

## Chapter 1 : First World www.nxgvision.com - Weapons of War: Machine Guns

*A machine gun is a fully automatic mounted or portable firearm designed to fire bullets in rapid succession from an ammunition belt or www.nxgvision.com all fully automatic firearms are machine guns.*

The search for greater firepower has not been limited to shoulder firearms. In addition to personal defense weapons, a variety of infantry-support weapons classed as machine guns have been subjected to intense experimentation. Modern machine guns are classified into three groups. The light machine gun, also called the squad automatic weapon, is equipped with a bipod and is operated by one soldier; it usually has a box-type magazine and is chambered for the small-calibre, intermediate-power ammunition fired by the assault rifles of its military unit. The medium machine gun, or general-purpose machine gun, is belt-fed, mounted on a bipod or tripod, and fires full-power rifle ammunition. Since the term has designated an automatic weapon firing ammunition larger than that used in ordinary combat rifles; the most widely used calibre is .30. Bren machine gun Bren machine gun. Robert DuHamel From the introduction of firearms in the late Middle Ages, attempts were made to design a weapon that would fire more than one shot without reloading, typically by a cluster or row of barrels fired in sequence. In 1806 James Puckle in London patented a machine gun that was actually produced; a model of it is in the Tower of London. The introduction of the percussion cap in the 19th century led to the invention of numerous machine guns in the United States, several of which were employed in the American Civil War. In all of these either the cylinder or a cluster of barrels was hand-cranked. The most successful was the Gatling gun, which in its later version incorporated the modern cartridge, containing bullet, propellant, and means of ignition. Hiram Stevens Maxim of the United States was the first inventor to incorporate this effect in a weapon design. The Maxim machine gun c. 1884. Some of these utilized another property of the even burning of smokeless powder: As a result, during World War I the battlefield was from the outset dominated by the machine gun, generally belt-fed, water-cooled, and of a calibre matching that of the rifle. Except for synchronizing with aircraft propellers, the machine gun remained little changed throughout World War I and into World War II. Since then, innovations such as sheet-metal bodies and air-cooled, quick-changing barrels have made machine guns lighter and more reliable and quick-firing, but they still operate under the same principles as in the days of Hiram Maxim. Maxim machine gun Maxim machine gun being used by U. Army soldiers during maneuvers in Texas, 1918. The machine gun thus requires no outside source of power, instead using the energy released by the burning propellant in a cartridge to feed, load, lock, and fire each round and to extract and eject the empty cartridge case. This automatic operation may be accomplished by any of three ways: In recoil operation, the bolt is locked to the barrel immediately after a round is fired; both the bolt and barrel recoil, but the barrel is then returned forward by its own spring while the bolt is held to the rear by the locking mechanism until a fresh round has fallen into place in the opened breech. More common than either of these two methods is gas operation. In this method, the energy required to operate the gun is obtained from the pressure of gas tapped off from the barrel after each cartridge explodes. In a typical gas-operated machine gun, an opening or port is provided in the side of the barrel at a point somewhere between the breech and the muzzle. When the bullet has passed this opening, some of the high-pressure gases behind it are tapped off through the hole and operate a piston or some similar device for converting the pressure of the powder gases to a thrust. This thrust is then used through a suitable mechanism to provide the energy necessary for performing the automatic functions required for sustained fire: Learn More in these related Britannica articles:

## Chapter 2 : Ruger® Firearms

*List of machine guns. Jump to navigation Jump to search This is a list of machine guns and their variants. The tables are sortable. Bailey machine gun rifle.*

Walther P38 - 9x19mm Burmese pirate leader with a Walther P Tokarev TT - 7. An airsoft reproduction of the M used by Sylvester Stallone in the film. The weapon is a standard MA1 with the addition of ambidextrous safety for old-type frames, mag well and extended slide stop. This configuration was chosen to make the weapon appropriate to a U. Army veteran of the caliber. Rambo fires his MA1 pistol. Trautman Richard Crenna in what appears to be a sequence from the original film First Blood. This actually was the original ending to the film, but was changed after extremely negative reactions by viewers from test screenings. During a flashback to his old days of killing, Rambo is seen being shot by Col. Trautman Richard Crenna in what appears to be the original film First Blood. This actually was the original ending to the film, but was changed when it is decided that Rambo should live. The actual deleted scene from the original First Blood. The actor Maung Maung Khin, who plays the villain, was a real life Karen resistance fighter, who escaped to Thailand where the movie was filmed to reunite with his relatives. Stallone wanted someone who understood the nature of the Burmese military and luckily had an actor with real life dealings with their brutality. A Burmese soldier prepares to execute the mercenaries with his AKM. Norinco Type 56 There are many AK types in the movie, and upon further study, most of the models will be identified. But one of the obvious ones is the Norinco Type Norinco Type 56 fixed stock variant - 7. Lewis picks up a Norinco Type 56, this one with an AKM-style ribbed receiver cover and a laminate buttstock. Norinco Type 56 fixed stock variant with under-folding bayonet - 7. This is similar to the same short rifle that Claire Danes fires in Terminator 3: Rise of the Machines. Most noticeable because their trigger guards are thicker than normal and sometimes the front sight has no hole and are solid rubber blocks. Burmese Junta soldier with rubber AK slung on his back, the front sight on this has a hole in it. Burmese Junta soldier holds a rubber AK rifle. M16A1 Karen rebels carry M16A1 rifles as well. M16A1 with 30 round magazine - 5. M16 SP1 When Rambo Sylvester Stallone has a flashback to his old days of killing, scenes from the original film First Blood are shown when he tries to pick up an M16 SP1 rifle in the police station to fight the police outside before Colonel Trautman Richard Crenna stops him. M16 SP1 slab-side with birdcage flash suppressor - 5. This is the exact same weapon that Independent Studio Services originally built for use by Tyrese Gibson in Transformers although the camouflage paint job had worn off during shooting on the earlier film and had to be re-applied for Rambo. Colt M4A1 Carbine - 5. However, it is very unlikely a real optic would be used in a movie. SIG SG - 5. This rifle cannot be confused with a similar Norinco Type 56, because it has a bakelite grip, ribbed dust cover, palm swell handguards and non-ported gas tube. This appears to be a custom AKM with a Chinese "pig sticker" spike underfolding bayonet. The bolt carrier is also blued, a feature Chinese AKs rarely have. The magazine, however, does appear to be a Type 56 Chinese "flat back" magazine. Barrett MCQ sniper rifle -. The business end of a Barrett MCQ. Detail shot of the side of the Barrett MCQ. Mossberg with heat shield, bayonet lug, and M4-type stock - 12 Gauge Lewis exits the boat with his shotgun. Lewis Graham McTavish carries his shotgun on the right. Lewis Graham McTavish with a custom Lewis Graham McTavish with his custom Closer shot, detailing the Magpul M93A stock. Special Graham McTavish walks the set with his custom Mossberg The barrels grew red hot and the heat shield not only helped protect the crews, the added area improved the heat dissipation qualities of the barrel. It is not the standard air cooled Browning M2HB that is usually seen mounted on vehicles. Sylvester Stallone was originally going to wield the Browning M2 by hand. They decided to mount it on the back of a truck instead but the recoil was so immense that it ripped off the truck floor. They bolted the mount down on the truck frame and that is what is seen in the film. An electronically fired version of the M2 was used as the main gun in many U. Rambo charges the M2. Rambo uses the M2 to obliterate the driver. Rambo lets out his war cry while on the M2. Note how the belt box is for 5. Browning M2 Aircraft version is also seen mounted on the Burmese patrol boat with a snail drum magazine common on Naval boat mounted guns. Good side shot of M2. Rambo pours gasoline on the Browning M2HB

before burning down the boat. The missing primers on the rounds indicate that they are dummy cartridges, rather than live ammunition. The machine gun is also seen on the Burmese patrol boat. MAG 58 used by a Burmese sailor. It appears to have an M-style flash hider. First Blood Part II. M60E3 Machine Gun - 7. M60 Machine Gun - 7. M18A1 Claymore anti-personnel mine Rambo uses a Claymore mine to set a booby-trap for the pursuing soldiers. He has a secondary small charge on the back of the mine. M69 training grenade - an inert version of the M67 High-Explosive Fragmentation hand grenade. The real live version has a more brownish color and has painted factory markings on the body. En-Joo Tim Kang grabs an M67 hand grenade from a pouch. British Grand Slam Bomb A large bomb is seen partly buried in the Burmese jungle and described by the movie as a "Tallboy" dropped by the British during the Second World War; the tail section shown, however, has a much thicker tail-cone than the Tallboy and seems to have been based on the larger "Grand Slam". Though some audiences thought that the explosion mimicked a nuclear explosion more than anything, a Grand Slam bomb contains 9, lb of Torpex D1 explosive; even the "Tallboy," just under half the size of a "Grand Slam," was quite capable of creating an explosion that displaced a million cubic feet of earth. Even if a Grand Slam had been dropped, there would be no point doing so in the middle of nowhere far from any reinforced structure, and in the soft earth shown it would have plunged dozens of feet underground and been left completely buried. About the only way the situation shown would transpire is if the bomber carrying it had ditched or crashed while flying low and shed the bomb some distance from the crash site. The British "Grand Slam" bomb, unexploded in the jungle for over 60 years. M1 Mortars are used by Junta forces and the Karen rebels. M1 Mortar - 81mm M1 81mm Mortar used by Junta troops. M1 81mm Mortar used by Junta troops. Burmese Junta soldier using the flamethrower to torch a hut. Burmese sailor on the patrol boat use the same flamethrower, this time behind a cradle-mounted gun shield. It can be differentiated from the compound bow he uses throughout the rest of the film by its lack of cam wheels. Rambo fishes with ML Rambo holds his bow on Lewis Graham McTavish. Sylvester Stallone actually stayed up all night filming the scene of him building the knife like you see in the film, although due to time restrictions, he had to do it all at once without cooling the blade. They went through about seven pairs of heat protective gloves due to this. Sly claims after making the knife, he had a rather warm handshake. The Machete knife used by Rambo in the film. Image supplied by www. Rambo disembowels an enemy with his machete. Rambo with his machete. Special During the introduction "The Weapons of Rambo" special feature, they show a nice close-up of the machete from a movie poster. Sylvester Stallone practices with the machete. This sequence was restored in some TV edits of the film. Survival knife from the second Rambo film. Rambo with his Part II knife in a deleted scene. Rambo tosses his knife onto the burning boat.

*The Thompson submachine gun or Tommy gun was invented by General John T. Thompson. It was the first handheld machine gun. Thompson was driven by the thought of creating a handheld machine gun that would help end the First World War.*

Unlocking and removing the spent case from the chamber and ejecting it out of the weapon as bolt is moving rearward Loading the next round into the firing chamber. Usually the recoil spring also known as main spring tension pushes bolt back into battery and a cam strips the new round from a feeding device, belt or box. Cycle is repeated as long as the trigger is activated by operator. Releasing the trigger resets the trigger mechanism by engaging a sear so the weapon stops firing with bolt carrier fully at the rear. The operation is basically the same for all locked breech automatic firearms, regardless of the means of activating these mechanisms. There are also multi-chambered formats, such as revolver cannon , and some automatic weapons, including many submachine guns , the Schwarzlose machine gun etc. Design[ edit ] Most modern machine guns use gas-operated reloading , which taps off some of the propellant gas from the fired cartridge, using its mechanical pressure to unlock the bolt and cycle the action. The Russian PK machine gun is an example. Another efficient and widely used format is the recoil actuated type, which uses the guns recoil energy for the same purpose. Machine guns such as the M2 Browning and MG42 , are of this second kind. A cam, lever or actuator absorbs part of the energy of the recoil to operate the gun mechanism. An externally actuated weapon uses an external power source, such as an electric motor or even a hand crank to move its mechanism through the firing sequence. Most modern weapons of this type are called Gatling guns or, in reference to their driving mechanism, chain guns. Gatling guns have several barrels each with an associated action on a rotating carousel and a system of cams that load, cock, and fire each mechanism progressively as it rotates through the sequence; essentially each barrel is a separate bolt-action rifle using a common feed source. The continuous nature of the rotary action allows for an incredibly high cyclic rate of fire, often several thousand rounds per minute. Rotary guns are less prone to jamming than a gun operated by gas or recoil, as the external power source will eject misfired rounds with no further trouble, but this is not possible in the rare cases of self-powered rotary guns. Rotary guns are generally used with large rounds, 20mm in diameter or more, offering benefits of reliability and firepower, though the weight and size of the power source and driving mechanism makes them impractical for use outside of a vehicle or aircraft mount. Revolver cannons , such as the Mauser MK , were developed in World War II by the Germans to provide high-caliber cannons with a reasonable rate of fire and reliability. A recoil-operated carriage holds a revolving chamber with typically five chambers. As each round is fired, electrically, the carriage moves back rotating the chamber which also ejects the spent case, indexes the next live round to be fired with the barrel and loads the next round into the chamber. The action is very similar to that of the revolver pistols common in the 19th and 20th centuries, giving this type of weapon its name. Firing a machine gun for prolonged periods produces large amounts of heat. In a worst-case scenario this may cause a cartridge to overheat and detonate even when the trigger is not pulled, potentially leading to damage or causing the gun to cycle its action and keep firing until it has exhausted its ammunition supply or jammed this is known as cooking off , distinct from runaway fire where the sear fails to disengage when the trigger is released. To prevent this, some kind of cooling system is required. Early machine guns were often water-cooled ; while very effective, the water also added considerable weight to an already bulky design. Air-cooled machine guns often feature quick-change barrels often carried by a crew member , passive cooling fins, or in some designs forced-air cooling, such as that employed by the Lewis Gun. Advances in metallurgy and use of special composites in barrel liners allow for greater heat absorption and dissipation during firing. The higher the rate of fire, the more often barrels must be changed and allowed to cool. To minimize this, most air-cooled guns are fired only in short bursts or at a reduced rate of fire. Some designs – such as the many variants of the MG42 – are capable of rates of fire in excess of 1, rounds per minute. In weapons where the round seats and fires at the same time, mechanical timing is essential for operator safety, to prevent the round from firing before it is seated properly. Machine

guns are controlled by one or more mechanical sears. When a sear is in place, it effectively stops the bolt at some point in its range of motion. Some sears stop the bolt when it is locked to the rear. Other sears stop the firing pin from going forward after the round is locked into the chamber. Almost all machine guns have a "safety" sear, [ citation needed ] which simply keeps the trigger from engaging. From rear to front: The first successful machine-gun designs were developed in the mid-19th century. The key characteristic of modern machine guns, their relatively high rate of fire and more importantly mechanical loading, [4] first appeared in the Model Gatling gun, which was adopted by the United States Navy. Gatling also experimented with electric-motor-powered models; this externally powered machine reloading has seen use in modern weapons as well. Early rapid-firing weapons[ edit ] Detail of an 8-chambered matchlock revolver Germany c. One is a shoulder-gun-length weapon made in Nuremberg, Germany, circa 1500. Another is a revolving arquebus, produced by Hans Stöpler of Nuremberg in 1550. Perhaps the earliest examples of predecessors to the modern machine gun are to be found in China. This was a repeating cannon fed by a hopper which fired its charges sequentially. This weapon was also hopper-fed and never went into mass production. Another early revolving gun was created by James Puckle, a London lawyer, who patented what he called "The Puckle Gun" on May 15, 1718. It was a design for a manually operated 1. According to Puckle, it was able to fire round bullets at Christians and square bullets at Turks. In 1794, Philadelphia gunsmith Joseph Belton offered the Continental Congress a "new improved gun", which was capable of firing up to twenty shots in five seconds; unlike older repeaters using complex lever-action mechanisms, it used a simpler system of superposed loads, and was loaded with a single large paper cartridge. Volley guns such as the Mitrailleuse and double barreled pistols relied on duplicating all parts of the gun, though the Nock gun used the otherwise-undesirable "chain fire" phenomenon where multiple chambers are ignited at once to propagate a spark from a single flintlock mechanism to multiple barrels. Pepperbox pistols also did away with needing multiple hammers but used multiple manually operated barrels. Revolvers further reduced this to only needing a pre-prepared cylinder and linked advancing the cylinder to cocking the hammer. However, these were still manually operated. A detachment of French infantry with 2 Saint-Etienne Model machine guns c. 1860. This weapon used multiple barrels arranged side by side, fed by a revolving cylinder that was in turn fed by hoppers, similar to the system used by Nichols. The gun could be fired by percussion or electricity, according to the author. In his patent, Bessemer describes a hydropneumatic blowback-operated, fully automatic cannon. Part of the patent also refers to a steam-operated piston to be used with firearms but the bulk of the patent is spent detailing the former system. This weapon was a cannon that fed from a type of open-ended tubular magazine, only using rollers and an endless chain in place of springs. The weapon featured mechanized loading using a hand crank linked to a hopper above the weapon. The weapon featured a single barrel and fired through the turning of the same crank; it operated using paper cartridges fitted with percussion caps and inserted into metal tubes which acted as chambers; it was therefore functionally similar to a revolver. The weapon was demonstrated to President Lincoln in 1862. The Union Army eventually purchased a total of 54 of the weapons. However, due to antiquated views of the Ordnance Department the weapons, like its more famous counterpart the Gatling Gun, saw only limited use. The Gatling gun, patented in 1839 by Richard Jordan Gatling, was the first to offer controlled, sequential fire with mechanical loading. It first saw very limited action in the American Civil War; it was subsequently improved and used in the Franco-Prussian war and North-West Rebellion. Many were sold to other armies in the late 19th century and continued to be used into the early 20th century, until they were gradually supplanted by Maxim guns. Early multi-barrel guns were approximately the size and weight of contemporary artillery pieces, and were often perceived as a replacement for cannon firing grapeshot or canister shot. Friberg of the Swedish army patented a fully automatic recoil-operated firearm action and may have produced firing prototypes of a derived design around 1880. The weapon was made up of four barrels placed side by side that replaced the manual loading of the French mitrailleuse with a mechanical loading system featuring a hopper containing 41 cartridges at the breech of each barrel. Although it was used effectively at times, mechanical difficulties hindered its operation and it was ultimately abandoned shortly after the war ended. He is operating an MG 08, wearing a Stahlhelm and cuirass to protect him from shell fragments, and protected by rows of barbed wire and sandbags. The first practical self-powered machine gun was invented in 1884 by Sir Hiram Maxim. The Maxim machine gun used the

recoil power of the previously fired bullet to reload rather than being hand-powered, enabling a much higher rate of fire than was possible using earlier designs such as the Nordenfelt and Gatling weapons. Maxim also introduced the use of water cooling, via a water jacket around the barrel, to reduce overheating. The design required fewer crew and was lighter and more usable than the Nordenfelt and Gatling guns. First World War combat experience demonstrated the military importance of the machine gun. The United States Army issued four machine guns per regiment in 1914, but that allowance increased to 12 machine guns per regiment by 1917. The crew are wearing gas masks. Heavy guns based on the Maxim such as the Vickers machine gun were joined by many other machine weapons, which mostly had their start in the early 20th century such as the Hotchkiss machine gun. The biggest single cause of casualties in World War I was actually artillery, but combined with wire entanglements, machine guns earned a fearsome reputation. Another fundamental development occurring before and during the war was the incorporation by gun designers of machine gun auto-loading mechanisms into handguns, giving rise to semi-automatic pistols such as the Borchardt s, automatic machine pistols and later submachine guns such as the Beretta. Machine guns were mounted in aircraft for the first time in World War I. Immediately this raised a problem. The most effective position for guns in a single-seater fighter was clearly, for the purpose of aiming, directly in front of the pilot; but this placement would obviously result in bullets striking the moving propeller. By mid-1917, the introduction of a reliable gun synchronizer by the Imperial German Flying Corps made it possible to fire a closed-bolt machine gun forward through a spinning propeller by timing the firing of the gun to miss the blades. The Allies had no equivalent system until 1918 and their aircraft suffered badly as a result, a period known as the Fokker Scourge, after the Fokker Eindecker, the first German plane to incorporate the new technology. Interwar era and World War II[ edit ] As better materials became available following the First World War, light machine guns became more readily portable; designs such as the Bren light machine gun replaced bulky predecessors like the Lewis gun in the squad support weapon role, while the modern division between medium machine guns like the M Browning machine gun and heavy machine guns like the Browning M2 became clearer. New designs largely abandoned water jacket cooling systems as both undesirable, due to a greater emphasis on mobile tactics and unnecessary, thanks to the alternative and superior technique of preventing overheating by swapping barrels. MG 42 with retracted bipod The interwar years also produced the first widely used and successful general-purpose machine gun, the German MG 42. While this machine gun was equally able in the light and medium roles, it proved difficult to manufacture in quantity, and experts on industrial metalworking were called in to redesign the weapon for modern tooling, creating the MG 43. Submachine guns evolved during the war, going from complex and finely made weapons like the Thompson submachine gun to weapons designed for mass-production and easy replacement like the Sten gun. Experience in close-range city combat led to the German military desiring a weapon representing a compromise between the high fire volume of the SMG and the accuracy of a full-size rifle; after a false start with the FG 42, this led to the development of the MP 44 select-fire assault rifle, the first weapon to be called such. Cold War[ edit ] A U. Experience with the MG42 led to the US issuing a requirement to replace the aging Browning Automatic Rifle with a similar weapon, which would also replace the M1919; simply using the MG42 itself was not possible, as the design brief required a weapon which could be fired from the hip or shoulder like the BAR. The resulting design, the M60 machine gun, was issued to troops during the Vietnam War. Ground mount This M60 machine gun is part of an XM2 armament subsystem; it is aimed and fired from the aircraft rather than directly. The most common interface on machine guns is a pistol grip and trigger. On earlier manual machine guns, the most common type was a hand crank.

*Rifles and Machine Guns in History; Comments are disabled for this video. Advertisement Autoplay When autoplay is enabled, a suggested video will automatically play next. Up next.*

Machine guns of all armies were largely of the heavy variety and decidedly ill-suited to portability for use by rapidly advancing infantry troops. Each weighed somewhere in the 30kgkg range - often without their mountings, carriages and supplies. The Machine Gun in The machine gun, usually positioned on a flat tripod, would require a gun crew of four to six operators. The reality however was that these early machine guns would rapidly overheat and become inoperative without the aid of cooling mechanisms; they were consequently fired in short rather than sustained bursts. Cooling generally took one of two forms: Water jackets would provided for the former which held around one gallon of liquid and air vents would be built into the machine gun for the latter. Water cooled machine guns would still overheat relatively quickly sometimes within two minutes , with the consequence that large supplies of water would need to be on hand in the heat of a battle - and, when these ran out, it was not unknown for a machine gun crew to solve the problem by urinating into the jacket. Whether air or water cooled, machine guns still jammed frequently, especially in hot conditions or when used by inexperienced operators. Consequently machine guns would often be grouped together to maintain a constant defensive position. Estimates of their equivalent, accurate, rifle firepower varied, with some estimating a single machine gun to be worth as many as rifles: Hiram Maxim , who designed the machine gun which bore his name in , first offered use of the machine to Britain. Although rapid-firing weapons, such as the 0. Unfortunately for Maxim the British army high command could see no real use for the oil-cooled machine gun he demonstrated to them in ; other officers even regarded the weapon as an improper form of warfare. In contrast the British and French had access to a mere few hundred equivalents when war began. Simple Design In designing his machine gun, Hiram Maxim utilised a simple concept. The gas produced by the explosion of powder in each machine gun cartridge created a recoil which served to continuously operate the machine gun mechanism. No external power was needed. His initial design , which was water cooled and belt fed, allowed for a theoretical rate of fire of up to rounds per minute half that number in practice. It was heavy however, weighing in at 62kg. German Enthusiasm As already noted the Germans quickly grasped the potential importance of machine guns on the battlefield. From the outset the German army demonstrated the value of the machine gun by creating separate machine gun companies to support infantry battalions. The British however did not create their Machine Gun Corps until October ; until this time the few machine guns available were attached in sections to individual battalions. A mere two guns were allocated to each infantry battalion in Superiority of Defensive Warfare Technology When established in fixed strong-points sited specifically to cover potential enemy attack routes, the machine gun proved a fearsome defensive weapon. Enemy infantry assaults upon such positions invariably proved highly costly. The French in particular found to their cost that the technology of defensive warfare was more advanced than that of offensive warfare. Early commanders, such as Charles Lanrezac , were dismissed for apparent failures in their implementation of the offensive spirit. The British similarly found to their repeated cost the futility of massed infantry attacks against well-entrenched defensive positions protected by machine gun cover. The first day of the Somme Offensive amply illustrated this, although the lesson appeared to be lost to the British high command. On the opening day of the offensive the British suffered a record number of single day casualties, 60,, the great majority lost under withering machine gun fire. The Machine Gun as an Offensive Weapon Understandably most historical accounts of the First World War have tended to emphasise the defensive strengths of the machine gun. Throughout the war efforts were made to produce an infantry assault version, such as the Lewis Light Machine Gun , although these efforts were generally unsatisfactory. Although lighter at around 12kg they were still considered too heavy and bulky for rapidly advancing infantry. Attempts to transport light machine guns by wheeled carriages or pack animals were ultimately unsuccessful: By however one-man portable machine guns including the formidable Bergmann MP18 submachine gun were put to some use each weighing kg , although maintaining sufficient ammunition supplies remained a difficulty. Although

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often not truly portable light machine guns were more readily transported on roads or flat ground by armoured cars. As the war developed machine guns were adapted for use on tanks on broken ground, particularly on the Western Front where the majority of machine guns were deployed. In response to the increasing success of machine guns mounted on aircraft it was perhaps inevitable that machine guns should similarly be developed as anti-aircraft devices in France and Italy, sometimes mounted on vehicles. Similarly machine guns began to be added to warships as a useful addition to naval armaments. For more information on specific models follow the links below:

### Chapter 5 : National Firearms Act | Bureau of Alcohol, Tobacco, Firearms and Explosives

*Contrary to popular belief, it is perfectly legal for a law-abiding American citizen to own/possess a machine gun (sometimes called a full-auto firearm or automatic weapon).*

### Chapter 6 : Machine Gun | Fortnite Wiki | FANDOM powered by Wikia

*A special tax is levied on all NFA items (machine guns, suppressors, short-barreled rifles, short-barreled shotguns, and destructive devices) with no exceptions. These are not my opinions.*

### Chapter 7 : Rambo () - Internet Movie Firearms Database - Guns in Movies, TV and Video Games

*The new sniper bullet offers greater range than existing rounds, while the new machine gun round will be the foundation of a new, better weapon.*

### Chapter 8 : Questions and Answers | Bureau of Alcohol, Tobacco, Firearms and Explosives

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### Chapter 9 : GunsAmerica - Buy Guns and Sell Guns Online

*Weapons of War - Machine Guns The machine gun, which so came to dominate and even to personify the battlefields of World War One, was a fairly primitive device when general war began in August*