which can be affixed under barrel on host rifles and carbines, or be used as a stand-alone weapon. The call for this EGLM was induced by serious shortcomings in the M203 that became apparent during recent hostilities.

The complaints about the M203 are:

- Barrel mount design degrades host weapon accuracy.
- Quick detach mount is fragile and complex.
- Cannot load ammunition longer than 138mm.
- Unreliable in surf, sand and mud.
- Inaccurate, requiring excess expense in ammunition and training time.
- Current ammunition stockpiles are inaccurate and aging.

The object is to produce an improved weapon and ammunition for exclusive use by SOCOM, with consideration for adoption by the USMC and FBI. It is not intended as a general service replacement for the M203, though it can be expected to function as the primary under barrel weapon for the XM8 Lightweight Assault Rifle.

The XM320 will be a weapon designed for quick change mounting to a picatinny rail, rather than a custom under barrel mounting interface. It will also require some manner of day/night sighting with range finding capability. The weapon needs to be fully compatible with all existing US and NATO 40mm low velocity launched grenades, as well as possessing provisions to upgrade in capability to handle as-of-yet undeveloped programmable 40mm LV grenades. Finally, the weapon must function as a stand-alone weapon system, requiring some manner of pistol grip/butt stock accessory. The trigger, breech lock, and safety mechanisms must be

Weapon	M-9				
Manufacturer	Beretta		Year	1984-	
Nation	Italy, United States		Mags	15	
Caliber	9mm Parabellum				
Accuracy	Group	11.2 cm @ 50 m		MOA	
	Kill			Pen	
Velocity	325 m/s		Energy		
Weight	Empty	0.86 kg	ROF	SS	45
	Loaded	1.16 kg		MB	-
Length	217 mm			Burst	-
Range	Effective	50 m		Auto	-
	Max.			Cyclic	-
Notes					

placed for ambidextrous use and in a fashion that reduces or eliminates accidental activation. Finally, rather than the forward sliding breech opening of the M203, the EGLM requires an alternative breech opening method that allows the loading not only of the shorter US 40 x 46mm LV grenades, but the longer NATO standard grenades as well.

The main contender is the Heckler & Koch AG-C. The AG-C is a short grenade launcher, designed to be fitted on shorter assault rifles, like the M4A1 carbine. Working on the M1913 rail specification, the weapon can be mounted or dismounted in seconds. The AG-C's aluminum barrel tilts open to the side, completely clear of the magazine and any protrusion of the weapon, allowing the soldier to load any US or NATO standard low velocity 40mm grenade. The trigger features a double-action mechanism and the weapon is entirely ambidextrous. Finally, and possibly most importantly, it features a built-in pistol grip, with a detachable butt stock, allowing the weapon to easily function in a stand-alone capacity.



XM-320 ENHANCED GRENADE LAUNCHER MODULE

Cyberthriller

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Weapon	Dmg	Type	Acc	Rmod	STR Min	Max Rng	RoF	Amm	Wt	Cost	Notes
XM320 Enhanced Grenade Launcher Module	-	-	0	-	3	400	1	1	1.77	\$700	
Special Rules:	Damage and maximum range should be determined by the 40 x 46mm low velocity grenade ammunition used in the weapon, since the range of the various types of grenades varies.										

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ALTERNATE REALITIES PUBLICATIONS CATALOG

Big Bang: The Mostly Illustrated RPG Guide to Modern Weapons

Big Bang is the ultimate RPG guide to firearms. Providing factual data on the weapons presented, Big Bang provides statistics for a number of royalty-free, licensed game systems. 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, labeled 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 ambush 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 and technical reference, as well as thoughts and theories on both terror and countering it. Available Fall 2003.

MAD Graftiti

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 multi-system guide to all things technological. 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.

A Year of Living Dangerously

The challenge is a tough one. Your task is to protect the life of a top rated SimWire star during the filming of his next film. Unfortunately, the star also like activism and seeks to expose conspiratorial problems in the world with more tenacity than an investigative reporter. His next flick revolves around fending off attempts to assassinate him and exposing which one of his too numerous enemies is behind the plot. Can you survive a year of guarding this twit in order to get the big payoff at the end? Release date TBA.

SubOrbita

We live in an ever-expanding world that is rapidly approaching a point where it will grow well beyond the borders imposed by its own gravity. Take a look into human exploration of space, as it is now, and as it hopefully will be in a future where space travel is almost as easy as getting into the family car. Release date TBA.

SubAqua

Even as we expand into the airless vacuum of space, so shall we expand into the airless environments of the ocean depths that can kill us as easily as space. Explore the technologies of life beneath the ocean waves. Release date TBA.

A.A. 100

Welcome to the year 100 A.A. That's 100 After Armageddon. The world as we knew it vanished in the hazy clouds of various weapons of mass destruction. However, the world struggles on and the human species survives, one way or another... Take a journey into the fourth timeline developed for CyberThriller

BIG BANG

The Mostly Illustrated RPG Guide to Modern Weapons

Big Bang is an open-ended series of reference books designed for avid players of roleplaying games, especially in the modern and near future genres. Each volume presents factual data and information on a number of weapons, including details of the weapon's history, along with statistics allowing immediate use in a number game systems. The factual, real world data can be used to easily adapt the presented weapons to a wide range of game systems.

This series is not designed as a stand-alone game. It requires the use of core rules from another game system.

**Requires the use of the Action! System™ Core Rules,
published by Gold Rush Games™**

**Requires the use of the d20 Modern™ Roleplaying Game,
published by Wizards of the Coast, Inc.**

