

## **GRENADA LAUNCHERS**

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## FN FN40GL EGL

Notes: Developed from the F2000's grenade launcher, the FN40GL was designed specifically for use with the SCAR-16 and SCAR-17. Rumor has it that FN has plans to mate it to other assault and battle rifles, but I have not been able to confirm this. The FN40GL EGL (Enhanced Grenade Launcher) can fire all forms of 40mm NATO Low-Velocity grenades, including the newer longer versions. It may be mounted under a SCAR-16 or SCAR-17, but can also be attached to a gripstock to allow it to be used as a dedicated grenade launcher, without the rifle. In either case, the FN40GL attaches to the SCAR or gripstock by use of MIL-STD-1913 rails and dual locking clamp levers, which provides for a solid attachment. No special tools are required to mount or dismount the FN40GL. Construction of the FN40GL is largely of polymer, with some steel working parts and an aluminum barrel inside a polymer shroud. The barrel slides forward, then swings to the left or right for loading and reloading. This motion is ambidextrous; one can choose to swing the barrel to the left or right freely or according to the tactical situation. Control levers are also ambidextrous, being a simple crossbolt safety on either side of the trigger module. A further manual safety switch is found directly behind the breech closure; this locks the firing pin, while the first safety locks the trigger. The only control which is not ambidextrous is the lever to open the breech; it is on the left side near the muzzle, and is in approximately the same place as that of an M-203. (An ambidextrous breech opening lever was attempted during development, but dropped as mechanically too difficult.) The trigger module is placed low on the FN40GL; this placement allows the shooter to keep his trigger finger in easy reach of both the SCAR's trigger and the FN40GL's trigger. Unfortunately, the trigger is double-action, long, and heavy; this is deliberate, as it does much to prevent accidental discharges. The FN40GL comes with a specially-designed leaf sight for use out to about 250 meters; longer shots or indirect fire are meant to be sighted with whatever special sights are on the SCAR or the gripstock. The leaf sight folds so that it can stay on the rifle or gripstock and still not get in the way of optics, or be used in conjunction with optics. The barrel is 9.6 inches, and the aluminum of the barrel is designed to withstand much abuse and wear. Differences in mounting techniques make the weight when on a SCAR-16 and a SCAR-17 a little different; firing stats are the same, however. Recoil stats listed below are for on rifle/with gripstock.

The gripstock is made largely of light alloy, covered by polymer. The gripstock has an almost-full-length MIL-STD-1913 rail above the grenade launcher at the top and on each side of the "upper receiver." The gripstock includes the same pistol grip as on the SCAR, attached to the rest of the gripstock and interfacing with the grenade launcher. The stock slides into the weapon inside the MIL-STD-1913 rails, and has a buttstock that includes a sling swivel in the assault position and a butt with a rubber recoil pad.

This weapon is rumored to be in limited use by some special operations troops, including combat use, but this has not been confirmed.

Twilight 2000 Notes: The FN40GL is not available in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
<b>FN40GL (On SCAR-16)</b>	40mm NATO Low-Velocity	2.96 kg	1 Internal	\$307
<b>FN40GL (On SCAR-17)</b>	40mm NATO Low-Velocity	3 kg	1 Internal	\$307
<b>FN40GL (With Gripstock)</b>	40mm NATO Low-Velocity	5.92 kg	1 Internal	\$457

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>FN40GL</b>	SS	APERS	1/2	Nil	21	Nil
	SS	CHEM	1/2	Nil	93	380
	SS	Ferret	1/2	Nil	93	380
	SS	Flash-Bang	1/2	Nil	93	380
	SS	Flechette	1/2	Nil	42	Nil
	SS	HE	1/2	Nil	93	380
	SS	HEAT	1/2	Nil	93	380
	SS	HEDP	1/2	Nil	93	380
	SS	HE Airburst	1/2	Nil	93	380
	SS	ILLUM	1/2	Nil	93	380
	SS	WP	1/2	Nil	93	380

## FN F2000 Grenade Launcher

Notes: This is not intended to be used as a standalone weapon; it is specifically for use attached to the F2000 assault rifle. It is not a full-sized grenade launcher by NATO standards, but accomplishes the purpose of augmenting the infantryman's firepower. It is a very light weapon that can be integrated with the F2000's fire control system when that is used. It has a double-action trigger that allows the firer to attempt to fire a round again if it does not fire the first time due to a primer malfunction.

Twilight 2000 Notes: Like the F-2000, this weapon was "unofficially" combat-tested by French, US, and British troops around the world.

Weapon	Ammunition	Weight	Magazine	Price
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<b>F2000 GL</b>	40mm NATO Low-Velocity	1 kg	1 Internal	\$299
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<b>Weapon</b>	<b>ROF</b>	<b>Round</b>	<b>SS</b>	<b>Burst</b>	<b>Range</b>	<b>IFR</b>
<b>F2000 GL</b>	SS	APERS	1	Nil	20	Nil
	SS	CHEM	1	Nil	90	370
	SS	Ferret	1	Nil	90	370
	SS	Flash-Bang	1	Nil	90	370
	SS	Flechette	1	Nil	40	Nil
	SS	HE	1	Nil	90	370
	SS	HEAT	1	Nil	90	370
	SS	HEDP	1	Nil	90	370
	SS	HE Airburst	1	Nil	90	370
	SS	ILLUM	1	Nil	90	370
	SS	WP	1	Nil	90	370

## SA-80 Grenade Launcher

Notes: This weapon is similar in concept to the M-203 and other underbarrel grenade launchers, but is specifically designed for mounting under the L-85 series of assault rifles. It may also be mounted under the barrel of the German G-36 and G-36K, and with some work can be fitted to other assault rifles. It was developed from the German HK-79, and operates largely in the same manner as that launcher. It never saw very much use, however.

Weapon	Ammunition	Weight	Magazine	Price
SA-80 GL	40mm NATO Low-Velocity	1.89 kg	1 Internal	\$450

Weapon	ROF	Round	SS	Burst	Range	IFR
SA-80 GL	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	420
	SS	Ferret	1	Nil	100	420
	SS	Flash-Bang	1	Nil	100	420
	SS	Flechette	1	Nil	90	Nil
	SS	HE	1	Nil	100	420
	SS	HEAT	1	Nil	100	420
	SS	HEDP	1	Nil	100	420
	SS	HE Airburst	1	Nil	100	420
	SS	ILLUM	1	Nil	100	420
	SS	WP	1	Nil	100	420

## Poly Technologies W-87 AGL

Notes: In the early 1980s, the Chinese had been able to obtain some copies of the Russian AGS-17 automatic grenade launcher. Though impressed by the AGS-17, they still felt it was too large, heavy, and cumbersome to be an effective support weapon for their purposes; they also felt they could make some improvements in the round itself. They essentially took the core idea and went back to the drawing board, developed a lighter action, made their new weapon drum-fed instead of belt-fed, and fitted it with a bipod, stock, and pistol grip as well as giving it fittings for mounting on a tripod. (The W-87 can be fired from the standard Pact Medium Tripod, or a special tripod that allows both ground support and antiaircraft fire, with a weight of 17.7 kilograms.) Recoil is also manageable enough that it can be fired from the hip like a machinegun. The approximately 20-inch barrel is tipped by a compact muzzle brake, with the bipod at the point of balance; the magazines are side-mounted on the right side. A simple optical sight is mounted above the receiver. The butt has a rubber recoil pad.

While the W-87 yielded satisfactory results, the Chinese felt it was far from perfect. It was less than reliable, and still had a little too much kick, with the muzzle brake giving little or no benefit. The result was the QLZ-87. It was approximately the same size as the W-87, but a bit stronger and heavier; the muzzle brake of the W-87 was also replaced with a simpler, yet more effective, slotted muzzle brake. The QLZ-87 uses gas operation that is actually quite similar to the M-16's operation, suitably scaled up. Another new tripod was developed; this one weighs a mere 8 kilograms. It should be noted that the 15-round drum of the QLZ-87 cannot be used on the W-87.

Despite the improvements, the Chinese still weren't satisfied with the QLZ-87. It was thought that the QLZ-87 was too heavy, that the side-mounted drums were too cumbersome, that the 15-round drum in particular was too big, and that in general the QLZ-87 was just not an ergonomically efficient weapon. Further improvements led to the QLB-06 (usually referred to as the QLZ-87B for export purposes). Though internally, the QLB-06 is basically the same design as the QLZ-87, externally it looks like a different weapon. In short, it does not have the crude appearance that earlier versions have. The receiver is of aluminum alloy, and a lot of polymer is also used to lighten the weapon. Perhaps the largest difference is that due to the light weight, the QLB-06 is not an automatic weapon, like its predecessors; this also fits better with the QLB-06's small drums. These drums are also tucked in a small well underneath the receiver, streamlining the weapon. The optical sight is of higher power than earlier versions and mounted on a MIL-STD-1913 rail. The QLB-06 is currently being issued to Chinese forces, though the QLZ-87 is also said to still be in medium-scale use. The QLB-06 cannot use magazines designed for the W-87 or QLZ-87.

Twilight 2000 Notes: In the Twilight 2000 timeline, examples of the W-87 could be found in the hands of US, Canadian, and ROK forces, and as far away as Europe, Alaska, Canada, and Iran in the hands of Bloc and NATO forces by 2000. The other versions of this weapon do not exist in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
<b>W-87</b>	35mm Chinese Low-Velocity	12 kg	6, 12 Drum	\$1140
<b>QLZ-87</b>	35mm Chinese Low-Velocity	14 kg	6, 9 Drum, 12 Drum, 15 Drum	\$1140
<b>QLB-06</b>	35mm Chinese Low-Velocity	9.1 kg	4 Drum, 6 Drum	\$1443

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>W-87 (Hand/Bipod/Tripod)</b>	5	HE	2/1/1	5/2/1	80/110/170	Nil/535/825
	5	HEAT	2/1/1	5/2/1	80/110/170	Nil/535/825
	5	HEDP	2/1/1	5/2/1	80/110/170	Nil/535/825
<b>QLZ-87 (Hand/Bipod/Tripod)</b>						

	5	HE	2/1/1	4/2/1	80/110/170	Nil/535/825
	5	HEAT	2/1/1	4/2/1	80/110/170	Nil/535/825
	5	HEDP	2/1/1	4/2/1	80/110/170	Nil/535/825
<b>QLB-06 (Hand/Bipod)</b>	SA	HE	2/1	Nil	80/110/170	Nil/535/825
	SA	HEAT	2/1	Nil	80/110/170	Nil/535/825
	SA	HEDP	2/1	Nil	80/110/170	Nil/535/825

## **RBG-6**

Notes: This is a direct copy of the South African MGL Mark 1, identical in almost every way to that weapon. Soon after the breakup of Yugoslavia, the Croatian Army managed to procure 300 MGLs from an unnamed Middle Eastern source (probably the United Arab Emirates); they then decided to copy it and sell it without a license. The RBG-6 includes a copy of the Occluded Eye Gunsight, and uses a dark sandblasted finish instead of the light sand-colored finish of the MGL. The other differences are minor weight and dimension differences.

Twilight 2000 Notes: The Croatians have their MGLs, but are not manufacturing the RBG-6.

Weapon	Ammunition	Weight	Magazine	Price
<b>RBG-6</b>	40mm NATO Low Velocity	5.6 kg	6 Cylinder	\$824

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>RBG-6</b>	SA	APERS	0	Nil	40	Nil
	SA	CHEM	0	Nil	100	400
	SA	Ferret	0	Nil	100	400
	SA	Flash-Bang	0	Nil	100	400
	SA	Flechette	0	Nil	75	Nil
	SA	HE	0	Nil	100	400
	SA	HEAT	0	Nil	100	400
	SA	HEDP	0	Nil	100	400
	SA	HE Airburst	0	Nil	100	400
	SA	ILLUM	0	Nil	100	400
	SA	WP	0	Nil	100	400

## **RGB-1**

Notes: This is an underbarrel grenade launcher in use by Croatian forces. It was purpose-designed for the AK-series of weapons, but with modification, can be fitted to other assault rifles and battle rifles. The breech section hinges out to the left for loading. A sore point among Croatian soldiers is the exposed trigger, occasionally leading to accidental fire; however the weapon was preferred over the GP-25, since it used the greater variety of 40mm NATO rounds.

Weapon	Ammunition	Weight	Magazine	Price
<b>RGB-1</b>	40mm NATO Low Velocity	1.46 kg	1 Internal	\$405

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>RGB-1</b>	SS	APERS	1	Nil	40	Nil

	SS	CHEM	1	Nil	100	410
	SS	Ferret	1	Nil	100	410
	SS	Flash-Bang	1	Nil	100	410
	SS	Flechette	1	Nil	80	Nil
	SS	HE	1	Nil	100	410
	SS	HE Airburst	1	Nil	100	410
	SS	HEAT	1	Nil	100	410
	SS	HEDP	1	Nil	100	410
	SS	ILLUM	1	Nil	100	410
	SS	WP	1	Nil	100	410



## **M-26A2**

Notes: This weapon first appeared in the hands of communist rebels in Honduras in the mid-1980s. It has since been seen in use by Nicaragua, by Shining Path rebels in Peru and Columbia, and in the hands of rebels in El Salvador, as well as a few sightings in the hands of the Russians of Division Cuba. Its ultimate origin is Cuba, who came up with the weapon in the early 1980s. It proved to be a very unreliable weapon, producing many misfires and accidental fires when dropped or bumped. The weapon has a non-folding buttstock that can be removed; however, as recoil is quite stiff, it is not recommended to fire the M-26A2 in this manner.

Twilight 2000 Notes: Some of these weapons have been spotted in the hands of the Russians of Soviet Division Cuba.

Weapon	Ammunition	Weight	Magazine	Price
<b>M-26A2</b>	30mm Russian Medium-Velocity	3 kg	1 Internal	\$305

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>M-26A2 (with/without stock)</b>	SS	HE	5/6	Nil	120	740
	SS	HEDP	5/6	Nil	120	740

## **M-30**

Notes: This Cuban weapon is similar in concept to the Russian GM-94, being a pump-action grenade launcher, and the inspiration for the Russian weapon may have been the M-30. The M-30 is of simple stamped steel and wood construction, with crude leaf sights and a rubber recoil pad on the stock. It does not have the reliability defects of the M-26A2 and is in wide use by Cuban and Nicaraguan forces, as well as by shining Path rebels, rebels in Honduras, El Salvador, Belize, and Mexico, and drug lords' forces in South America.

Twilight 2000 Notes: Some 20 examples of this weapon were brought to Texas by the Soviet Division Cuba.

Weapon	Ammunition	Weight	Magazine	Price
<b>M-30</b>	30mm Russian Medium-Velocity	5.9	3 Tubular	\$360

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>M-30</b>	PA	HE	3	Nil	120	740
	PA	HEDP	3	Nil	120	740

## Maadi

Notes: This derivative of the M-203 is used by Egyptian forces in place of the more normal GP-25 fitted to AK-series weapons. With minimal modification, it can also be fitted to other assault rifles. Also available for this weapon is a snap-on gripstock for use away from an assault rifle. It is constructed from light Duraluminum metal.

Weapon	Ammunition	Weight	Magazine	Price
<b>Maadi GL</b>	40mm NATO Low-Velocity	1 kg (2.5 Kg with Gripstock)	1 Internal	\$380 (\$405 with Gripstock)

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Maadi</b>	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	400
	SS	Ferret	1	Nil	100	400
	SS	Flash-Bang	1	Nil	100	400
	SS	Flechette	1	Nil	75	Nil
	SS	HE	1	Nil	100	400
	SS	HEAT	1	Nil	100	400
	SS	HE Airburst	1	Nil	100	400
	SS	HEDP	1	Nil	100	400
	SS	ILLUM	1	Nil	100	400
	SS	WP	1	Nil	100	400

## AG-36

Notes: The HK-69A1 and HK-79 are well-liked by German troops. However, with foreign deployments in Afghanistan, Kosovo, and potentially other hot spots, the troops have begun to complain about the weight of the two launchers, and the clumsy downward break of the HK-79 (something that is not a good idea when firing from the prone position). By 1998, work had already begun on its replacement, the AG-36, and this was accelerated after German deployments in Kosovo. The AG-36 can be deployed on or off a rifle, and opens to the side instead of the front. In addition, the use of more advanced materials means that the AG-36 is considerably lighter than the HK-69A1. The AG-36 is not often deployed off of a weapon, since it has no stock. It has its own pistol grip and trigger mechanism; the trigger pull weight is described by one firearms expert as "horrendous." The AG-36 is specifically designed for mounting on the G-36, G-41, L-85, M-16, M-4, C-7, and C-8, but can be adapted for other assault, or battle rifles or submachineguns with the use of a kit. The AG-36 is a bit on the bulky side due to its modular construction, integral pistol grip, and side-opening mechanism.

The US version, the M-320, needs some additional elaboration. It is for the most part identical to the standard AG-36, however, does have several differences making it sort of a unique version of the AG-36. The side-opening mechanism of the M-320 opens a bit more than the standard AG-36, allowing the use of several other special 40mm rounds (particularly some pyrotechnic rounds and the HUNTER reconnaissance round) which are too long to insert into a standard AG-36. The interface kit is more flexible, allowing the M-320 to be mounted on many more weapons in the US military arsenal, to include semiautomatic shotguns and even weapons such as the M-249 SAW and M-240 GPMG. (The interface rail is basically a slightly-modified MIL-STD-1913 rail.) Finally, the M-320 can use a stock/pistol grip kit developed by the Picatinny Arsenal, allowing it to be used as a stand-alone weapon, as a sort of stockless "grenade pistol," or with a snap-on sliding stock. When used off of another weapon, the interface rail can be used to mount a variety of add-on sights.

Twilight 2000 Notes: This weapon does not exist in the Twilight 2000 timeline.

Merc 2000 Notes: This weapon is not available until 2005.

Weapon	Ammunition	Weight	Magazine	Price
<b>AG-36</b>	40mm NATO Low-Velocity	1.5 kg	1 Internal	\$507

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>AG-36</b>	SS	APERS	1	Nil	30	Nil
	SS	CHEM	1	Nil	100	390
	SS	Ferret	1	Nil	100	390
	SS	Flash-Bang	1	Nil	100	390
	SS	Flechette	1	Nil	55	Nil
	SS	HE	1	Nil	100	390
	SS	HEAT	1	Nil	100	390
	SS	HEDP	1	Nil	100	390
	SS	HE Airburst	1	Nil	100	390
	SS	ILLUM	1	Nil	100	390
	SS	WP	1	Nil	100	390

## HK-69A1 Granatpistole

Notes: This weapon is designed to be a light and handy launcher for low-velocity grenades. It is meant to cover the gap between the maximum hand grenade range and the typical minimum mortar range. It is a single-shot break open weapon of the same concept (but not design or appearance) as the US M-79. The weapon breaks open after depressing an unlocking lever at the rear of the receiver (which looks like an oversized hammer – the HK-69 in fact looks like it has two hammers, one smaller than the other). A fancy spent shell ejector or extractor was not used – instead, a small portion of the rear of the barrel near the breech is cut out to allow the shooter to grasp the shell. (This would become a standard design feature for Heckler & Koch low-velocity grenade launchers.) The external hammer allows for the weapon to be cocked before fire, easing the trigger pull, or an immediate second attempt to fire a misfiring shell. The HK-69A1 is supplied with a sliding retractable stock; the weapon may be fired with or without the stock extended, but recoil with the stock retracted can be a bit hard. Sights consist of a folding ladder rear and a large hooded post front; when folded, the rear ladder sight becomes a peep sight for quick shots at short to medium range.

Weapon	Ammunition	Weight	Magazine	Price
<b>HK-69A1</b>	40mm NATO Low-Velocity	2.62 kg	1 Internal	\$500

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>HK-69</b>	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	420
	SS	Ferret	1	Nil	100	420
	SS	Flash-Bang	1	Nil	100	420
	SS	Flechette	1	Nil	90	Nil
	SS	HE	1	Nil	100	420

	SS	HEAT	1	Nil	100	420
	SS	HEDP	1	Nil	100	420
	SS	HE Airburst	1	Nil	100	420
	SS	ILLUM	1	Nil	100	420
	SS	WP	1	Nil	100	420

### HK-79

Notes: The HK-79 is a German-made grenade launcher similar in design and concept to the M203, and can be attached to most Western European assault and battle rifles or fitted with a stock and pistol grip. Like the HK-69, construction is largely of steel instead of the M-203's alloy construction. Unlike the M-203, the HK-79's barrel swings downward from the weapon to which it is attached upon opening; this allows for rounds of any length to be slid into it (other than high-velocity 40mm rounds). The HK-79 opens with an oversized latch on the left side of the receiver, again looking like some sort of oversized, oddly-placed hammer. The HK-79 does have a sort of external hammer; it is a T-shaped handle at the rear of the HK-79's receiver. That said, in most installations, there is very little room to actually use this external cocking mechanism. German assault rifles that have an HK-79 attached are normally appended with the nomenclature "TGS" (such as G-41A2TGS), leading to the mistaken impression that TGS is the name of this grenade launcher.

Weapon	Ammunition	Weight	Magazine	Price
<b>HK-79</b>	40mm NATO Low-Velocity	1.5 kg	1 Internal	\$450

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>HK-79 (On/Off Weapon)</b>	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	420
	SS	Ferret	1	Nil	100	420
	SS	Flash-Bang	1	Nil	100	420
	SS	Flechette	1	Nil	90	Nil
	SS	HE	1	Nil	100	420
	SS	HEAT	1	Nil	100	420
	SS	HEDP	1	Nil	100	420
	SS	HE Airburst	1	Nil	100	420
	SS	ILLUM	1	Nil	100	420
	SS	WP	1	Nil	100	420

### H&K Grenade Machine Gun (GMG)

Notes: This weapon began manufacture in early 1997. It was developed to be a two-man load. This weapon uses 40mm NATO HV ammunition, but may not fire normal 40mm grenade ammunition. The GMG has many safeties designed to prevent accidental fire or injure the users. Fieldstripping does not require tools, and the entire mechanism of the weapon slides out on rails for routine maintenance. The GMG uses the standard NATO Heavy Tripod.

Weapon	Ammunition	Weight	Magazine	Price
<b>HK Grenade Machine Gun</b>	40mm NATO High-Velocity	39.9 kg	32 Belt	\$1695

Ammo: 40mm NHV; Weight: (without tripod) 39.9 kg; Magazine: 32B; Price: \$1695 (-/-)

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>HK Grenade Machine Gun</b>	5	HVHE	0	2	200	2030
	5	HVHEDP	0	2	200	2030
	5	HVCC	0	2	230	Nil

### HK Grenade Machine Weapon (GMW)

Notes: This is a lightened version of the Grenade Machine Gun described above. It was designed to be used by infantry, and can be more readily toted by foot soldiers than the GMG. It is otherwise similar to the GMG. The GMW uses the NATO medium tripod.

Weapon	Ammunition	Weight	Magazine	Price
<b>HK Grenade Machine Weapon</b>	40mm NATO High-Velocity	25.9 kg	32 Belt	\$2120

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>HK GMW</b>	5	HVHE	0	2	200	2030
	5	HVHEDP	0	2	200	2030
	5	HVCC	0	2	230	Nil

## SACO/Bofors/Computer Devices Striker

Notes: This is the first of a new generation of automatic grenade launchers that uses computerized aiming and special microchip-controlled grenades to produce enhanced casualty-causing abilities. Another consideration was weight; the Striker (not to be confused with the South African AGL of the same name) is considerably lighter than grenade machine guns of earlier generations. It also incorporates features to control recoil without having to use a soft mount.

The heart of the Striker is its computer controlled sight and the special ammunition (known as Programmable Air Burst). The sight was developed by Computer Devices of Canada, the ammunition by SACO of the US, and the launcher itself by Bofors of Sweden. The sight interrogates the intended target, the gunner tells the sight which type of target it is (personnel in the open, in a trench, light vehicles, etc.) and the sight supplies the proper aiming point. It also sets the fuzes on the ammunition to detonate at the proper moment (impact for light vehicles and buildings, overhead for personnel in the open or trenches, etc.) All this happens in microseconds. The gunner can override any decision the computer makes, or fire without computer assistance at all (this means the special ammunition functions as standard ammunition). The computerized sight incorporated an 8x day sight and a image intensifier, as well as a ballistic computer.

The Striker can be stripped without tools. It is made largely of light alloy and polymer, except for high-stress components such as the barrel, bolt, firing pin, etc.

Twilight 2000 Notes: This weapon does not exist.

Merc 2000 Notes: This weapon does not appear in any significant quantity until 2009.

Weapon	Ammunition	Weight	Magazine	Price
<b>Striker</b>	40mm NATO High Velocity and Programmable Air Burst	17.5 kg (GL), 6.6 kg (Sight), 9 kg (Tripod)	50 Belt	\$1599 (GL), \$2600 (Sight), \$140 (Tripod)

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Striker</b>	3	HVCC	1	2	339	Nil
	3	HVHE	1	2	203	2025
	3	HVHEDP	1	2	203	2025
	3	PAB	1	2	203	2025

## Beretta GLX-160

Notes: The GLX-160 is an underbarrel grenade launcher designed for use with the new ARX-160 assault rifle and is also part of the *Soldato Futuro* program, a large small arms modernization program currently being conducted by the Italian Army. In addition to its use with the still-evolving ARX-160, Albanian special forces use some 35 of them (along with their 100 new ARX-160s), and the GLX-160 is also being used as an underbarrel grenade launcher for the AR-70/90 assault rifle by the Italian Army.

The GLX-160 can use an 11-inch or 16-inch barrel – interchangeably, with longer and shorter barrels able to be mounted easily by the individual soldier in the field. The GLX-160 system also includes a snap-on gripstock that has a sliding buttstock, a raised comb, and a thick rubber recoil pad; the stock is based on the stock of the HK/Benelli M-4 shotgun (used by the US as the M-1014 shotgun). The stock is connected to the rest of the gripstock by thick, strong aluminum-alloy spar, with the rest of the gripstock providing a mount for the GLX-160's barrel and firing mechanism, a polymer pistol grip, a monolithic MIL-STD-1913 rail above the barrel, sling swivels, and a folding set of iron sights, including a leaf sight and a front quick-engagement sight. Construction is primarily of polymer and high-strength aluminum alloys. The 11-inch barrel is meant for underbarrel use; the 16-inch barrel is primarily meant for use only as a support weapon with the gripstock attached. (If nothing else, a 16-inch underbarrel launcher would be quite unwieldy, but there is nothing to prevent this type of installation.) The GLX-160 uses a double-action mechanism, and numerous passive safeties ensure that the GLX-160 cannot fire unless the breech is locked properly, the round is loaded properly inside the barrel, the GLX-160 is properly mounted on the rifle or gripstock, and basically everything is right. Loading, reloading, and unloading is done by simply pulling down on the barrel while sliding it forward; it moves forward enough to allow for the loading of newer types of low-velocity 40mm rounds that are longer in length than the standard 40x46mm round. Attachment to a firearm is via a MIL-STD-1913 rail interface.

Twilight 2000 Notes: the GLX-160 is not available in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
<b>GLX-160 (11" Barrel w/o Gripstock)</b>	40mm NATO Low-Velocity	1 kg	1 Internal	\$351
<b>GLX-160 (11" Barrel w/Gripstock)*</b>	40mm NATO Low-Velocity	2.2 kg	1 Internal	\$553
<b>GLX-160 (16" Barrel w/o Gripstock)</b>	40mm NATO Low-Velocity	1.45 kg	1 Internal	\$508
<b>GLX-160 (16" Barrel w/Gripstock)*</b>	40mm NATO Low-Velocity	2.65 kg	1 Internal	\$710

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>GLX-160 (11")</b>	SS	APERS	1	Nil	22	Nil
	SS	CHEM	1	Nil	97	390
	SS	Ferret	1	Nil	97	390
	SS	Flash-Bang	1	Nil	97	390
	SS	Flechette	1	Nil	43	Nil
	SS	HE	1	Nil	97	390
	SS	HEAT	1	Nil	97	390
	SS	HEDP	1	Nil	97	390
	SS	HE Airburst	1	Nil	97	390
	SS	ILLUM	1	Nil	97	390
	SS	WP	1	Nil	97	390
<b>GLX-160 (16")</b>	SS	APERS	1	Nil	25	Nil
	SS	CHEM	1	Nil	109	435
	SS	Ferret	1	Nil	109	435
	SS	Flash-Bang	1	Nil	109	435
	SS	Flechette	1	Nil	48	Nil
	SS	HE	1	Nil	109	435

	SS	HEAT	1	Nil	109	435
	SS	HEDP	1	Nil	109	435
	SS	HE Airburst	1	Nil	109	435
	SS	ILLUM	1	Nil	109	435
	SS	WP	1	Nil	109	435

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\*Bulk for the 11" barrel version with gripstock is 2/4; with the 16" barrel, it is 3/5.

## **PALLAD/PALLAD-D**

Notes: This is a Polish grenade launcher used in place of the BG-15 in the Polish armed forces. It uses a 40mm round developed for the weapon. The PALLAD is the weapon used on the AK series; the PALLAD-D is a standalone weapon with a gripstock.

Twilight 2000 Notes: This is a rather uncommon weapon, even in Poland.

<b>Weapon</b>	<b>Ammunition</b>	<b>Weight</b>	<b>Magazine</b>	<b>Price</b>
<b>PALLAD</b>	40mm PALLAD Low-Velocity	(PALLAD) 1.55 kg, (PALLAD-D) 2.3 kg	1 Internal	(PALLAD) \$350, (PALLAD-D) \$550

<b>Weapon</b>	<b>ROF</b>	<b>Round</b>	<b>SS</b>	<b>Burst</b>	<b>Range</b>	<b>IFR</b>
<b>PALLAD</b>	SS	Ballistic	1	Nil	30	Nil
<b>PALLAD</b>	SS	CHEM	1	Nil	100	390
<b>PALLAD</b>	SS	FRAG-HE	1	Nil	100	390
<b>PALLAD</b>	SS	WP	1	Nil	100	390



## RomArm AG-40

Notes: This Romanian 40mm grenade launcher replaces the BG-15 in Romanian service. It fires Western-style 40mm grenades, and is used with AK-series weapons.

Twilight 2000 Notes: This weapon does not exist in the Twilight 2000 World.

Weapon	Ammunition	Weight	Magazine	Price
<b>AG-40</b>	40mm NATO Low-Velocity	1.3 kg	1 Internal	\$375

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>AG-40</b>	SS	APERS	2	Nil	35	Nil
	SS	CHEM	2	Nil	100	400
	SS	Ferret	2	Nil	100	400
	SS	Flash-Bang	2	Nil	100	400
	SS	Flechette	2	Nil	70	Nil
	SS	HE	2	Nil	100	400
	SS	HEAT	2	Nil	100	400
	SS	HEDP	2	Nil	100	400
	SS	HE Airburst	2	Nil	100	400
	SS	ILLUM	2	Nil	100	400
	SS	WP	2	Nil	100	400

## RomArm AGA-40

Notes: This Romanian automatic grenade launcher is based upon the AGS-17, but fires a high-velocity 40mm round developed just for this weapon (the export version fires 40mm NATO HV). The AGA-40 is normally mounted on a tripod (PLT). The AGA-40 is very light and easy to transport, but is limited by its small drum magazine.

Weapon	Ammunition	Weight	Magazine	Price
<b>AGA-40</b>	40mm Romanian High-Velocity	23 kg	10 Drum	\$640
<b>AGA-40</b>	40mm NATO HV	24.2 kg	10 Drum	\$740

Weapon	ROF	Round	Blk	SS	Burst	Range	IFR

<b>AGA-40 (Romanian)</b>	5	HE-FRAG	5	1	1	220	3260
	5	HE HC	5	1	1	220	3260
<b>AGA-40 (NATO)</b>	5	HVHE	6	1	2	180	1800
	5	HVHEDP	6	1	2	180	1800
	5	HVCC	6	1	2	30	N/A

### Bazalt DP-64

Notes: This weapon was designed to protect ships and ports from combat swimmers and frogmen. It is a twin over-and-under barrel grenade launcher with a selection of rounds available. Chief among these is the concussion round, designed to have double the concussion value underwater. An antipersonnel round was also developed to allow use against swimmers that come up on land. This launcher has been copied by China.

Weapon	Ammunition	Weight	Magazine	Price
DP-64	45mm Russian Medium-Velocity	10 kg	2 Internal	\$1210

Weapon	ROF	Round	SS	Burst	Range	IFR
DP-64	SA	FG-45 APERS	1	Nil	140	860
	SA	CG-45 Concussion	1	Nil	140	860
	SA	SG-45 ILLUM	1	Nil	140	860

### Bazalt MRG-1

Notes: Sort of the same idea as the DP-64 but...more, the MRG-1 is a practically ground-mounted MRL able to fire salvos of high-caliber grenades for the defense of shipping and ports. "Grenade launcher" is sort of a misnomer here, as the MRG-1 fires what are essentially miniature depth charges; the HE grenades can be set at launch to explode up to 100 meters in the air or 40 meters underwater. The MRG-1 is also able to use any of the DP-64's grenades. The MRG-1 has seven launch tubes for grenades; the launchers are under manual remote control, and the operator may be up to 30 meters away. Launches may be done as individual shots under operator control, or as a 7-round salvo with one push of a button. The launch tubes are situated in a cluster, with one central tube and six others surrounding it. The operator may select which tube to launch, useful to fire flares followed by HE grenades.

The DP-65 is a relative of the MRG-1; it is a more elaborate affair (though it has only six launch tubes), with the ability to be controlled by one or both of two control boxes situated within 100 meters of the launcher. It can also automatically react to and launch against incursions into a preset target zone within 100 meters to the front of the tripod launch tube cluster. Firing characteristics are the same as for the MRG-1.

Weapon	Ammunition	Weight	Magazine	Price
MRG-1	55mm Russian Medium-Velocity	53 kg	7 Internal	\$5010
DP-65	55mm Russian Medium-Velocity	132 kg	6 Internal	\$12050

Weapon	ROF	Round	SS	Burst	Range	IFR
MRG-1	SA	RG-55 HE	N/A	N/A	168	1030
	SA	GRS-55 ILLUM	N/A	N/A	168	1030
	SA	FG-45 APERS	N/A	N/A	140	860
	SA	CG-45 Concussion	N/A	N/A	140	860
	SA	SG-45 ILLUM	N/A	N/A	140	860

### KBI AGS-30

Notes: The AGS-30 began replacing the AGS-17 in Russian service in 1994. The AGS-30 is a much simpler weapon than the AGS-17, using some 40% less parts, and is much lighter than the AGS-17. Other differences include only one rate of automatic fire, though again the cyclic rate is low enough that a gunner can squeeze off short bursts and single shots with a minimum of practice. The operation is blowback, using a heavy buffer, bolt, and sear; in addition, the AGS-30 uses a counter-recoil buffer to further decrease recoil, and the bolt uses long recoil. Cocking is by a simple lever. The same PAG-17 2.7x sight as the AGS-17 is used, along with backup iron sights. The lighter weight of the weapon decreases the standard crew for the AGS-30 to two men. A variant, the AG-30, is designed for mounting on vehicular mounts or tripods without any modifications, but does not have the PAG-17 sight. The AGS-30 fires the same rounds as the AGS-30, and can also fire two additional rounds – the VOG-30, with a larger explosive and propellant charge, and the GPD-30, an enhanced fragmentation round.

Weapon	Ammunition	Weight	Magazine	Price
AGS-30	30mm Russian Medium Velocity	16 kg (with Tripod)	30 Belt	\$1120

Weapon	ROF	Round	SS	Burst	Range	IFR
AGS-30	5	HE	0	1	140	1325
	5	HEDP	0	1	140	1325

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The operation is blowback, using a heavy buffer, bolt, and sear; in addition, the AGS-30 uses a counter-recoil buffer to further decrease recoil, and the bolt uses long recoil. Cocking is by a simple lever. The same PAG-17 2.7x sight as the AGS-17 is used, along with backup iron sights. The tripod is a new lightweight model weighing only 5.7 kilograms. The lighter weight of the weapon decrease the standard crew for the AGS-30 to two men. A variant, the AG-30, is designed for mounting on vehicular mounts or tripods without any modifications, but does not have the PAG-17 sight. The AGS-30 fires the same rounds as the AGS-30, and can also fire two additional rounds – the VOG-30, with a larger explosive and propellant charge, and the GPD-30, an enhanced fragmentation round.

Weapon	Ammunition	Weight	Bulk	Magazine	Price
<b>AGS-30</b>	30mm Russian Medium Velocity	10.8 kg	5	30 Belt	\$1120

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>AGS-30</b>	5	HE	1	2	140	850
	5	HEDP	1	2	140	850
	5	VOG-30 HEDP	1	2	112	680
	5	HE-FRAG	1	2	140	850

#### KBI GM-94

Notes: Despite the capabilities of the GM-94, this pump-action grenade launcher was actually designed for use by the Russian equivalent of police SRT teams, and came into military use relatively recently. The GM-94 is basically a greatly-enlarged RM-93 shotgun, and operates in a similar manner – one pumps the barrel forward to jack a round into the chamber (and to eject any fired shell), and back again to lock the barrel and cock the weapon. The barrel is pulled almost halfway forward to load the tubular magazine atop the weapon. The barrel is not only heavily ribbed externally, it also has two hand stops to aid in working the action and gripping the weapon. Construction is primarily of steel, with a stock that can be swung up and over the weapon to fold it. When folded, the stock may also be used as a carrying handle. The ammunition is peculiar to the GM-94, and not used by any other weapon. Though the tubular magazine can normally hold four rounds, if it has thermobaric rounds (whether one or as many as three), the magazine can hold only three rounds, since the thermobaric grenades are longer than other types of ammunition.

Twilight 2000 Notes: This weapon does not exist in the Twilight 2000 timeline.

Merc 2000 Notes: This is a popular terrorist weapon in the Merc 2000 timeline.

Weapon	Ammunition	Weight	Bulk	Magazine	Price
<b>GM-94</b>	43mm Russian Low-Velocity	4.5 kg	4/5	4 Tubular*	\$590

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>GM-94</b>	PA	Baton	2	Nil	50	Nil
	PA	CS	2	Nil	100	420
	PA	Thermobaric	2	Nil	100	420
	PA	Flash-Bang	2	Nil	100	420
	PA	FRAG	2	Nil	100	420
	PA	HE	2	Nil	100	420
	PA	HEAT	2	Nil	100	420
	PA	ILLUM	2	Nil	100	420
	PA	Rubber Slug	2	Nil	100	420
	PA	Star Cluster	2	Nil	100	320

\*If even one thermobaric round is loaded into the magazine, only three rounds may be carried.

#### KBI RGS-50

Notes: The RGS-50 is a single-shot shoulder-fired grenade launcher designed primarily for use by police, but also with some military applications (and called the RGS-50M in that guise). The RGS-50 uses primarily a tubular break-open mechanism with an attached pistol grip and firing mechanism, along with a detachable shoulder stock and forward foregrip. Sights are an adjustable ladder rear and post front. And the weapon is broken open by a latch behind of the rear sight. The trigger mechanism has a safety switch. The detachable shoulder stock has a rubber recoil pad. The RGS-50 can be fired without the stock or even the foregrip if desired; the RGS-50's stock weighs 2 kilograms, and the foregrip 0.2 kilograms. On military versions, the foregrip folds backwards, and the sights are a bit more precise.

Weapon	Ammunition	Weight	Bulk	Magazine	Price
<b>RGS-50</b>	50mm Russian Low-Velocity	6.3 kg	4/5	1 Internal	\$685

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>RGS-50 (Stock/No Stock)</b>	SS	CHEM	1/3	Nil	110	430
		Flash-Bang	1/3	Nil	110	430
		Beanbag	1/3	Nil	60	Nil

HE-FRAG	1/3	Nil	110	430
HEAT	1/3	Nil	110	430
HESH	1/3	Nil	110	430

### KBTM AGS-17 Plamya

Notes: The Plamya (Flame) was first seen in use in Afghanistan in about 1977, though it had been in Russian and Warsaw Pact service since about 1975. It is generally issued at the company level in infantry and combat engineer units, and is meant to provide a massive volume of high-explosive fire during assaults. Construction is largely of steel; the firing mechanism allows only for variable rates of automatic fire, but the maximum cyclic rate is slow enough for a gunner to get single shots with a minimum of practice. Recoil is blowback with a hydraulic recoil damper. The charging handle is a handle attached to a wire cable. The firing control levers fold for transport. Though the AGS-17 is fed by 30-round belts, experienced AGS-17 gunners normally keep the first round loop open due to problems with first-round feed reliability.

AGS-17 variants have also been found mounted in vehicle turrets as well as on pintle mounts, and in chin turrets and as door guns on helicopters (helicopter-mounted Plamyas are normally known as AG-17A's instead of the AGS-17). Other mounts include a mounting with a coaxial NSV machinegun on a high-angle mount for use in mountainous areas, and a remote control AGS-17 known as the 6S5 Mius that allows one gunner to control up to 4 AGS-17s at once, aimed by a laser rangefinder. The standard AGS-17 is normally fitted with a 2.7x sight, and is mounted on a 12-kilogram tripod, though earlier AGS-17 tripods were of heavier and clunkier construction and weighed 17 kilograms. The AGS-17 has proliferated throughout former Russian client states, and has also been copied by China.

Weapon	Ammunition	Weight	Bulk	Magazine	Price
AGS-17	30mm Russian Medium Velocity	18 kg	5	30 Belt	\$1368

Weapon	ROF	Round	SS	Burst	Range	IFR
AGS-17	2/5	HE	1	1/2	140	850
	2/5	HEDP	1	1/2	140	850

### TsKIB SOO 6G-30 (RG-6)

Notes: This weapon was developed in response to a Russian Army need for a multishot grenade launcher for use in Chechnya. It is basically a modified GP-25 firing assembly with a rotating cylinder mechanism behind the barrel and a sliding stock with a thick recoil pad. The 6G-30 is, however, not designed to be fired with the stock in the forward position. The barrels in the rotating cylinder are rifled, while the single central barrel is not. The weapon is wound when reloading like a clock using a folding crank at the rear of the cylinder. The cylinder assembly hinges to allow for reloading.

Early production 6G-30s had a defect, in that the weapon does not always fire on a given cylinder; any grenade is 2% likely not to fire, over and above the normal chance for misfire during catastrophic failure. Grenades that do not fire are not defective; they may be reloaded and may then fire at normal probability, again with a 2% chance of misfire. This is a defect of the weapon and not the rounds. Newer production improvements are believed to have eliminated this problem.

In addition to the types of rounds the GP-25 may fire, the 6G-30 can also fire a tactical flechette round called the Gvozd (Nail) and the GRD-40 extended-duration smoke round.

This weapon was not issued to line units, but instead only to Spetsnaz and Alpha teams.

Twilight 2000 Notes: This weapon does not exist in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Bulk*	Magazine	Price
6G-30	40x44 Russian Low-Velocity	6.2 kg	3/4	6 Cylinder	\$625

Weapon	ROF	Round	SS	Burst	Range	IFR
6G-30	SA	CHEM	1	Nil	90	380
	SA	HE	1	Nil	90	380
	SA	HEDP	1	Nil	90	380
	SA	ILLUM	1	Nil	90	380
	SA	Flechette	1	Nil	30	Nil

\*The 6G-30 cannot be fired with the stock folded.

### TsKIB SOO GP-25/GP-30 Koster

Notes: The GP-25 is a single-shot, muzzle-loaded grenade launcher of simple design and compact dimensions. The GP-25 (also known as the BG-15, BG-1, or AK-GL) was designed specifically for use with AK-series weapons (but will also fit most foreign-made AK-derivatives with handguards about the same shape as the Russian AK series, as well as the AN-94), and clamps in place below the handguard, the area of barrel up to the gas block, and the very front of the receiver. The GP-25 includes a rudimentary pistol grip, as well as a grenade launcher sight atop the gas tube. Service with the Russians began in 1978.

Grenades are slid into the muzzle of the grenade launcher and held in place by a spring-loaded latch. Inserting a grenade cocks the launcher and also engages a safety that is removed by a thumb latch. The GP-25 comes with a rubber recoil pad that can be

slipped over the butt of the grenadier's rifle. (Again, this assumes that the dimensions of the rifle's butt are approximately the same as that of Russian AK-series weapons.) Other parts of the interface gear help protect the rifle itself against the recoil of the GP-25. The stubby barrel of the GP-25 is a mere 8.07 inches long, with the entire weapon being only 12.72 inches long. Firing may be done in direct fire or in indirect fire by bracing the butt on the ground against the grenadier's foot.

The GP-30 was designed to simplify production, but the new production procedures had the side-effect of lightening the weapon. The GP-30 has a simplified sight that is moved to the right side of the weapon. It is otherwise identical to the GP-25 for game purposes.

Both of these weapons can be fired separately from a rifle – but as they are light in weight, have only rudimentary pistol grips, and no provision for stocks, recoil is quite stiff and fire is inaccurate (one level more difficult).

The GP-95 was designed specifically for use with the OTs-14 Groza assault rifle, but can also be used on the A-91 and 9A91. The primary difference is in the mounting gear, which is incompatible with other assault rifles.

Weapon	Ammunition	Weight	Bulk	Magazine	Price
GP-25/GP-95	40x47 Russian Low-Velocity	1.5 kg	2	1 Internal	\$282
GP-30	40x47 Russian Low-Velocity	1.3 kg	2	1 Internal	\$282

Weapon	ROF	Round	SS	Burst	Range	IFR
GP-25 (On/Off Rifle)	SS	CHEM	2/5	Nil	90	360
	SS	HE	2/5	Nil	90	360
	SS	ILLUM	2/5	Nil	90	360
	SS	Jumping Frag	2/5	Nil	90	360

## 40AGL

Notes: This is an automatic grenade launcher in common use by mercenaries and by several military forces in the Pacific Rim. The weapon can mount a variety of optical and computerized sights and may be mounted on an NHT, pintle mounts, vehicle and turret mounts, or naval mounts. It is often mounted on Singapore M-113s in place of the M-2HB, as well as other Singapore armed vehicles.

Weapon	Ammunition	Weight	Magazine	Price
40AGL	40mm NATO High Velocity	33 kg (41 kg with Softmount)	50 Belt	\$1235 (\$1485 with Softmount)

Weapon	ROF	Round	SS	Burst	Range	IFR
40AGL	5	HVHE	1	2	200	1980
	5	HVHEDP	1	2	200	1980
	5	HVCC	1	2	180	Nil
40AGL (Softmount)	5	HVHE	0	2	200	1980
	5	HVHEDP	0	2	200	1980
	5	HVCC	0	2	180	Nil

## 40GL

Notes: This Singapore-made weapon was widely exported and used by many mercenaries and by the Singapore military. It may be mounted on a rifle or used as a stand-alone weapon. The barrel is swung to the side for loading. The safety catch is automatically engaged when the weapon is opened for loading, and must be manually switched off before firing.

Weapon	Ammunition	Weight	Magazine	Price
40GL	40mm NATO Low Velocity	1.95 kg (2.35 kg with Stock)	1 Internal	\$380 (\$410 with Stock)

Weapon	ROF	Round	SS	Burst	Range	IFR
40GL	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	400
	SS	Ferret	1	Nil	100	400
	SS	Flash-Bang	1	Nil	100	400
	SS	Flechette	1	Nil	70	Nil
	SS	HE	1	Nil	100	400
	SS	HEAT	1	Nil	100	400
	SS	HEDP	1	Nil	100	400

	SS	HE Airburst	1	Nil	100	400
	SS	ILLUM	1	Nil	100	400
	SS	WP	2	Nil	100	400



## AGL Striker

Notes: This South African automatic grenade launcher mounts on a NATO heavy tripod. The weapon has been designed to minimize recoil, and may feed from the left or right. The weapon may also be mounted in a vehicle or on a helicopter.

Twilight 2000 Notes: The AGL Striker was just being introduced at the beginning of the Twilight War, but high rates of production ensued and more of these grenade machineguns were available than might otherwise be indicated.

Weapon	Ammunition	Weight	Magazine	Price
AGL Striker	40mm NATO High Velocity	29 kg	50 Belt	\$2000

Weapon	ROF	Round	SS	Burst	Range	IFR
AGL Striker	5	HVCC	0	2	140	Nil
	5	HVHE	0	2	190	1930
	5	HVHEDP	0	2	190	1930

## Armscor MGL Mark 1

Notes: The MGL, also known as the MGL-40, is a 6-round MGL (Multiple Grenade Launcher) made by Armscor of South Africa. It is similar in design to the Armsel Striker, with a top-folding stock, forward pistol grip, and revolving cylinder magazine. Built largely of steel, the MGL has a folding stock which may be put straight out for normal use, in partially-down position for indirect fire, and folded over the top for storage, carrying, or snap-shots. The MGL is essentially built in two halves, with the rear rotating to the left to allow the cylindrical magazine to be loaded. After loading, the halves are rotated back into position and the cylinder would like the old Thompson drum magazines. (In game terms, this means an extra phase must be taken after loading the weapon before it may be fired.) This is a slower method of reloading, but also allows the trigger pull weight to be greatly lessened. The MGL is normally topped with the Armson Occluded Eye Gunsight, which may be used for both direct and indirect fire, is more precise, and less fragile than most grenade launcher leaf sights.

The troops using the MGL applaud its firepower (it is sometimes called the "super-blooper"), but do not like the weight and bulk. Nonetheless, the MGL is produced under license in Israel by IMI, and has recently been picked up for use by the US Marines in Iraq and Afghanistan. (It is believed that the Marines are buying theirs from IMI.)

Weapon	Ammunition	Weight	Magazine	Price
MGL Mark 1	40mm NATO Low Velocity	5.3 kg	6 Revolver	\$825

Weapon	ROF	Round	SS	Burst	Range	IFR
MGL Mark 1	SA	APERS	0	Nil	40	Nil
	SA	CHEM	0	Nil	100	400
	SA	Ferret	0	Nil	100	400
	SA	Flash-Bang	0	Nil	100	400
	SA	Flechette	0	Nil	75	Nil
	SA	HE	0	Nil	100	400
	SA	HEAT	0	Nil	100	400

	SA	HEDP	0	Nil	100	400
	SA	HE Airburst	0	Nil	100	400
	SA	ILLUM	0	Nil	100	400
	SA	WP	0	Nil	100	400

### **Improved M-79**

Notes: South Africa has a large number of M-79 grenade launchers, and starting in 1995, began to upgrade them to a more modern specification. The Improved M-79 was also sold to many countries using the M-79, as an upgrade kit and as new weapons. The Improved M-79 replaces the fixed wooden buttstock with a folding buttstock, the same as the one found on the R-4 assault rifle (the South African version of the Galil). A pistol grip and synthetic forestock are added. Perhaps the best upgrade is the replacement of the M-79s leaf sights with an Occluded Eye Gunsight, a 3.5x sight designed for the vibration of low-velocity grenade launchers (the same as the one mounted on the Milkor grenade launcher below). All surfaces are coated with an anticorrosion coating, and permanent lubrication is provided for moving parts.

Weapon	Ammunition	Weight	Magazine	Price
<b>Improved M-79</b>	40mm NATO Low Velocity	2.9 kg	1 Internal	\$645

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Improved M-79</b>	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	420
	SS	Ferret	1	Nil	100	420
	SS	Flash-Bang	1	Nil	100	420
	SS	Flechette	1	Nil	90	Nil
	SS	HE	1	Nil	100	420
	SS	HEAT	1	Nil	100	420
	SS	HEDP	1	Nil	100	420
	SS	HE Airburst	1	Nil	100	420
	SS	ILLUM	1	Nil	100	420
	SS	WP	1	Nil	100	420

### **Milkor**

Notes: This 40mm grenade launcher is one of the standards in South African service. It is related to the Stopper (see below). It breaks open like a shotgun for reloading, and is similar in design to the German HK-69 grenade launcher. The weapon includes a 3.5x sight designed for use on low-velocity grenade launchers, and is not damaged by the vibration of grenade launchers. The stock folds for close quarters combat.

Twilight 2000 Notes: Production rates for this launcher were never high and limited quantities are available.

Weapon	Ammunition	Weight	Magazine	Price
<b>Milkor</b>	40mm NATO Low Velocity	3.7 kg	1 Internal	\$635

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Milkor</b>	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	410
	SS	Ferret	1	Nil	100	410
	SS	Flash-Bang	1	Nil	100	410
	SS	Flechette	1	Nil	85	Nil
	SS	HE	1	Nil	100	410
	SS	HEAT	1	Nil	100	410
	SS	HEDP	1	Nil	100	410
	SS	HE Airburst	1	Nil	100	410
	SS	ILLUM	1	Nil	100	410
	SS	WP	1	Nil	95	410

### **MK 40**

Notes: This is a South African add-on grenade launcher designed to fit on any assault rifle. A buttstock is also available for independent firing. South African forces tend to use the Milkor or Improved M-79 grenade launchers; however, the MK 40 was available in limited quantities.

Twilight 2000 Notes: Israeli forces were also known to use some MK 40s during the Twilight War.

Merc 2000 Notes: This weapon was produced in large quantities and sold to "unnamed parties."

Weapon	Ammunition	Weight	Magazine	Price
<b>MK 40</b>	40mm NATO Low Velocity	2.2 kg (3.24 kg with Buttstock)	1 Internal	\$480

Weapon	ROF	Round	Burst	Range	Burst	IFR
<b>MK 40</b>	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	400
	SS	Ferret	1	Nil	100	400
	SS	Flash-Bang	1	Nil	100	400

	SS	Flechette	1	Nil	70	Nil
	SS	HE	1	Nil	100	400
	SS	HEAT	1	Nil	100	400
	SS	HEDP	1	Nil	100	400
	SS	HE Airburst	1	Nil	100	400
	SS	ILLUM	1	Nil	100	400
	SS	WP	1	Nil	100	400

### Stopper

Notes: This is a riot grenade launcher in use by South African police and internal security forces. It is related to the Milkor grenade launcher (see above), but is in a slightly smaller caliber, and cannot use standard military ammunition. The stock folds, and instead of the 3.5x sight on the Milkor, the Stopper has simple iron sights for short-range use. This weapon was produced in far greater numbers than the Milkor.

Weapon	Ammunition	Weight	Magazine	Price
<b>Stopper</b>	37mm South African High Velocity	3.7 kg	1 Internal	\$550

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Stopper</b>	SS	Baton	0	Nil	30	Nil
	SS	CS	0	Nil	100	390
	SS	Flash-Bang	0	Nil	100	390
	SS	ILLUM	0	Nil	100	390

**K-201**

Notes: Based on the US M-203 add-on grenade launcher, the K-201 is specifically designed for use with the K-2 and K-1A1 assault rifles, though it may also be installed on M-16A1, M-16A2, M-4, and CAR-15 assault rifles. The grenade sight has tritium inlays for night use, but it is otherwise virtually identical to the M-203.

Weapon	Ammunition	Weight	Magazine	Price
<b>K-201</b>	40mm NATO Low Velocity	1.62 kg	1 Internal	\$385

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>K-201</b>	SS	APERS	2	Nil	40	Nil
	SS	CHEM	2	Nil	100	400
	SS	Ferret	2	Nil	100	400
	SS	Flash-Bang	2	Nil	100	400
	SS	Flechette	2	Nil	72	Nil
	SS	HE	2	Nil	100	400
	SS	HEAT	2	Nil	100	400
	SS	HEDP	2	Nil	100	400
	SS	HE Airburst	2	Nil	100	400
	SS	ILLUM	2	Nil	100	400
	SS	WP	2	Nil	100	400

**LAG 40 SB-M1**

Notes: This is an automatic grenade launcher in use by Spain and Portugal. It bears some external similarity to the Mark 19 AGL, but is internally quite different. The LAG uses a low fire rate that makes it easier to control. Feed may be from the left or right, and may be switched easily without tools. Fieldstripping may also be done without tools and takes less than 30 seconds. This weapon must be fired from a tripod, and uses the NHT.

Weapon	Ammunition	Weight	Magazine	Price
<b>LAG-40 SB-M1</b>	40mm NATO High Velocity	43.6 kg	24 Belt, 32 Belt	\$2325

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>LAG 40 SB-M1</b>	3	HVCC	0	1	230	Nil
	3	HVHE	0	1	200	2030
	3	HVHEDP	0	1	200	2030

## Arpad 600

Notes: One of the standard Swiss grenade launchers, the Arpad 600 is a long-range single-shot grenade launcher that bears more resemblance to a rocket launcher than a grenade launcher. It is meant to be a grenade launcher that can double as an anti-armor weapon. Note that this weapon has a backblast, and is a recoilless weapon.

Weapon	Ammunition	Weight	Magazine	Price
Arpad 600	35mm Swiss High Velocity	6.8 kg	1 Internal	\$1660

Weapon	ROF	Round	SS	Burst	Range	IFR
Arpad 600	SS	HE	Nil	Nil	240	3570
	SS	ILLUM	Nil	Nil	240	3570

## Brugger & Thomet GL-06/LL-6

Notes: This new Swiss grenade launcher is in many ways to other similar 40mm grenade launchers in the world, but it is also different in several ways. Though there are officially two versions of the GL-06 – the GL-06 military version and the LL-06 police version – the only difference between the two is the color of the gripstock (yellow in the case of the LL-06, and a choice of variety of camouflaging colors or patterns for the GL-06). Both are capable of firing any sort of military or police 40x46mm ammunition. The LL-06 is in fact the original version, as Brugger & Thomet original designed the weapon in response to requests from several police departments in Europe. However, the GL-06 has *unofficially* proven to be the bigger seller; since most military sales have been made to special ops units, particularly in Europe, complete figures of GL-06 sales have not been released to the public.

At its core, the launcher itself is basically conventional – a 40mm caliber barrel with a length of 279.8mm, and a permanently-attached polymer gripstock with a folding stock. There are two types of folding stocks available. The standard side-folding full-sized polymer stock is skeletonized and may be configured to fold to the left or right, and may be fitted with either a permanent or removable recoil pad. The second type of stock is tubular and folds atop the launcher, and has an abbreviated buttplate (which also may be fitted with a permanent or removable recoil pad); the stock length is also adjustable to a small extent by sliding, allowing a better fit for the shooter's stature and what other equipment he is wearing. The barrel is topped by a full-length MIL-STD-1913 rail, and under the front end of the gripstock is also a short section of MIL-STD-1913 rail. The rail under the gripstock may be extended back to the trigger guard by another detachable length of MIL-STD-1913 rail. Slightly-longer lengths of detachable rail may also be added to the sides of the gripstock. The GL-06 is also equipped with simple iron sights (an adjustable rear diopter with a ghost ring and a front blade with protective ears). The iron sights are simple since the GL-06 was designed with the idea that those sights were to be used as emergency backups, and that the primary sights would be some sort of optical device mounted on the barrel's MIL-STD-1913 rail. The GL-06 is also sold with folding leaf-type grenade sights that attach to one of the side MIL-STD 1913 rails (when they are themselves attached). The GL-06 is compact, with a length of only 590mm or 385mm with the stock folded. With the tubular stock, the length with the stock folded is 10mm shorter, and it can be made a further 20mm by sliding the stock to fit the shooter.

Loading is done by a tip-up barrel, tipping forward and therefore allowing the use of even long-length antiriot munitions, smoke rounds, or flares and star shells. The barrel is unlocked with a switch inside the front of the enlarged trigger guard, which also acts as a safety when pulled towards the trigger. Springs assist the tipping of the barrel, and once the barrel is unlocked, it only takes a light touch to actually tip the barrel forward. Once the barrel is pushed back down, locking is automatic. A crossbolt safety is provided behind the breech to further safe the weapon when necessary, and the trigger is Double-Action-Only to provide yet a greater level of safety. The GL-6's mechanism is inside the gripstock behind the breech, including a non-exposed hammer, providing yet another level of safety as well as protection from the elements. Sling attachments are found on both sides of the GL-06. The GL-06 is sold with a folding forward handgrip, but this is an attachment for the MIL-STD-1913 under the gripstock and therefore can be easily removed. Field stripping is designed to be quite simple, with screws that are wide and slotted, easily removed even by something as simple as a coin.

Twilight 2000 Notes: The GL-06 is not available in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
GL-06	40mm NATO Low-Velocity	2.05 kg	1 Internal	\$556

Weapon	ROF	Round	SS	Burst	Range	IFR
GL-06	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	390
	SS	Ferret	1	Nil	100	390
	SS	Flash-Bang	1	Nil	100	390
	SS	Flechette	1	Nil	70	Nil
	SS	HE	1	Nil	100	390
	SS	HEAT	1	Nil	100	390
	SS	HEDP	1	Nil	100	390
	SS	HE Airburst	1	Nil	100	390
	SS	ILLUM	1	Nil	100	390
	SS	WP	2	Nil	100	390





**MKE Mod 2000**

Notes: This is the Turkish modification of the US M-203. It is designed to fit without modification underneath the barrel of the G-3 battle rifle series, but with modification can also be fitted to the AK series, FN FAL, and M-16A1 and M-16A2.

Weapon	Ammunition	Weight	Magazine	Price
<b>MKE Mod 2000</b>	40mm NATO Low Velocity	1.75 kg	1 Internal	\$405

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>MKE Mod 2000</b>	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	410
	SS	Ferret	1	Nil	100	410
	SS	Flash-Bang	1	Nil	100	410
	SS	Flechette	1	Nil	75	Nil
	SS	HE	1	Nil	100	410
	SS	HEAT	1	Nil	100	410
	SS	HEDP	1	Nil	100	410
	SS	HE Airburst	1	Nil	100	410
	SS	ILLUM	1	Nil	100	410
	SS	WP	1	Nil	100	410

## AAI/Colt M-203

Notes: The M-203 was developed during the Vietnam War to replace the M-79 and an earlier experimental underbarrel grenade launcher, the XM-148. The M-203 was accepted for service in 1969, and by 2000, almost 300,000 of them had been produced, with the M-203 being used by over thirty countries worldwide. The M-203 was an AAI design, and they built the first production batches. However, even AAI realized that they could not keep up with the even the huge orders from the US military, let alone other countries, and by January of 1970, the M-203 was a Colt product; AAI themselves only manufactured 600 M-203s.

The M-203 grenade launcher kit consists of a base launcher rail that is attached under the barrel of an M-16 or M-4-series assault rifle, the barrel and trigger mechanism, a quadrant sight that is attached to the carrying handle of the rifle, a secondary folding leaf sight behind the front sight of the rifle, and a new handguard. The assembly is very simple and takes less than 5 minutes to attach to the rifle. Once attached, the M-16 or M-4 may be used normally, except that a bayonet or the RAW rifle grenade cannot be used, and the sling attaches to the front of the weapon slightly differently (the sling swivel is attached to the side of the front sight base). The M-203 uses a slide action to open the breech, sliding forward for loading, with a latch on the left side of the interface rail being depressed by the thumb of the shooter's non-firing hand (assuming he is left-handed) being depressed to unlock the barrel. The round is inserted into the breech, and the barrel slid back again, where it automatically locks into place for firing. The spent case ejects automatically when the breech is opened again. The M-203 is fired using separate trigger group in front of the magazine well of the rifle to which it is attached; the magazine is used as a sort of pistol grip for the M-203. Inside the trigger guard of the M-203 is a safety that looks like a backwards trigger in front of the actual trigger; pushing it forward makes the M-203 ready to fire. When pulled back, the safety blocks the firing pin as well as not providing enough room to put a finger on the trigger. Construction is primarily of steel, with the special handguard being of one-piece semi-flexible plastic (so that it can be fitted onto the rifle), and a 12-inch aluminum alloy barrel.

The Colt Launcher System is a development of the M-203 into a stand-alone launcher. It is basically the M-203 with a snap-on M-16 or M-4 stock and pistol grip. The stock can be removed completely, leaving only the pistol grip, if a more compact weapon is desired.

The widespread adoption by US forces of the M-4 and M-4A1 carbines led to the development of the M-203A1. The mounting kit of the M-203A1 uses handguards with four-point MIL-STD-1913 rails (borrowed from the SOPMOD kit), assuming the shooter's carbine does not already have them. The modified M-203A1 (which uses a shorter 9-inch barrel to better fit the M-4's shorter length) can then be easily attached to lower rail of the handguards. The M-203A1 mounting interface also allows it to be easily attached to almost any weapon that has a MIL-STD-1913 rail under the barrel.

RM Equipment of Miami, Florida also introduced a variant of the M-203, called the M-203PI EGLM (Enhanced Grenade Launcher Module), in 1987. (This should not be confused with Colt's early experiments with an improved M-203, also called the M-203PI at the time; Colt's experimental M-203PI will be found on the Best Grenade Launchers That Never Were page). The M-203PI EGLM is version of the M-203 that is similar to the Colt Launcher System, though it is even more flexible in mounting options and ability to use a variety of accessories. Mounting an M-203PI EGLM usually requires very little of no modifications to the weapon upon which it is mounted, though some will require the replacements of their handguards with specially-designed handguards. The M-203PI EGLM may be mounted on its host weapon in one of three ways.

The Interbar Mounting System (IMC) is a special attachment similar in concept to the original M-203, but far more flexible and adaptable in form. The IMC has the virtue of allowing the M-203PI EGLM to be mounted on virtually any rifle, carbine, short-barreled assault rifle, or submachinegun; even a few tactical semiautomatic shotguns are able to mount the M-203PI EGLM (in what must be an incredible one-two punch!) When attached to a host weapon using the IMC, the grenade launcher is on a rock-steady mount. A slight drawback of the IMC is that adding it to a weapon is that it takes more work to attach it or remove it from its host weapon; many host weapons will require the removal of their original handguards and replacement with special handguards incorporating the IMC. (These handguards do, however, generally give the shooter three MIL-STD-1913 rails to use.)

A second way to mount the M-203PI EGLM is by use of the Snap-On Launcher System (SOLA). The SOLA is a special interbar that can be mounted and removed from the host weapon without any special skills or tools. This allows the M-203PI EGLM to be removed or mounted on many most weapons as necessary, with no modifications to the host weapon required. The disadvantage of the SOLA is less flexibility when choosing the host weapon to which it is mounted; in general, it will take a rifle somewhere in length between a Colt Commando and a standard M-16-series weapon.

The M-203PI EGLM can also be attached to a gripstock, Tactical Mounting System (TMS). This gripstock uses an M-4-type collapsible stock that also folds to right to allow the M-203PI EGLM to be used as a "grenade pistol." The gripstock is equipped with a MIL-STD-1913 rail above the interbar, and a foregrip can also be attached to the barrel of the grenade launcher to improve grip and allow for faster actuating of the barrel when loading and unloading (including a foregrip with an adapter for a tactical flashlight).

Construction of the M-203PI EGLM's grenade launcher module and most of its associated hardware are of aluminum stock; some other parts of the interbar and TMS may be made from steel or polymer as required. At least 28 countries are using the M-203PI EGLM as of late April 2008, including the US. Weight and barrel lengths for the M-203PI EGLM are approximate; I have yet to find any hard information on the proper figures. (If a reader knows, please let me know.)

Twilight 2000 Notes: The M-203A1 was a rare weapon in the Twilight 2000 timeline, even in US special operations units. Outside of US hands, the M-203A1 is virtually unknown (at least, as an issue weapon). The M-203PI EGLM does not exist in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
M-203	40mm Low	1.63 kg	1 Internal	\$384

<b>Colt Launcher System</b>	Velocity 40mm Low Velocity	(M-16 Stock) 2.95 kg, (M-4 Stock) 2.77 kg, (No Stock) 2.5 kg	1 Internal	(M-16 Stock) \$414, (M-4 Stock) \$434 kg, (No Stock) \$389
<b>M-203A1</b>	40mm Low- Velocity	1.27 kg	1 Internal	\$288
<b>M-203PI EGLM (Grenade Launcher Module)</b>	40mm Low- Velocity	1.22 kg	1 Internal	\$295
<b>M-203PI EGLM IMC</b>	N/A	0.15 kg	N/A	\$13
<b>M-203PI EGLM IMC</b>	N/A	0.1 kg	N/A	\$8
<b>Modified Handguards</b>				
<b>M-203PI EGLM SOLA</b>	N/A	0.2 kg	N/A	\$18
<b>M-203PI EGLM Gripstock</b>	N/A	1.5 kg	N/A	\$65

<b>Weapon</b>	<b>ROF</b>	<b>Round</b>	<b>SS</b>	<b>Burst</b>	<b>Range</b>	<b>IFR</b>
<b>M-203/Colt Launcher System</b>	SS	APERS	1	Nil	40	Nil
	SS	CHEM	1	Nil	100	400
	SS	Ferret	1	Nil	100	400
	SS	Flash-Bang	1	Nil	100	400
	SS	Flechette	1	Nil	75	Nil
	SS	HE	1	Nil	100	400
	SS	HEAT	1	Nil	100	400
	SS	HEDP	1	Nil	100	400
	SS	HE Airburst	1	Nil	100	400
	SS	ILLUM	1	Nil	100	400
	SS	WP	1	Nil	100	400
	<b>M-203A1</b>	SS	APERS	1	Nil	37
SS		CHEM	1	Nil	92	371
SS		Ferret	1	Nil	92	371
SS		Flash-Bang	1	Nil	92	371
SS		Flechette	1	Nil	69	Nil
SS		HE	1	Nil	92	371
SS		HEAT	1	Nil	92	371
SS		HEDP	1	Nil	92	371
SS		HE Airburst	1	Nil	92	371
SS		ILLUM	1	Nil	92	371
SS		WP	1	Nil	92	371
<b>M-203PI EGLM</b>		SS	APERS	1	Nil	37
	SS	CHEM	1	Nil	93	373
	SS	Ferret	1	Nil	93	373
	SS	Flash-Bang	1	Nil	93	373
	SS	Flechette	1	Nil	69	Nil
	SS	HE	1	Nil	93	373
	SS	HEAT	1	Nil	93	373
	SS	HEDP	1	Nil	93	373
	SS	HE Airburst	1	Nil	93	373
	SS	ILLUM	1	Nil	93	373
	SS	WP	1	Nil	93	373

### **Aerojet XM-174**

Notes: This was a limited-production, interim grenade launcher meant to be used until more advanced grenade launchers in development were available. (The XM-174 was essentially an advanced prototype, being combat-tested.) It was designed in 1968 in an accelerated design program, and used by US Navy brown-water craft in Vietnam, as well as by certain special ops troops and USAF Security Police. Some were also mounted on helicopters as door guns. Though type-designated, the XM-174 was never formally adopted by any branch of the US armed forces, and was never used by any other country's armed forces.

The XM-174 used a modified M-1919A6 receiver, with the internal mechanism parts designed for the weapon, and the barrel of an M-79 grenade launcher. It was fed from an ammunition canister holding 12 rounds and feeding from the left; the rate of fire was such that all 12 rounds could be fired and in the air before the first hit the target. (The nominal rate of fire was 350 RPM.) The XM-174 was also a selective fire weapon, capable of semiautomatic fire. The grenade launcher was meant primarily to be fired from a tripod or pintle mount, but could also be fired from an attached bipod; however, the bipod was not always supplied with a bipod and they were

actually quite rare. Helicopter use was limited by the relatively small ammunition drums, as they were difficult to change in flight. Some handy unit armorers also modified the XM-174 to be fired from flexible mounts on the sides of the helicopter; again, the small ammunition drums were a problem, and they were essentially impossible to reload in flight when used on such a mount. Operation was by simple recoil.

Weapon	Ammunition	Weight	Magazine	Price
<b>XM-174</b>	40mm NATO Low-Velocity	7.25 kg	12 Drum	\$621

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>XM-174</b>	5	APERS	1/1/1	1/1/1	50	Nil
	5	CHEM	1/1/1	1/1/1	100	420
	5	Ferret	1/1/1	1/1/1	100	420
	5	Flash-Bang	1/1/1	1/1/1	100	420
	5	Flechette	1/1/1	1/1/1	90	Nil
	5	HE	1/1/1	1/1/1	100	420
	5	HEAT	1/1/1	1/1/1	100	420
	5	HEDP	1/1/1	1/1/1	100	420
	5	HE Airburst	1/1/1	1/1/1	100	420
	5	ILLUM	1/1/1	1/1/1	100	420
5	WP	1/1/1	1/1/1	100	420	

### China Lake EX-41

Notes: This is a magazine-fed pump-action weapon, able to mount a variety of optical and laser sights without damaging the sights. The weapon fires the 40mm NATO High-Velocity rounds of the Mk-19 automatic grenade launcher. It was designed by China Lake for the US Navy SEALs, but is still listed as an experimental weapon, and whether or not it has been combat tested is unknown.

For a brief time, the EX-41 was marketed by Nordac Manufacturing Corporation under the name 40/3 Tactical Assault Grenade Launcher. I have not been able to find out whether they made any sales. They do not appear to be selling them now, anyway.

Twilight 2000 Notes: This experimental magazine-fed grenade launcher was issued in small numbers to US Navy SEALs during the Twilight War.

Merc 2000 Notes: This weapon fell prey to budget cuts in the late 1990s.

Weapon	Ammunition	Weight	Magazine	Price
<b>EX-41</b>	40mm NATO High Velocity	8.16 kg	4	\$1615

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>EX-41</b>	PA	HVHE	4	Nil	190	1940
	PA	HVHEDP	4	Nil	190	1940
	PA	HVCC	4	Nil	110	Nil

### China Lake Mark 18 Mod 0

Notes: This Vietnam-era weapon was sort of an oddity to the modern era – it is a hand-cranked belt-fed grenade launcher. It used a very simple method of operation with few moving parts and simple maintenance. The ammunition belt was a custom-made Mylar-backed Dacron belt (earlier fiberglass-reinforced tape belts gave too many problems, and they were quickly replaced). Even the Mylar/Dacron belts were a weak point, good for only about five trips through the Mark 18 before they no longer held the rounds firmly enough, and they too were replaced by cloth belts. The Mark 18 was produced between 1965 and 1968, and used primarily on small boats or in fixed positions such as bunkers; their primary users were the so-called “River Rats” and the SEALs. They could be mounted on M-2HB, M-60, or M-1919 tripods or pintle mounts, but could not be fired without such a mount.

The unusual method of operation of this weapon means that unusual rate of fire rules must be used. The rate of fire for the Mark 18 Mod 0 in sustained fire operations is one-third the Strength rating of the operator; this may be quickened to one-half the Strength rating of the firer for 20 minutes, or 3/4 the Strength rating of the firer for 10 minutes. Firing at a normal rate does not count as fatigue, but firing at a rate of fire 1/2 the firer’s strength counts as one level of fatigue, and firing at 3/4 of the firer’s strength counts as two levels of fatigue. Willpower skill may affect this. Recoil for “automatic” bursts is equal to 1.5 times the amount of rounds which are fired.

Some 1200 of these launchers were produced; however, it was never considered as more than a stopgap weapon, to be used until a “real” automatic grenade launcher could be designed and the bugs worked out. Forerunners of the Mk 19 (below) were already being developed.

Weapon	Ammunition	Weight	Magazine	Price
<b>Mark 18 Mod 0</b>	40mm NATO Low-Velocity	8.62 kg	24 Belt, 48 Belt	\$241

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>Mark 18 Mod 0</b>	Special	APERS	1	Special	36	Nil

Special	CHEM	1	Special	90	340
Special	Ferret	1	Special	90	340
Special	Flash-Bang	1	Special	90	340
Special	Flechette	1	Special	68	Nil
Special	HE	1	Special	90	340
Special	HEAT	1	Special	90	340
Special	HEDP	1	Special	90	340
Special	HE Airburst	1	Special	90	340
Special	ILLUM	1	Special	90	340
Special	WP	1	Special	90	340

### China Lake Pump-Action 40mm Grenade Launcher

Notes: Though never given an official designation by the US military, and never considered more than an advanced prototype, this grenade launcher was one of the best-liked grenade launchers used by special operations troops in Vietnam, especially the SEALs, who reportedly used up to 30 of them in combat. Army Special Forces managed to get a hold of up to five of them, and the Marines got two of them for use by their Force Recon units. This weapon resembled a giant short-barreled shotgun, with a tubular magazine below the barrel and the leaf-type sights which were borrowed from the M-79. The firepower was quite welcome and the SEALs especially had good things to say about the weapon. The stock was of wood with a thick rubber recoil pad, the barrel and receiver were made from steel, and the magazine tube and pump action were built of aluminum; despite the large size of the weapon, it was fairly light. Unfortunately, tests and production of this weapon did not continue after the Vietnam War, though lessons from the weapon were incorporated into the EX-41 (see above).

Weapon	Ammunition	Weight	Magazine	Price
Pump-Action 40mm	40mm NATO Low-Velocity	3.72 kg	3 Tubular	\$624

Weapon	ROF	Round	SS	Burst	Range	IFR
Pump-Action 40mm	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	420
	SS	Ferret	1	Nil	100	420
	SS	Flash-Bang	1	Nil	100	420
	SS	Flechette	1	Nil	75	Nil
	SS	HE	1	Nil	100	420
	SS	HEAT	1	Nil	100	420
	SS	HEDP	1	Nil	100	420
	SS	HE Airburst	1	Nil	100	420
	SS	ILLUM	1	Nil	100	420
	SS	WP	1	Nil	100	420

### General Dynamics Mark 19 Mod 3

Notes: This automatic grenade launcher (often known as the "autoblooper" to troops) was the first practical launcher of its type to be fielded by military force. The original model, the Mark 19 Mod 0, was designed for use by US Navy patrol boats and SEALs in Vietnam. It was a spectacular success, well liked by its troops, but mechanically complex and difficult to care for. A product improvement program began, and the Mod 0 guns were converted to the new Mod 1 specification by 1971, along with new manufacture guns. The Mod 2 was the first serious attempt to streamline the mechanism of the Mark 19 itself; this was unsuccessful, but the Mod 3 variant was, having 47% fewer parts and being strippable without special tools. By 2000, over 21,000 Mark 19s had been built for US forces, with many more being made for 22 other countries.

Weapon	Ammunition	Weight	Magazine	Price
Mark 19 Mod 3	40mm NATO High Velocity	35.3 kg	32 Belt, 48 Belt	\$1493

Weapon	ROF	Round	SS	Burst	Range	IFR
Mark 19 Mod 3	5	HVCC	1	2	250	Nil
	5	HVHE	1	2	200	2030
	5	HVHEDP	1	2	200	2030

### General Dynamics Mark 47 Mod 0 Striker

The Striker is an automatic grenade launcher which can be used as a standard AGL, but is specifically designed for use with a fire control computer and a special airburst Programmable Prefragmented High Explosive/Self-Destructing (PP-HE/SD) rounds or HE Airburst (HEAB) rounds which can be programmed by the fire control computer/sight to fire out to a specific distance and explode overhead of dead space, trenches, troops in the open, troops hiding behind walls or in buildings, etc., for the easier elimination of troop concentrations even if they are hiding. The Striker can also use standard high-velocity automatic grenade launcher ammunition,

or use medium-velocity rounds by loading them into the breech individually like a Mark 19 Mod 3 AGL. The Striker is in essence a highly-modified M-2HB machinegun, which gives it a compact size that is smaller than the Mark 19 and the basic gun is much lighter. The Striker, like the Mark 19, is however designed to be fired from a tripod (the Mk 108), which weighs 20 kg, versus the 26 kg tripod of the Mk 19. The tripod includes an integral soft mount. The fire control computer/sight is equipped with an integral telescopic day sight and a thermal imager for night use. The belts are the same as those used on the Mk 19, even when loaded with special ammunition. The Striker is currently being used by some US special operations forces in Afghanistan, and has apparently been used by them since 2007. It is currently being evaluated by the rest of the US military as well as Israel. The basic gun weight below includes the special sight unit/computer.

The Twilight 2000 Notes: The Striker is not available in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
Striker	40mm NATO High Velocity	21 kg	32 Belt, 48 Belt	\$1493

Weapon	ROF	Round	SS	Burst	Range	IFR
Striker	5	HVCC	1	2	210	Nil
	5	HVHE	1	2	200	2030
	5	HVHEDP	1	2	200	2030
	5	PP-HE-SD	1	2	200	2030
	5	HEAB	1	2	200	2030

### Manville Gun/MM-1

Notes: The original Manville Gun was designed by Charles Manville in 1935. It was essentially a huge, rotary-cylinder 12-gauge shotgun, with a 24-round capacity contained within a large rotary-cylinder which was wind-up and spring-driven. Construction was largely of high-strength aluminum (except for a plastic pistol grip, fore-grip, and some other parts which were made from steel, however, the barrels of all versions were made from light alloy, and as might be thought, was large and beastly-heavy. It has no stock, but was equipped with a fore-grip for control. Loading was done by releasing two large-headed finger-tight screws at the of the barrel, which allowed the two halves of the Manville gun to be separated; after loading, the reverse procedure was done. The cylinder was spring-loaded and had to be wound (but in a backward direction from normal). This gave the Manville gun a light trigger pull, but also (in game terms) adds two phases to the reloading time. Each chamber of the cylinder was a complete unit, with its own firing pin. This original 12-gauge Manville Gun had some sales (some would say a surprising amount), but production had stopped by the late 1940s.

In 1936, Manville also came up with a 26.5mm version of the Manville Gun; this version was nearly identical to the 12-gauge weapon, but used a somewhat simplified construction and the cylinder held 18 rounds instead of the 24 of the 12-gauge Manville gun. Early models of the 26.5mm Manville Gun used a 9.75-inch barrel, while later versions used a 9.5-inch barrel and were somewhat lighter than the early models. The later version was much improved in the areas of structural strength and reliability, as well as having more ergonomic pistols grips and foregrips. Both versions could have inserts put in the barrels and cylinders to allow the use of 12 Gauge and .38 Special ammunition (though these ammunition types could not be mixed, since they involved a barrel insert as well as cylinder inserts).

Late in the 1930s, Manville created a version of the Manville Gun which could fire the newly-available 37mm grenades. This version had a 12-round capacity and the mechanism was effectively upside-down with the barrel at the bottom of the cylinder. The 37mm Manville gun was intended to be fired like a repeating mortar under normal circumstances, though it could be fired by one man if he were strong enough to manage the enormous weight. It could also be mounted on the tripods and pintle mounts of the time. Construction was otherwise the same as the late version of the 26.5mm Manville gun, but there were no barrel and cylinder inserts.

The military and police showed little interest in any version of the Manville Guns, but the Manville Company survived World War 2 by building antiaircraft guns, gun parts for existing large-caliber guns, and – believe it or not – dishwashers! In 1943, Manville gave up on the Manville guns, ordering the destruction of the production machinery, dies, and most of his notes.

The late-model 26.5mm Manville Gun was used in the movie *Dogs of War*, called the “XM-18E1R” in the movie, though the effects seen in the movie were far greater than an actual 26.5mm Manville Gun was capable of producing. Alert viewers of the movie will notice that the catalogue that Christopher Walken’s character was perusing in the movie included a round called the “Flashette.” It is believed that the writers actually meant “Flechette” (though this is not certain; the writers have not said what they actually meant). Regardless, Flechette rounds were never actually developed for the 26.5mm Manville Gun or the 26.5mm MM-1. However, I have included it below as a “what-if.”

Ironically, *Dogs of War* created a new interest in the Manville Gun in the late 1970s. At first, these launchers were built by Hawk engineering, but this quickly passed to the Frankford Arsenal, who decided to renew the production of the 37mm Manville gun using new production methods and materials, calling it the MM-1. Later, Frankford made 12-gauge, 26.5mm, and 40mm versions of the MM-1. These “new” versions of the Manville Gun are far lighter than the originals. Unfortunately, the MM-1 also enjoyed few sales, and though Frankford Arsenal will still make them upon request, they are no longer mass-produced. The US and some NATO countries reportedly have some 40mm versions for use by special ops troops.

Twilight 2000 Notes: Ironically, the Twilight War renewed interest in the Manville Gun and MM-1, particularly in the 26.5mm and 40mm versions, and Frankford Arsenal was asked by the Pentagon to greatly step production of the MM-1, particularly in those two calibers.

Weapon	Ammunition	Weight	Magazine	Price
Manville Gun	12 Gauge 2.75"	6.92 kg	24 Cylinder	\$537
Manville Gun (Early)	26.5mm High Velocity (and 12 Gauge 2.75" and .38 Special)	6.92 kg	18 Cylinder	\$750
Manville Gun (Late)	26.5mm High Velocity (and 12 Gauge 2.75" and .38 Special)	7.08 kg	18 Cylinder	\$619
Manville Gun	37mm Low-Velocity	18.14 kg	12 Cylinder	\$619
MM-1	12 Gauge 2.75"	5.7 kg	24 Cylinder	\$537
MM-1	26.5mm High Velocity	5.7 kg	18 Cylinder	\$505
MM-1	37mm Low-Velocity	8.66 kg	12 Cylinder	\$765
MM-1	40mm NATO Low-Velocity	9 kg	12 Cylinder	\$805

Weapon	ROF	Round	SS	Burst	Range	IFR
Manville Gun (12 GA Insert)	SA	Shot or Slug	3	Nil	19	Nil
Manville Gun (26.5mm)	SA	Flechette	3	Nil	124	Nil
Manville Gun (26.5mm)	SA	HE	3	Nil	138	833
Manville Gun (26.5mm)	SA	ILLUM	3	Nil	138	833
Manville Gun (26.5mm)	SA	WP	3	Nil	138	833
Manville Gun (26.5mm)	SA	Slug	3	Nil	54	Nil
Manville Gun (26.5mm, 12 GA Insert)	SA	Shot or Slug	3	Nil	13	Nil
Manville Gun (26.5mm, .38 Insert)	SA	Slug	1	Nil	18	Nil
MM-1 (26.5mm)	SA	CHEM	1	Nil	138	833
MM-1 (26.5mm)	SA	Flechette	1	Nil	124	Nil
MM-1 (26.5mm)	SA	HE	1	Nil	138	833
MM-1 (26.5mm)	SA	HEDP	1	Nil	138	833
MM-1 (26.5mm)	SA	ILLUM	1	Nil	138	833
MM-1 (26.5mm)	SA	WP	1	Nil	138	833
MM-1 (26.5mm)	SA	APERS	1	Nil	69	Nil
MM-1 (26.5mm)	SA	Slug	1	Nil	60	Nil
MM-1/Manville Gun (38mm)	SA	CHEM	0	Nil	100	410
MM-1/Manville Gun (38mm)	SA	HE	0	Nil	100	410
MM-1/Manville Gun (38mm)	SA	HEDP	0	Nil	100	410
MM-1/Manville Gun (38mm)	SA	ILLUM	0	Nil	100	410
MM-1/Manville Gun (38mm)	SA	WP	0	Nil	100	410
MM-1 (40mm)	SA	APERS	0	Nil	30	Nil
MM-1 (40mm)	SA	CHEM	0	Nil	100	410
MM-1 (40mm)	SA	Ferret	0	Nil	100	410
MM-1 (40mm)	SA	Flash-Bang	0	Nil	100	410
MM-1 (40mm)	SA	Flechette	0	Nil	65	Nil
MM-1 (40mm)	SA	HE	0	Nil	100	410
MM-1 (40mm)	SA	HEAT	0	Nil	100	410
MM-1 (40mm)	SA	HEDP	0	Nil	100	410
MM-1 (40mm)	SA	HE Airburst	0	Nil	100	410
MM-1 (40mm)	SA	ILLUM	0	Nil	100	410
MM-1 (40mm)	SA	WP	0	Nil	100	410

### Milkor USA M-32

Notes: Produced by Milkor USA (a subsidiary of South Africa's Milkor Defence), the M-32 is a modified form of the Milkor MGL Mark 1 (more commonly known as the MGL-40 or MGL-140). So far, the M-32 is used only by US Marines, though reportedly other branches of the US military, as well as a few other countries, are evaluating or considering buying the M-32. The Marines were combat-testing the M-32 since 2004, with official adoption taking place in 2005.

As with the MGL Mark 1, the M-32 uses a single barrel, fed by a 6-round revolving cylinder. The rear part of the M-32, consisting of most of the gripstock and the rear plate of the cylinders, swings away from the rest of the M-32 for loading. The spring-loaded cylinders are wound with a knob at the front of the cylinder (taking two actions), and then the M-32 is locked back together. In addition to the spring-loading, the M-32's cylinder is gas-actuated. The cylinders rotate as a revolver, but the shooter can use a manual override in order to skip over dud rounds. This feature also allows the shooter to have different types of ammunition loaded into the cylinders, and choose which type of round he wishes to fire. The trigger is double-action-only; while this virtually eliminates the chances of an accidental trigger pull, it also makes the trigger pull very heavy. Barrel length is 14 inches.

There are a number of differences between the MGL Mark 1 and the M-32. The M-32 uses four MIL-STD-1913 rails instead of the single proprietary sight mount of the MGL Mark 1; these rails are atop the receiver/barrel and on the sides and bottom of the barrel,

with the barrel being partially surrounded with a handguard for this purpose. (The Marines normally use a detachable handgrip on the lower rail.) The Armon Occluded-Eye Gunsight of the MGL Mark 1 is replaced by a Milkor M-1A2 reflex sight designed for Milkor by a South African company called Green Trading; this sight is an adjustable reflex sight with a slight magnification, and has an illuminated quadrant grid reticle to assist in aiming. The cylinders of the M-32 are longer; this allows the shooter to use almost the entire inventory of 40x46mm rounds (any round 140mm or less in length), including most pyrotechnics, flares, star shells, and some upcoming advanced rounds. The folding stock of the MGL Mark 1 is replaced with a stock similar M-4 Carbine-type stock; made by Vltor, this stock has six sliding positions, has limited adjustment for the angle of the stock, and has a thick recoil pad. The M-32 is also finished in Gunkote SCK6, which is highly resistant to corrosion and wear.

MKEK in Turkey produces a near-copy of the M-32. For the most part it is the same. Differences are noted Below.

Rippel Effect (the new name of Milkor as of 2010) now markets the M-32 on the general world arms market, calling it the XRGL-40 (Extended-Range Grenade Launcher, 40mm). Their collaboration with the US Marines appears to have served them well.

Twilight 2000 Notes: The M-32 is not available in the Twilight 2000 timeline.

Weapon	Ammunition	Weight	Magazine	Price
M-32	40mm NATO Low-Velocity	5.99 kg	6 Cylinder	\$1062
MKEL 40 MGL	40mm NATO Low-Velocity	5.8 kg	6 Cylinder	\$1062

Weapon	ROF	Round	SS	Burst	Range	IFR
M-32	SA	APERS	1	Nil	50	Nil
	SA	CHEM	1	Nil	100	420
	SA	Ferret	1	Nil	100	420
	SA	Flash-Bang	1	Nil	100	420
	SA	Flechette	1	Nil	90	Nil
	SA	HE	1	Nil	100	420
	SA	HEAT	1	Nil	100	420
	SA	HEDP	1	Nil	100	420
	SA	HE Airburst	1	Nil	100	420
	SA	ILLUM	1	Nil	100	420
	SA	WP	1	Nil	100	420

### Naval Ordnance Station Mark 20 Mod 0

Notes: The Mark 20 was designed by the Naval Ordnance Station in Louisville, Kentucky to address the biggest problem with the Mark 18 crank-operated grenade launcher – the crank-operation. The Mark 20 was perhaps the first grenade machinegun, and is a selective fire weapon with the low rate of automatic fire which became characteristic of most automatic grenade launchers in the future. Prototypes were available by 1967, and the weapon received its military designation and began combat use in 1968. The Mark 20 uses a rather peculiar method of operation – blow-forward combined with recoil operation. When the Mark 20 is cocked, the barrel is actually pushed forward; the barrel snaps back around the 40mm round when the trigger in the spade grips is pushed. The force of the grenade moving down the barrel moves the barrel forward again, which causes the weapon to be recocked. The bolt, on the other hand, flies back from the recoil and completes the cycle. Though this method of operation means that the weapon has little felt recoil, it is also a very complicated method of operation. The Mark 20 is designed to be fired from pintle or tripod (NLT or NHT) mounts, but it can actually be fired handheld in short bursts. (The designers had intentions to develop the Mark 20 into a version with a standard stock, trigger, and bipod, but this was never done.) The Mark 20 is fed by disintegrating-link belts. Some 1080 of these weapons were built by 1971, when production ended, replaced by the then-new Mark 19 Mod 0 (see above).

Weapon	Ammunition	Weight	Magazine	Price
Mark 20 Mod 0	40mm NATO Low-Velocity	11.8 kg	24 Belt, 48 Belt	\$724

Weapon	ROF	Round	SS	Burst	Range	IFR
Mark 20 Mod 0	3	APERS	1	1	50	Nil
	3	CHEM	1	1	100	410
	3	Ferret	1	1	100	410
	3	Flash-Bang	1	1	100	410
	3	Flechette	1	1	75	Nil
	3	HE	1	1	100	410
	3	HEAT	1	1	100	410
	3	HEDP	1	1	100	410
	3	HE Airburst	1	1	100	410
	3	ILLUM	1	1	100	410
	3	WP	1	1	100	410

### Philco-Ford XM-129



Notes: This was an early aircraft grenade launcher system which can also be used in ground-mounted installations. It was originally designed for use on the AH-56 Cheyenne attack helicopter prototype. The XM-129 is externally powered, either from the helicopter in which it is installed or by an attached battery or generator. The XM-129 was also made in a rare hand-cranked system; A Vietnam-era weapon, it was rare and normally used by riverboats and the occasional vehicle.

The hand-cranked version has special rules; the ROF of the XM-129 is at a rate of one-third the Strength rating of the operator. This may be quickened to one-half the Strength rating of the firer for 20 minutes, or 3/4 the Strength rating of the firer for 10 minutes. Firing at a normal rate does not count as fatigue, but firing at a rate of fire 1/2 the firer's strength counts as one level of fatigue, and firing at 3/4 of the firer's strength counts as two levels of fatigue. Willpower skill may affect this. The ROF below is for the helicopter or motor-driven system. When ground-mounted, the XM-129 is fired from the same tripod as the M-2HB machinegun. The barrel reciprocates with every round fired. The XM-129 can be assembled to feed from either the left or right side, and the weapon is designed so that the center of gravity reduces the recoil. The stats below are for the ground-mounted system, fired by a motor.

Weapon	Ammunition	Weight	Magazine	Price
<b>XM-129</b>	40mm NATO High Velocity	19.5 kg	32 Belt, 48 Belt	\$1301

Weapon	ROF	Round	SS	Burst	Range	IFR
<b>XM-129</b>	5	HVCC	1	3	250	Nil
	5	HVHE	1	3	200	2030
	5	HVHEDP	1	3	200	2030

### Sage Industries Deuce

Notes: Sage has long been a participant in the design or outright manufacture of small arms, heavy weapons, and modification parts for weapons. Surprisingly, their name appears on few complete weapons, because they tend to make parts and aftermarket parts for weapons instead of designing a weapon from the ground up. One of these is the Deuce grenade launcher. Some might look at a Deuce and say, "It's just two M-203s or M-320s stuck together." They are only in a rather remote sense correct; the Deuce does consist of a pair of grenade launcher mounted over-and-under. However, this is only an external appearance; Sage has built the Deuce from the ground up. Development of the Deuce began in 2009, and it was first shown at the 2011 SHOT Show; the design is currently a mature design, lacking only in buyers. However, though some military units worldwide are interested, the primary interest has come from police organizations, for the 37mm launcher, which is designed for use only with non-lethal ammunition.

The Deuce is little heavier and bulkier than the average assault rifle (though reloads are heavier); however, the Deuce is not designed to and cannot be mounted under a rifle or other weapon. The Deuce is designed based on a DoD study in early 2008, which state simply that the average grenadier requires 1.4 grenades to achieve virtually all targets it may be fired at. The Deuce is a rugged design, made of mostly light alloys and polymers except for the rearward section of the barrel, and some other parts which might be under greater stresses.

These are made of high-strength carbon steel. Reliability of the Deuce is high due to its simple construction (its primary moving parts are to open the breeches, adjust the iron sights, and in the firing mechanism and sliding stock).

The standard Deuce G-1 fires standard 40x46mm grenades, though it can also fire the 40x51mm ERLP rounds as well. Loading and unloading is done by break-action; the weapon opens 90 degrees to load ammunition. Safety was design in, with a crossblock trigger safety, a manual striker lock, and an internal safety to prevent the Deuce from firing accidentally if bumped or dropped. Barrel selection is done via a large lever on either side behind the barrels. The Deuce G-1 (and other Deuces) are finished with phosphating, anodizing, and a black weather-resistant outer finish. The barrels are 12 inches long, and sights consist of two flip-up rear sights (the front has one for up 20-40 meters, and one for 40 meters out to extreme range).

The rear sight has a calibrated flip-up ghost ring aperture. Above the receiver as well as along the length of the top barrel are MIL-STD-1913 rails. About a quarter-length back, there is a very short rail. A further rail can be locked into the rail above the barrels if necessary. The receiver is made mostly from a single light alloy machining, though the trigger pack is in the receiver and accessed through a plate on the right side. At the rear of the receiver are attachment points for a sling; under the front MIL-STD-1913 rail are further attachments for a sling. The rear sling points have two slots, allowing the weapons to be carried with a one-point assault sling. The stock and pistol grip are Magpul-made; the stock is a sliding stock and has six positions, but is lighter than the standard M-4-type stock.

The Deuce G-2 for the most part, it is the same weapon as the Deuce G-1; however, the Deuce G-2 has no sling swivels and is restricted to 37mm rounds, most of which are less-than-lethal. In addition, the Deuce G-2 is equipped with 14-inch barrels instead of the 12-inch barrels of the Deuce 1. The barrels are rifled (in both cases), allowing the Deuce G-2 to fire standard 37mm smoothbore rounds, rifled rounds, or the newer Arwen 37 rounds.

Weapon	Ammunition	Weight	Magazine	Price
<b>Deuce 1</b>	40mm NATO Low Velocity & Extended Range	2.9 kg	2 Internal	\$819
<b>Deuce 2</b>	37mm Low-Velocity and 37mm Arwen	3.02 kg	2 Internal	\$912

Weapon	ROF	Round	Bulk	SS	Burst	Range	IFR
<b>Deuce 1</b>	SA	APERS	3/5	1	Nil	36	Nil
	SA	CHEM	3/5	1	Nil	100	399
	SA	Ferret	3/5	1	Nil	100	399

<b>Deuce 2</b>	SA	Flash-Bang	3/5	1	Nil	100	399
	SA	Flechette	3/5	1	Nil	72	Nil
	SA	HE	3/5	1	Nil	100	399
	SA	HEAT	3/5	1	Nil	100	399
	SA	HEDP	3/5	1	Nil	100	399
	SA	HE Airburst	3/5	1	Nil	100	399
	SA	ILLUM	3/5	1	Nil	100	399
	SA	WP	3/5	1	Nil	100	399
	SA	Hellhound HE	3/5	2	Nil	137	824
	SA	Draco Thermobaric	3/5	2	Nil	137	824
	SA	Huntir Recon	3/5	2	Nil	137	824
	SA	Baton	3/5	1	Nil	80	Nil
	SA	Irritant Baton	3/5	1	Nil	80	Nil
	SA	Barricade Penetrator	3/5	1	Nil	70	281
	SA	Flare or Star Cluster	3/5	1	Nil	106	425
	SA	Fowling Control	3/5	1	Nil	50	Nil
	SA	Irritant Gas	3/5	1	Nil	106	425
	SA	Multiball	3/5	1	Nil	60	Nil
	SA	Muzzle Blast	3/5	1	Nil	10	Nil
	SA	Rubber Pellet	3/5	1	Nil	80	Nil
	SA	Smoke	3/5	1	Nil	106	425
	SA	Short-Range Smoke	3/5	1	Nil	80	321
	SA	Long-Range Smoke	3/5	1	Nil	133	533

### TRW M-79

Notes: Perhaps the first such weapon introduced into regular military service in any sort of large numbers, the M-79 was first issued to US military units in small numbers in December of 1959. A number of bugs arose during initial service use (particularly regarding the overly-complicated sight used in early production models and premature barrel wear) meant that large scale production and issue did not begin until about 1962. The original design and production was done by TRW, though production was quickly subcontracted to a number of manufacturers in the US. The M-79 figured prominently during the Vietnam War, and is still in use worldwide; many countries still produce them (with and without a license) and some have designed improved versions. Use has spread from military forces to police forces in some cases. Although replaced in many countries by newer grenade launchers, the M-79 is favored in many countries due to its ease of maintenance and use, as well as being rather inexpensive and easy to build (and quite available on the world market). The M-79 (known as the thumper, blooper, thump gun, bloop tube, etc.) uses NATO standard 40x46mm low-velocity grenades; it was the first weapon to fire these grenades.

The M-79 is simple in construction, being little more than a wooden stock with a thick recoil pad, a steel receiver, an aircraft-quality 14-inch aluminum barrel, and a thin wooden handguard. The folding rear sight is a tall, ladder-type leaf sight, with a notch that moves up and down the light assembly to adjust for range as well as back and forth to adjust for windage. For direct fire, the sights are folded down, with a secondary rear notch sight (built into the primary sight) and a high front blade used for aiming. (In practice, firing the M-79 actually calls for a lot of practice, skill, and "Kentucky windage."). For loading, the M-79 breaks open like a single-shot shotgun or rifle; though it's a simple procedure, this can make reloading slow, especially in the hands of an inexperienced gunner. There is a huge variety of 40x46mm low-velocity grenade ammunition available, though this is simplified (perhaps overly so) in the *Twilight 2000 v2.2* rules.

In Vietnam, US troops would sometimes cut the barrel of the M-79 to shorter lengths to make it handier (this was especially common among special operations troops). These chopped lengths could be as much as half the barrel or more, making it into sort of a grenade pistol. Before the introduction of the M-203, M-79s were sometimes seen with both chopped barrel, sights removed, and the stock greatly abbreviated, and the entire affair attached as best possible underneath the handguard of an M-16. These alternate barrel lengths and installations are not noted in the charts below, since they were so variable. Another interesting note, one that probably wouldn't have any bearing on a *Twilight 2000* game: dummy training rounds made for use in the M-79 will not fit into an M-203; in an M-203, those M-79 dummy rounds will get tightly stuck in an M-203, and they are very difficult to force back out.

Weapon	Ammunition	Weight	Magazine	Price
M-79	40mm NATO Low Velocity	2.72 kg	1 Internal	\$543

Weapon	ROF	Round	Bulk	SS	Burst	Range	IFR
M-79	SS	APERS	4	1	Nil	50	Nil
	SS	CHEM	4	1	Nil	100	420
	SS	Ferret	4	1	Nil	100	420
	SS	Flash-Bang	4	1	Nil	100	420
	SS	Flechette	4	1	Nil	90	Nil
	SS	HE	4	1	Nil	100	420

SS	HEAT	4	1	Nil	100	420
SS	HEDP	4	1	Nil	100	420
SS	HE Airburst	4	1	Nil	100	420
SS	ILLUM	4	1	Nil	100	420
SS	WP	4	1	Nil	100	420

### **XM-148**

Notes: This predecessor of the M-203 was developed to combine the firepower of the M-16A1 assault rifle and the M-79 grenade launcher into one package. Prior to this, soldiers would sometimes cut off the stocks and remove the sights of their M-79s and crudely wire them to the handguards of their M-16s and CAR-15s. Also known as the CGL-4 (Colt Grenade Launcher 4, the Colt designation for the weapon), the XM-148 was, like the later M-203, a single-shot grenade launcher designed to be hard-mounted to a standard M-16 or CAR-15. The XM-148 has a small, half-length pistol grip below its barrel; this served to open and close the breech. Once loaded, a large knob on the rear of the receiver was drawn back to cock the weapon. A trigger bar extended from the right side of the XM-148, ending just in front of the M-16 or CAR-15. The trigger bar contained a trigger which was rotated downward; this took the weapon off safe and readied it to be fired. The operator did not have to take his hand off the M-16's pistol grip to fire the XM-148.

While soldiers liked the added firepower, the XM-148, being essentially a developmental weapon, had a number of flaws. The XM-148 was a rather fragile weapon, and used a lot of parts in order to function. The trigger bar was essentially unprotected, and if branches, equipment, fingers, etc., accidentally bent the trigger bar, it would jam the weapon and make it unable to be fired. It could also get hung up on things, especially in the jungles of Vietnam. The unprotected trigger, if extended for firing, could cause the XM-148 to go off accidentally if it got caught up on something, especially since troops tended to carry the M-16/XM-148 loaded and cocked. The weapon could also be fired by pressing on the sear bar even if the XM-148's trigger was not extended. The safety mechanism was, therefore, unreliable. When first M-203s became available in 1969, the XM-148s were replaced in short order by the new weapon, and XM-148s were destroyed, relegated to museums or collectors, or kept in various military arms facilities.

<b>Weapon</b>	<b>Ammunition</b>	<b>Weight</b>	<b>Magazine</b>	<b>Price</b>
<b>XM-148</b>	40mm NATO Low-Velocity	1.41 kg	1 Internal	\$318

<b>Weapon</b>	<b>ROF</b>	<b>Round</b>	<b>SS</b>	<b>Burst</b>	<b>Range</b>	<b>IFR</b>
<b>XM-148</b>	SS	APERS	1	Nil	50	Nil
	SS	CHEM	1	Nil	100	380
	SS	Ferret	1	Nil	100	380
	SS	Flash-Bang	1	Nil	100	380
	SS	Flechette	1	Nil	75	Nil
	SS	HE	1	Nil	100	380
	SS	HEAT	1	Nil	100	380
	SS	HEDP	1	Nil	100	380
	SS	HE Airburst	1	Nil	100	380
	SS	ILLUM	1	Nil	100	380
	SS	WP	1	Nil	100	380

## Round Types and Special Effects or Rules

**APERS:** Short for Anti-Personnel, an APERS round (also known, especially in the US, as Tactical Buckshot) is analogous to a huge shotgun round. As such, APERS rounds have a minimum range as well as following the rules of a shotgun round as far as multiple targets in one blast. The **HVCC** (High Explosive Canister Charge) is a high-velocity version of the APERS round, fired from NATO-compatible grenade machineguns and other launchers able to handle a NATO HV round.

**Flechette** rounds are basically the same idea as APERS rounds, but instead of steel balls, the Flechette round breaks up into lots of small steel or tungsten darts. The darts are small, but being hit by so many flechettes at once is likely to shred opponents. They also have better aerodynamic and penetration properties. Flechette rounds can damage their launcher due to scraping the inside of the barrel's walls; the chance is small, however (GM call here).

**Barricade Penetrator:** This round can punch through closed windows, wooden doors, drapes, etc. It is a rather long round, being over 15 centimeters long. The penetrator itself is a heavy steel nose. After a short time delay (which may be set to ½ to 3 seconds), a small irritant gas follow-on grenade begins to vent its gas. The round is theoretically capable of causing physical harm if it strikes someone directly; that is the bracketed number on the chart below. Likewise, the first penetration number is against materials or an unlucky light vehicle (it is capable of penetrating a windshield, car door, or damage a radiator), the second is the penetration if a person is hit directly.

**Baton:** This round consists of special casing with propellant, with the projectile fired being essentially a short length of wood or plastic, striking the target with sort of a low-velocity bullet. Penetration is not only Nil; a heavy coat or suchlike will protect against the Baton.

**Irritant Baton:** This round looks for the most part like a plastic Baton round; however, the Irritant Baton opens in flight to reveal a petal pattern and a central portion which splats the target with CS or concentrated Capsaicin. In addition to the damage from a Baton round, the target gets a nice dose of irritant; this irritant gas affects only the target.

**Beanbag:** This is pretty much what it sounds like; when fired, the target is hit by a square bag about the size of a paperback book. The bag is filled with small items that are strong but allow the beanbag to "give" a little. A Beanbag round can be filled with rocks similar to fish tank rocks, plastic pellets, or some type of heavy powder such as iron filings – any such material that has enough weight to fly.

**CHEM:** This is sort of a catch-all for a variety of soft and hard chemicals, ranging from tactical smoke to colored signal smoke, from irritant gas to lethal chemicals. These rounds typically have Concussion rating that causes actual damage, and a Burst rating that is a measure of the radius of the cloud of chemicals. For the most part, the Twilight 2000 v2.2 rules ably handle the use of smoke and chemicals, but some chemicals and situations require additional elaboration.

**Irritant Gas** rounds have the standard effects in the Twilight 2000 v2.2 rules if the irritant gas used is CS. If the gas is CN or an equivalent, difficulty rolls are one step harder. If the irritant gas is concentrated capsaicin or an equivalent, difficulty rolls are made at +3. Virtually all military irritant gas rounds are CS-equivalent rounds; police forces also use CS-equivalent rounds, but the use of capsaicin-type rounds is becoming more common in riot control, and police forces rarely have access to CN rounds.

The **Ferret** round was originally meant to provide a round with door penetration; however, it fell into disuse due to poor performance. However, it can still deliver a decent amount of Irritant Gas.

**Flash-Bang** (sometimes called a Crash-Bang or Stun grenade) is a round designed to stun and distract bad guys in a closed space, so they cannot get shots off at friendlies before the bad guys get killed by the good guys. They were first designed to stun hostage takers; though the grenade will stun the hostages too; they will receive assistance from the rescue force instead of bullets. Though a Flash-Bang can be one big bang and flash, most Flash-Bangs use a string of 3-5 bangs and flashes, as it causes more severe and lengthy confusion to hostage takers or rioters.

The **Fowling Control** round is a very unusual round. It is designed for wildlife officers to catch birds like ducks and geese when a pond or wetlands has become overpopulated with birds. When fired, a weighted net quickly unfolds to trap the birds (hopefully) before they can fly off. The net is strong, yet lightweight and easy to pack in a shell (in a factory). When the Fowling Control round is fired, there will be a bang as the charge throws the net out of the launcher, but this is not harmful under most circumstances. The net has a six-meter diameter, and the net deploys over the course of one second, with a minimum range of ten meters. Of course, this round could be used to capture PCs or NPCs; in this case, the PC or NPC gets a Difficult:Agility roll to avoid being caught. If the roll is missed by two points or one point, the character is only partially caught by the net, with the net entangling three adjoining body parts. Catastrophic Failure has no practical special effects; Outstanding Success has a special effect only if the character is within 2 meters of another friendly character; in this case, the character is able to keep the net off one other character who is within 2 meters.

**HE** (High Explosive) is a relatively simple round, consisting largely of a warhead with an outer shell and an internal explosive filler. However, there is some fragmentation effect to the explosion. Sometimes, the fragments result from the warhead jacket itself (often specially-scored inside to increase fragmentation), but more normally, the round will have a thickened jacket to produce more and heavier fragments. The **HVHE** round is a high velocity version of this HE round.

**FRAG-HE** (or simply FRAG) is an HE round with a fragmentation jacket around the warhead explosive, in order to produce more casualties. Unfortunately, the fragmentation jacket tends to suppress the concussive value of the grenade. Sometimes, a Fragmentation round uses fragments embedded directly in the explosive, (usually) with a specially-scored outer warhead wall.

The **Hellhound FRAG-DP** is one of the new generation of medium-velocity grenades that are designed to be fired from some launchers that normally launch 40x46mm low-velocity grenades. However, these rounds can only be fired by launchers which are designed to chamber the longer rounds. A Hellhound FRAG-DP not only has a larger warhead, it has a fragmentation jacket around the warhead. The Hellhound also has a small shaped charge in it, giving it some small antiarmor value.

The unusual Russian round commonly called the **Jumping Frag** is sort of a grenade launcher version of a bounce mine – when the round hits the ground, a secondary charge blows the main charge about 1 meter into the air, where it explodes in the same manner as the typical fragmentation round.

The **HEAB** (High Explosive AirBurst; also called the PP-HE-SD) round can use its full range of features only when fired from a launcher equipped with a special sight module that tells the grenade when to detonate via a radio or laser link. This allows the grenade to detonate in mid-air over an enemy trench, dead space that the enemy may be hiding in, or just beyond a wall that the enemy is behind, for example. Without the proper module, the HEAB round is treated as a simple HE round. The HVHEAB is the same round, packaged to contain a larger high-velocity propellant package.

The **HESH** (High Explosive Squash Head) warhead consists mostly of explosive with a thin warhead shell and a detonator. Damage to armor is a little limited, but usually effective against APCs, IFVs, and light combat vehicles. The HESH round is also useful against building walls and some fortifications.

A **HEAT** (High-Explosive Anti-Tank) round is essentially an HEDP round formed fully into a shaped charge, giving it greatly enhanced penetration against armor. This lessens the amount of explosive for antipersonnel effects. **HEAT-T** is the same round, but with a tandem warhead.

**HEDP** (High-Explosive, Dual-Purpose) has the explosives inside the warhead shaped differently – the warhead is a shaped charge that allows the round to penetrate light armor. The HEDP round also has some blast and fragmentation value, and is still has excellent antipersonnel effect.

The **HE-HC** (High Explosive Hollow Charge) round, peculiar to the Romanian AGA-40 GMG, is similar in concept to the HEDP round. However, rounds for the AGA-40 are some of the longest grenade launcher rounds out there, and this allows for not only a good-sized shaped charge round (another name for a shaped charge is a hollow charge), is allows for a decent explosive charge and a fragmentation jacket.

**ILLUM** (Illumination) rounds are essentially very bright flares, designed to light up the battlefield for a short time. These rounds typically have a simple igniter and a thin casing, perforated in many places so that the illumination compound can't simply fall out of the round, but allow the illumination compound to do its job. The illumination compound is usually a metal-based compound which burns at a high temperature and brightness, such as magnesium oxide or aluminum oxide. The ILLUM round is designed to begin burning at the top of the round's arc; it then descends on a small parachute to slow its fall and increase its useful time.

**Flares** are a subtype of ILLUM rounds that are primarily used for signaling, and are usually not nearly as bright as an illumination round. Flares are almost always colored lights. They too are suspended on a parachute, for the same reasons as above.

**Star Clusters** are themselves a subtype of flares, as when they burst, they throw off several smaller flares. They too are designed primarily for signaling. I have often heard fellow soldiers say that they look a little like fireworks.

For more information on these types of rounds, See [Illumination Devices](#).

**Multiball** rounds are sort of a less-than-lethal version of a fragmentation round. Instead of high explosives and steel balls, the Multiball round has explosives and rubber balls inside.

**Rubber Pellet** rounds are the same basic idea as Multiball rounds, but they use smaller balls of hard rubber, producing a larger fragmentation pattern.

The **Muzzle Blast** round is basically a grenade packed with gunpowder or flash powder; it's a powerful blank round. No warhead is discharged with the Muzzle Blast round; instead, the round causes temporary damage of 3D6 out to 10 meters in an arc of 25 degrees starting at the muzzle of the launcher.

**Slugs** are what they sound like – a solid lead or steel slug, very much like a shotgun slug. They may sometimes be jacketed, and may sometimes have the slug scored to increase the breakup effects. The slug round behaves essentially like a big shotgun slug instead of a normal grenade round. Sometimes slug-type rounds are used in riot control; these rounds are generally made of rubber, and these use the temporary damage rules.

The **Ballistic** round used by the Polish PALLAD grenade launcher is for the most part like a standard slug round, but the slug is made of hard vulcanized rubber. It still hurts just as much as a Slug round, though when a medic treats the victim, he will find that there is more bruising, and possibly broken or cracked ribs. (This is a GM call.) The Russian **Rubber Slug** round is simply another term for the same thing.

**Thermobaric** rounds do their damage by overpressure; this overpressure is usually generated by forming a cloud of highly-

flammable gas or mist, after which a second detonator causes the gas or mist to explode very violently. This kills its victims by massive concussion and secondary flame effects. The description I gave above is a bit windy, since the whole thing takes less than a second for detonation and secondary detonation.

**WP** (White Phosphorus) rounds have very little concussion effect when they explode, but they do spray the target area with chunks of white phosphorus, which react in a pyrophoric manner with oxygen. They will also react in this manner with even the oxygen inside human issue or blood, and (as per the *Twilight 2000 v2.2* rules) they can continue to cause burning damage until they are burned out or smothered with compounds that do not react with the WP (a type of surgical jelly is designed specifically for this use). The White Phosphorus can also cause fires among flammable materials in the area. Finally, White Phosphorus produces a sense cloud of white smoke, in the same manner as a smoke grenade cloud of the same caliber. (For this reason, they are often used by aircraft or helicopters to mark targets that need a more comprehensive working over.) Eventually, White Phosphorus burns into Red Phosphorus crystals, which are for the most part stable and don't burn unless heated to high temperature.

**RP** (Red Phosphorus) is more stable than White Phosphorus, and somewhat less destructive in its effects. (However, most of this less-destructive effect is difficult or impossible to simulate using *Twilight 2000 v2.2* rules.) The easiest thing to simulate using T2K rules is that RP does not react so violently to bodily tissues, and the flame damage of a Red Phosphorus fragment is spread over the course of 10 rounds for each fragment. Igniting the Red Phosphorus requires a hotter primer or pre-explosive charge, as Red Phosphorus requires ten times the temperature to ignite into an explosion (30 degrees Celsius vs 300 degrees Celsius for Red Phosphorus). The smoke cloud from Red Phosphorus is thinner and half the duration of White Phosphorus. Other effects are the same as White Phosphorus. As with White Phosphorus, Red Phosphorus turns into stable Red Phosphorus crystals, though this takes only 20-30 minutes.

Categories below are largely generic, instead of referring to the specific round made by one company or another.

Some rounds have a single number in parentheses. The parentheses around the Baton's (and some other rounds) indicate that the damage inflicted by the Baton is temporary damage, with the exception of torso or head hits, which cause permanent damage of 1 point if the chest is struck or 2 points if the target is struck in the head.

**26.5x80mm MM-1 High-Velocity**

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.1	\$1	1d6x10	Nil
CHEM	0.1	\$1	C2 (B1)	Nil
HE	0.1	\$1	C1 B8	Nil
HEDP	0.1	\$2	C1 B8	3C
ILLUM	0.1	\$1	(B75)	Nil
Slug	0.1	\$1	3	2-Nil
WP	0.1	\$2	C2 B5	Nil

**30x29mm Russian Medium Velocity**

Round	Round Weight	Round Price	Damage	Penetration
HE	0.34 kg	\$2	C2 B9	Nil
HEDP	0.35 kg	\$3	C2 B9	4C

**30x34mm Russian BS-1 Low Velocity**

Round	Round Weight	Round Price	Damage	Penetration
HEAT	0.25 kg	\$4	C1 B8	29C

**35x50mm Chinese Medium-Velocity**

Round	Round Weight	Round Price	Damage	Penetration
HE	0.24 kg	\$2	C2 B11	Nil
HEAT	0.24 kg	\$6	C2 B9	35C
HEDP	0.24 kg	\$4	C2 B11	4C

**35x75mm Swiss High-Velocity**

Round	Round Weight	Round Price	Damage	Penetration
HE	0.36 kg	\$5	C2 B9	21C
ILLUM	0.36 kg	\$4	(B110)	Nil

**37x46mm South African Low-Velocity**

Round	Round Weight	Round Price	Damage	Penetration
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Round	Round Weight	Round Price	Damage	Penetration
Baton	0.14 kg	\$2	(10)	Nil
CS	0.2 kg	\$2	C2 (B2)	Nil
Flash-Bang	0.16 kg	\$3	(C5)	Nil
ILLUM	0.2 kg	\$2	(B170)	Nil

### 37x38mm Low-Velocity (Rifled or Non-Rifled) or Arwen

Notes: Grenades in this caliber were first designed (along with their launchers) in the late 1980s; police wanted a different caliber to further distinguish them from the 38mm rounds; 38mm grenade launchers were first meant to be the launchers to fire less-lethal rounds, but later some lethal rounds were developed in this caliber. The grenades such launchers fire will be a bit strange in the hands of a soldier, though Military Police or civilian Police may be familiar with them.

Round	Round Weight	Round Price	Damage	Penetration
Baton	0.13 kg	\$2	(8)	Nil
Irritant Baton	0.14 kg	\$4	(8) C1 B1	Nil
Barricade	0.21 kg	\$8	C0 B2 [2]	3 [2-Nil]
Penetrator				
Beanbag	0.25 kg	\$3	(9)	Nil
Flare, ILLUM, or Star Cluster	0.18 kg	\$5	(B170)	Nil
Flash-Bang	0.13 kg	\$2	(C4)	Nil
Fowling Control	0.35 kg	\$8	Special	Nil
Irritant Gas	0.21 kg	\$2	C2 (B2)	Nil
Multiball	0.21 kg	\$3	C1 (B9)	Nil
Muzzle Blast	0.22 kg	\$4	C2 (B Special)	Nil
Rubber Pellet	0.22 kg	\$3	C0 B12	Nil
Smoke	0.22 kg	\$2	C0 (B3)	Nil
Short-Range Smoke	0.22 kg	\$1	C0 (B3)	Nil
Long-Range Smoke	0.25 kg	\$4	C0 (B3)	Nil

### 38x38mm MM-1 Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
CHEM	0.22 kg	\$2	C2 (B2)	Nil
HE	0.22 kg	\$2	C3 B12	Nil
HEDP	0.22 kg	\$3	C3 B12	5C
ILLUM	0.22 kg	\$2	(B175)	Nil
WP	0.22 kg	\$5	C2 B8	Nil

### 40x44mm PALLAD Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
Ballistic	0.22 kg	\$2	5	Nil
CHEM	0.22 kg	\$2/\$4/\$8	C2 (B2)	Nil
FRAG-HE	0.25 kg	\$2	C2 B16	Nil
WP	0.25 kg	\$5	C2 B8	Nil

### 40x46mm NATO Low-Velocity

Notes: First designed just before the US involvement in Vietnam, the 40x46mm grenade (known as the 40mm LV or 40mm NATO LV round after the adoption of the 40x53mm High-Velocity grenade designed for use in automatic grenade launchers) was a result of *Project Niblick*, and was adopted in late 1960 for use with the M-79 grenade launcher. The 40x46mm round has an interesting "high-low" firing system – the initial propelling charge used high pressure, which bled into a low-pressure chamber that actually propelled the grenade and lessened the felt recoil. Later, the XM-148 and M-203 grenade launchers were designed to fit under a rifle barrel, and the 40x46mm round has proliferated ever since, as have the different types of rounds available.

Virtually all 40x46 rounds are low-velocity rounds, having an average muzzle velocity of merely 76 meters per second. Recently, as a result of experience in Afghanistan and Iraq, new, longer rounds have become available, with improvements from range and explosive power to innovative designs that employ a parachute-lowered camera to check out a concealed enemy position. Most of these improved rounds are longer than 46mm (most are 51mm long), are actually medium-velocity rounds instead of low-velocity rounds, and will not fit into underbarrel grenade launchers that slide forward to open.

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.12 kg	\$2	13	Nil
CHEM	0.22 kg	\$2/\$4/\$6	C2 (B2)	Nil

Ferret	0.17 kg	\$4	(B2)	1-Nil
Flash-Bang	0.17 kg	\$3	(C5)	Nil
Flechette	0.14 kg	\$4	13	1-Nil
HE	0.23 kg	\$2	C3 B13	Nil
HEAT	0.23 kg	\$6	C2 B10	41C
HEDP	0.23 kg	\$4	C3 B13	4C
HEAB	0.24 kg	\$6	C5 B15	Nil
ILLUM	0.22 kg	\$2	(B195)	Nil
WP	0.22 kg	\$5	C2 B8	Nil
Hellhound FRAG-DP	0.23 kg	\$12	C3 B20	8C

#### 40x47mm Russian Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
CHEM	0.27 kg	\$2/\$4/\$6	C2 (B2)	Nil
Flash-Bang	0.25 kg	\$2	(C7)	Nil
HE	0.25 kg	\$2	C3 B13	Nil
HE-FRAG	0.26 kg	\$3	C2 B16	Nil
ILLUM	0.27 kg	\$2	(B195)	Nil
Jumping FRAG	0.29 kg	\$8	C2 B20	Nil
Thermobaric	0.29 kg	\$12	C8 B12	9C

#### 40x53mm NATO High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HVCC	0.32 kg	\$8	14	1-Nil
HVHE	0.37 kg	\$4	C3 B13	Nil
HVHEDP	0.34 kg	\$6	C3 B13	5C
HEAB	0.4 kg	\$24	C5 B22	5C

#### 40x74.5mm Romanian High-Velocity

Round	Round Weight	Round Price	Damage	Penetration
HE-FRAG	0.49 kg	\$4	C2 B16	Nil
HE-HC	0.49 kg	\$6	C3 B12	23C

#### 43x44mm Russian Low-Velocity

Round	Round Weight	Round Price	Damage	Penetration
Baton	0.32 kg	\$2	(11)	Nil
CS	0.32 kg	\$3	C2 (B2)	Nil
Thermobaric	0.32 kg	\$12	C8 B12	9C
Flash-Bang	0.32 kg	\$3	(C7)	Nil
FRAG	0.32 kg	\$3	C3 B16	Nil
HE	0.32 kg	\$3	C4 B13	Nil
HEAT	0.32 kg	\$5	C2 B11	45C
ILLUM	0.32 kg	\$3	(B225)	Nil
Rubber Slug	0.32 kg	\$2	(11)	Nil
Star Cluster	0.32 kg	\$3	(B45)	Nil

#### 45x82mm Russian Medium-Velocity

Round	Round Weight	Round Price	Damage	Penetration
APERS	0.65 kg	\$7	1d6x12	Nil
Concussion	0.65 kg	\$7	C7	Nil
ILLUM	0.65 kg	\$7	(B250)	Nil

#### 50x200mm Scorpion RAM

Round	Round Weight	Round Price	Damage	Penetration
HEAT	1.02 kg	\$32	C4 B13	55C
HE	1.02 kg	\$22	C5 B16	3C
HEDP	1.02 kg	\$22	C5 B16	7C
HEAT-T	1.02 kg	\$48	C4 B13	44C/55C
HESH	1.02 kg	\$44	C5 B16	31C



FRAG	1.02 kg	\$22	C4 B20	Nil
Thermobaric	1.02 kg	\$88	C10 B12	28C

**55x150mm Russian Medium Velocity**

Notes: HE rounds of this type produce double concussion damage at double the range underwater. Flare rounds come exclusively in white.

Round	Round Weight	Round Price	Damage	Penetration
HE	0.93 kg	\$9	C6 B17	1C
ILLUM	0.93 kg	\$9	(B304)	Nil