HEAVY MACHINE GUNS

The original definition of a heavy machine gun was simply a machine gun that could provide a large amount of sustained fire power on the battlefield. They were belt fed and often water-cooled with heavy barrels, like the Vickers and Maxim guns, and could only be fired effectively from heavy mounts or carriages.

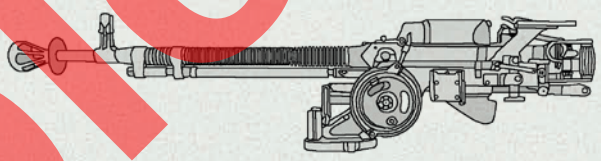
After World War 2 the general-purpose machine guns took the role of both medium and heavy machine guns, and the term heavy machine gun was used to describe machine guns of a heavy, anti-material calibre like 12.7mm NATO, 12.7mm Soviet or 14.5mm Soviet. Weapons of 15.2mm (.60 cal.) or above are usually considered light weapons or auto-cannons.

Most of these heavy machine guns started as aircraft or anti-aircraft armaments, but as planes started using jet engines, they became ineffective in this role. They are now usually deployed as vehicle mounted weapons or as statically emplaced weapons and are effective against soft-skinned ground vehicles, boats, and helicopters.

There are a couple of exceptions to this. The M134 and XM214 are lower caliber weapons capable of extreme rates of fire and sustained firepower. They are fired from heavy tripods or static mounts and have heavy feeding mechanisms and engines to run them. They resemble the heavy machine guns of World War 1 more than the modern, high-caliber heavy machine guns, but are included below since they are certainly not light or general-purpose machine guns either.

DSHKM

The Dushka, or "Degtyarov-Shpagin high-calibre model 38" was originally a built as the DK (Degtyarov high-calibre) in the early 1930s. The weapon was primarliy designed for anti-armor and anti-aircraft use and saw limited introduction to Soviet forces from 1933. However, it had an unwieldy 30 round magazine that was simply of poor design.



DShKM

This problem was fixed by designer Georgi Shpagin who added a belt-feed mechanism to the design and improved its rate of fire. This improved design was formally adopted as the DShK-38 in 1938 and became the standard Soviet heavy machine gun in WWII. It underwent further modernizations in 1946, resulting in the current DShKM version.

As an infantry weapon it still had the drawback that it was mounted on a 120 kg wheeled carriage. The carriage itself is a solid design and can be broken down and reassembled as an AA-tripod, but it was very impractical and had stability issues that reduced the accuracy of long-range fire. Today the DShKM is mostly found adapted to fit a tripod or mounted on vehicles, not many users bother with the wheeled carriage anymore.

The Dushka is almost interely replaced by the NSV in Soviet service, but it is still in use by several ComBloc countries and other nations around the world. There are also large stockpiles of these weapons particularly in Eastern Europe. Variants are produced locally in several ComBloc countries.

WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
DShKM	HMG	12.7mm Soviet	5	4	4	4	14	50B	-1	-3	7	FA	1895	C/C/R

[1] A DShKM on its original carriage does not have ENC, as it cannot be picked up and carried. See p. 23.

KPV

The KPV machine gun entered Soviet service in 1949 as an infantry weapon for anti-armor use. It is chambered in 14.5mm Soviet, originally designed for the PTRS and PTRD anti-tank rifles. In the 1960s the infantry version (designated PKP) went out of production as it was deemed to heavy and cumbersome for its intended use, and the KPV is generally now only used as a vehicle mounted machine gun on BTR's and BRDM-2's (designated KPVT), on towable anti-aircraft systems (the ZPU-1, ZU-2, ZPU-2, or ZPU-4), or on smaller naval vessels (designated MTPU).

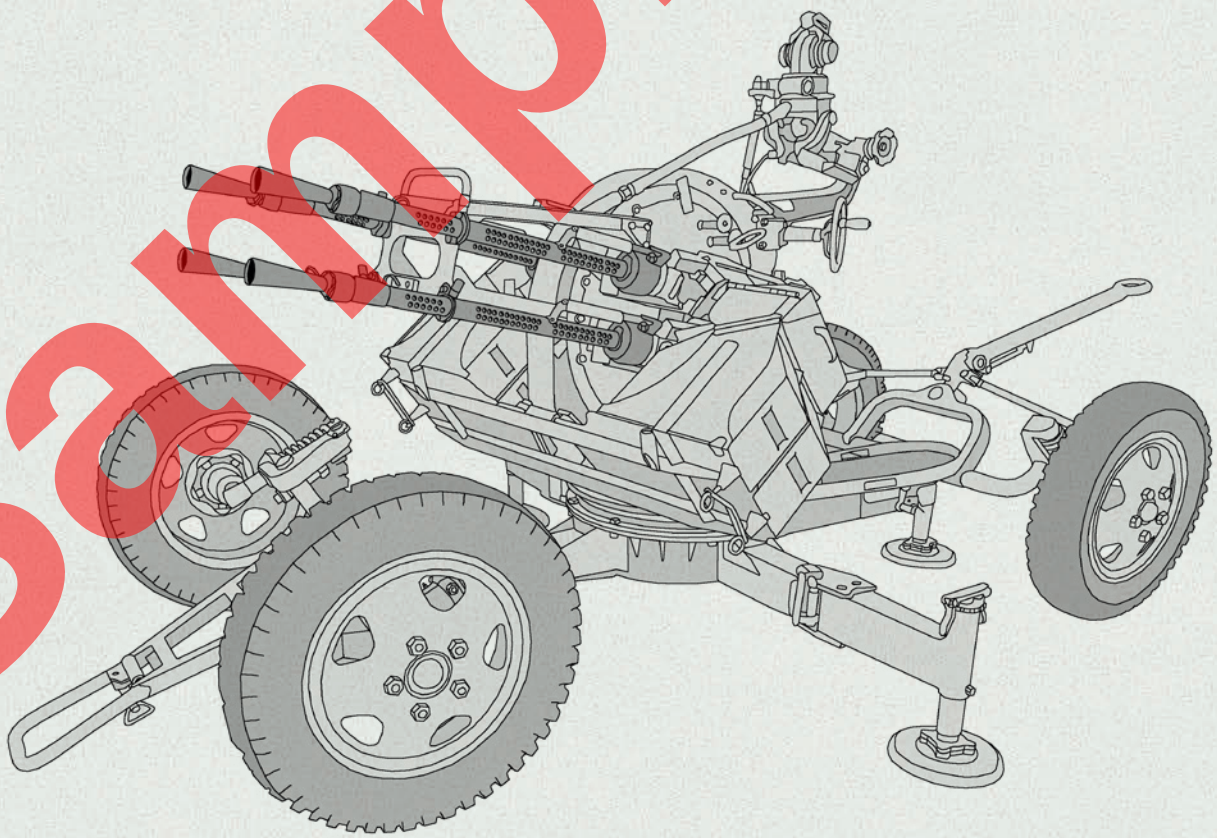
The number in the ZPU designation indicates the number of KPVs mounted in the system. The one and two machine gun variants come on a single axel chassis, while the ZPU-4 has two axels and weighs nearly two tons. The single machine gun ZPU-1 can be broken down into 5 pieces of about 80 kgs each, and is technically man-portable, but this is usually only done over short distances to move it into emplacements where vehicles can't tow it.

Individual KPV's that have been salvaged from vehicles or ZPUs can still be found as static guns or on vehicles with improvised mounts. Even entire ZPU-4 systems are sometimes found mounted on flatbed trucks, and there are also early BTR-40 and BTR-152 variants that mount the ZPU-2 on the back as a self-propelled AA gun.

The KPV has been deployed in more than 50 different countries and are produced in different configurations by, among others, China, Poland, Bulgaria, Romania, and India.

WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
KPV	HMG	14.5mm Soviet	5	4	4	3	20	40B	-1	-3	9	FA	2405	C/C/R

[1] This stat line is for a single KPV; a ZPU-1. ZU-2 or ZPU-2 uses the same stat line but has a ROF of 7 and MAG of 80B. A ZPU-4 has a ROF of 10 and a MAG of 160B. All ZPU variants counts as being mounted on a vehicle mount (+2 RNG) and are not man-portable and have no ENC. Over short distances they can be dragged and pushed by at least 2 (ZPU-1 and ZU-2), 3 (ZPU-2) or 4 (ZPU-4) people (even more over difficult terrain). Otherwise, they must be towed by a vehicle or beast of burden.



ZPU-4

M134 MINIGUN

The M134 Minigun is an externally operated, rotary-barrel machine gun in 7.62mm NATO. The concept of such a weapon was first seen in 1893 when Richard Gatling submitted a patent for a motorized version of his famous Gatling gun. Germany had also been experimenting with rotary-barrel designs during WWII, which led to the U.S. development of the 20mm M61 Vulcan Auto-cannon by General Electric in the 1950's. The potential for a more portable, smaller calibre version of this weapon was recognized, and GE designed the M134 Minigun in 1960.

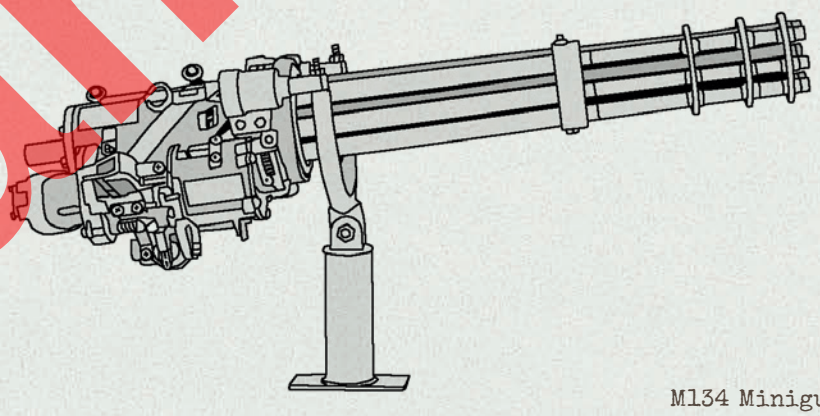
Around 10.000 Miniguns were acquired by the U.S. military during the Vietnam War, mostly for use as helicopter armaments and on ground support aircraft, either operated by door-gunners, or in remotely operated gun pods. It was also used by the Navy and Marines as defensive weapons on surface ships, as well as by the British Navy under the designation Mk 44. There are many different variations and designations of this weapon, depending on its use and branch of service, but the gun itself is principally the same in most cases.

The M134 has six rotating barrels and is operated by an external power source. Usually by an electrical engine with a 24V battery, but there are pneumatically or hydraulically operated versions as well. In any case the weapon cannot function without a motor running it. Having six rotating barrels allows the barrels to cool effectively, but also increases the rate of fire. When a barrel fires, two barrels are in the process of extracting their spent casings, and three other barrels are in different stages of loading a new unspent cartridge. The system never has to wait for loading and extraction, which allows for extreme rates of fire. Theoretically the M134 can fire 6000 rounds per minute, although in most applications this is tuned to around 2000-4000 rounds per minute.

In addition to the gun, the battery and electrical motor the M134 also needs a feeder module to accept standard linked M13 belts. This electrically operated feeder strips the ammunition from the belts and feeds them into the M134 loading mechanism. Depending on the application ammunition to the M134 is carried in drums of between 500 and 5000 rounds.

The M134 Minigun is usually found as mounted weapons, but it is possible to strip the weapon off a vehicle and use it as a stand-alone weapon. You would need a heavy tripod, anti-aircraft tripod or pintle mount to attach it to, and you would need to carry the electrical motor, battery, feeder module, weapon, and a whole lot of ammunition.

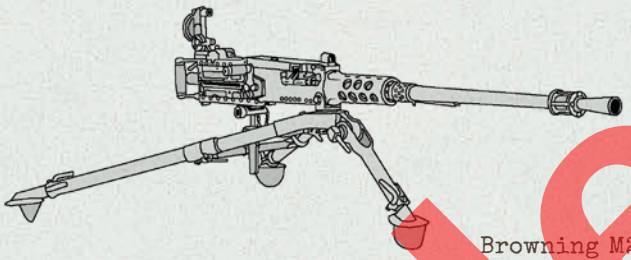
WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
M134	HMG	7.62mm NATO	5	10	3	4	8	500B[M]	0	-2	6.5	FA	3040	S/S/S



M134 Minigun

M2HB

The M2 Heavy Barrel or M2 Browning machine gun is the primary heavy machine gun of the NATO countries and have been in service since the 1930s. It has one of the most impressive service records of any small arm in history.



Browning M2HB

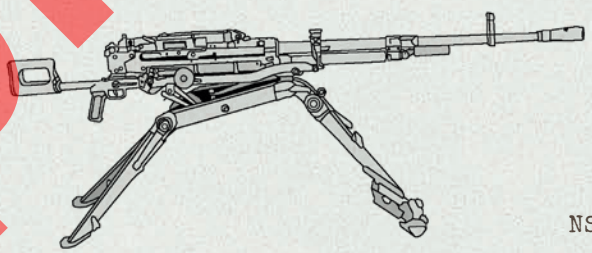
The M2 was originally designed by John Browning based on his earlier M1919 machine gun. His purpose was specifically to create a machine gun that could defeat the heavily armoured Junkers J.I airplane. However, he passed away in 1926 before his new M1921 water-cooled design left the experimental stage. After his death, his designs were developed further by S.H. Green that tried to overcome the challenges Browning had been struggling with. This work led to development of the M2 machine gun that went into production with Colt in 1933. The major advancement of the design by Green was the introduction of the HB-variant that ditched the water-cooling for a heavier, air-cooled barrel, but still reducing the total weight of the weapon from 55 kg to 38 kg. This quickly became the standard variant in addition to the AN/M2 variant that served as the standard armament for U.S. aircraft during World War 2.

The M2HB, or "Ma Deuce", can be carried into the field and fired from its 20 kg M3 tripod, but it is most often found as a vehicle mounted weapon, or deployed as a statically emplaced machine gun around installations or bases. It is in service with a large number of countries around the world and has been produced by several license holders like FN Herstal.

WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
M2HB	HMG	12.7mm NATO	5	3	4	4	16	100B[M]	-1	-3	7	FA	2070	C/C/C

NSV

The NSV's design was initially entered into the competition to become the new general purpose machine gun of the Soviet Union in 1958 by G.I. Nikitin and Y. Solokov, chambered in 7.62mm Russian. However, their design lost the trials against Kalashnikov's PK machine gun.



NSVS

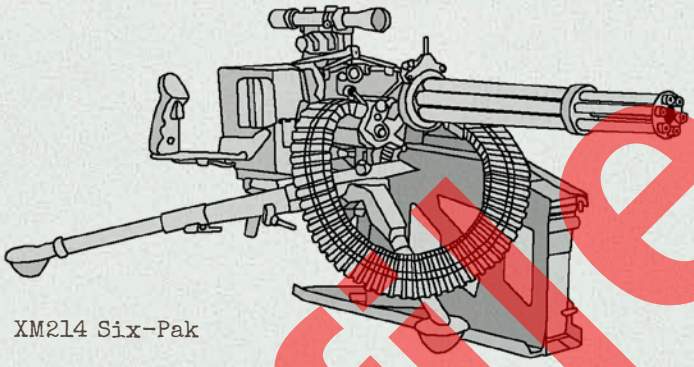
Ten years later when the Soviet Union started to look at replacing their DShK/DShKM machine guns, the Nikitin and Solokov design was enlarged and redesigned to accept the 12.7mm Soviet cartridge. This NSV, or "Utyos", heavy machine gun was introduced into service in 1972 as the new standard heavy machine gun of the Soviet Union. Its high rate of fire makes it well-suited to anti-aircraft fire, and the 12.7 mm Soviet round is powerful enough to threaten light armor or fortifications.

The infantry variant is mounted on a heavy tripod and is designated NSVS, the tank variant is called NSVT and is used as an anti-aircraft gun on T-72 and T-64 tanks. The NSV has seen service in several countries including Armenia, Bulgaria, Czech Republic, Finland, Poland, and the former Yugoslav Republic. It is made under license by Bulgaria (MG-U) and Poland (NSW).

WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
NSV	HMG	12.7mm Soviet	5	5	4	4	14	50B	-1	-3	6	FA	1955	C/C/R

XM214 MICROGUN

In the late 1960's General Electric developed the XM214 Microgun, a 5.56mm NATO variant of the M134 Minigun. The XM214 was intended to fill the role of the M134 while reducing the overall weight of the weapon and having much lighter ammunition. As aircraft have limited cargo capacity, this seemed to make a lot of sense. However, the 5.56mm NATO cartridge was not effective enough for this purpose, and the XM214 was never adopted for this role.



XM214 Six-Pak

GE tried to keep the project alive by designing a man-portable variant called the Six-Pak. It could be mounted on the M122 tripod and came with a self-contained power-unit (motor and battery), a quick-detach feeding chute, and an ammunition system consisting of two 500-round ammunition belt containers. One container could be reloaded while the other was feeding the weapon and the gun was tuned to fire 3000 rounds per minute.

The weapon could be broken into two units for transport; the gun, tripod and motor, and the feeding system and ammunition containers. Each part still weighed almost 20 kilograms and was cumbersome to carry. The U.S. Army was not interested in the system, and the XM214 project was scrapped.

It is unclear how many XM214 Microguns were produced for testing as aircraft armaments, but it is believed that only about 10 man-portable Six-Paks were produced and purchased by the U.S. Army for testing purposes. These are still part of the armory, and some were deployed to Europe with U.S. troops in the run up to WWIII.

WEAPON	TYPE	AMMO	REL	ROF	DAM	CRIT	RNG	MAG	ARM	INC	ENC	NOTES	COST	AVAIL
XM214 Six-Pak	HMG	5.56mm NATO	5	10	2	3	7	500B[M]	0	0	6	FA	2980	R/R/R

FEEDING SYSTEMS AND REFILLING

Reloading your weapon with a magazine or belt is handled as described in the Player's Manual, but sometimes it can be useful to consider how long it takes to refill those feeding devices. This is only relevant in time critical situations. You can assume that the player characters can reload their belts and magazines during SHIFTS of travelling, resting etc.

Reloading normal magazines with loose ammo can be done at a rate of ~120 rounds per STRETCH. Drum magazines are more time consuming to reload, as they usually must be partially disassembled, or the spring has to be unwound and rewound again. This can be done at a rate of ~80 rounds per STRETCH.

For belts, there are two major types: non-disintegrating belts (RPD, PKM, KK62, AA-52, Vz.59, KPV, DShK and NSV) can be reloaded at a rate of ~100 rounds per STRETCH. These belts are fed through the machine gun whole and functions like a magazine in game terms.

Disintegrating belts (all M9, M13 and M27 belts) consists of individual links that are spat out of the machine gun one-by-one as the machine gun fires. If the players have recovered spent links these belts can be reassembled and reloaded at a rate of ~60 rounds per STRETCH. It is reassembled at the same time that it is reloaded, as the cartridge makes up a part of the belt itself.

If the player can take the time to search the battlefield, a successful RECON test (takes one STRETCH) should recover 35-85% of the spent links, depending on the conditions. A failed test should only recover half of that.

After a firefight Lars, the Swedish machine gunner, has expended about 100 rounds from his Ksp 90. He searches for a stretch and succeeds his RECON test, but since he was running around in the rain on muddy ground, the Referee only allows him to recover 40 links.

For simplicity you can ignore the difference between belts, and either treat all belts as single use, or treat all belts as reloadable at a rate of ~80 rounds per STRETCH.