The M1 carbine (formally the United States Carbine, Caliber .30, M1) is a lightweight semi-automatic carbine that became a standard firearm in the U.S. military during World War II and the Korean War, and was produced in several variants. It was widely used by U.S. and foreign military and paramilitary forces, and has also been a popular civilian firearm.

In selective fire versions capable of fully-automatic fire, the carbine is designated the M2 carbine. The M3 carbine was an M2 with an active infrared scope system.
Unlike conventional carbines, which are generally a version of a parent rifle with a shorter barrel (like the earlier .30-40 U.S. Krag rifle and carbine and the later M16A1 rifle and M4 carbine), the M1 carbine has one part in common with the M1 rifle (a short buttplate screw) and fires a different cartridge.

Development history

Limitations of weapons in the U.S. arsenal

During the 1920s, the U.S. Army had sought a handier semi-automatic rifle in a lighter caliber to replace the bolt-action M1903 rifle chambered for the same powerful .30-06 Springfield standard round used in the BAR and the M1917/M1919 machine guns. U.S. Army Ordnance tested in competition semi-automatic rifles designed by John C. Garand, by John T. Thompson's Auto-Ordnance Corp. and by John D. Pedersen.[1] [2] After acceptance of the rifle designed by Garand and chambered for the .276 Pedersen cartridge, the decision was made to keep the .30-06 round to simplify logistics. Standardized in 1936, the .30-06 M1 rifle was approximately one pound heavier than the M1903 it was replacing.

For many specialist soldiers serving in the rapidly evolving modern U.S. Army just prior to World War II, the full-size infantry rifle as an individual weapon had proved unworkable. This included an increasing proportion of service troops (truck drivers, supply personnel, radiomen, and linemen) as well as some specialist frontline troops who might need a handier weapon (paratroopers, officers, forward observers, medics, engineers and mortar crews). During prewar and early war field exercises, it was noticed that these troops, when issued the rifle, often found their individual weapon too heavy and cumbersome. In addition to impeding the soldier's mobility, a slung rifle would frequently catch on brush, bang the helmet, or tilt it over the eyes. Many soldiers found the rifle slid off the shoulder unless slung diagonally across the back, where it prevented the wearing of standard field packs and haversacks. Alternate weapons such as the M1911 pistol and M1917 revolver, while undeniably convenient, were often insufficiently accurate or powerful. The Thompson submachine gun was very effective in close-range combat but nonetheless heavy, limited in effective range (50-75 meters) and penetration, and not significantly easier to carry or maintain than the service rifle.

U.S. Army Ordnance decided that a new weapon was needed for these other roles but determined that a weapon for non-combat soldiers should add no more than five pounds to their existing equipment load.[3] The requirement for the new firearm called for a defensive weapon with an effective range of 300 yards, much lighter and handier than the rifle, with greater range, firepower, and accuracy than the pistol, while weighing half as much as the submachine gun.
Designing the M1 carbine

In 1938, the Chief of Infantry requested the Ordnance Department develop a "light rifle" or carbine, though the formal requirement for the weapon type was not approved until 1940. This led to a competition in 1941 by major U.S. firearm companies and designers. The prototypes for the US M1 carbine were chambered for a new cartridge, the .30 Carbine, a smaller and lighter .30 caliber (7.62 mm) round very different from the .30-06 in both design and performance. The .30 Carbine cartridge was intermediate in muzzle energy (ME) and muzzle velocity (MV). Essentially a rimless version of the obsolete .32 Winchester Self-Loading cartridge, the .30 Carbine had a round-nose 110 gr (7.1 g) bullet. From the M1 Carbine's 18 in (460 mm) barrel, the .30 Carbine cartridge produced a muzzle velocity of approximately 1970 ft/s (600 m/s).

Winchester at first did not submit a design, as it was occupied in developing the .30-06 Winchester M2 Military Rifle. The rifle originated as a design by Jonathan "Ed" Browning, brother of the famous firearm designer John Browning. A couple of months after Ed Browning's death in May 1939, Winchester hired ex-convict David M. "Carbine" Williams, a convicted murderer and former bootlegger who had begun work on a short-stroke gas piston design while serving a prison sentence. (This unlikely story was the loose basis of the 1952 movie Carbine Williams starring James Stewart.) Winchester hoped Williams would be able to complete various designs left unfinished by Ed Browning. Williams insisted on the incorporation of his short-stroke piston in the existing design. After the Marine Corps semi-automatic rifle trials in 1940, Browning's rear-locking tilting bolt design proved unreliable in sandy conditions. As a result, the rifle was redesigned to incorporate a Garand-style rotating bolt and operating rod. By May 1941, the M2 rifle prototype had been shaved from about 9.5 lb (4.3 kg) to a mere 7.5 lb (3.4 kg).

From prototype to completion

Winchester contacted the Ordnance Department to examine their rifle design. Ordnance believed the design could be scaled down to a carbine which weighed 4.5 to 4.75 lb (2.0–2.2 kg). In response, Major René Studler demanded a carbine prototype as soon as possible. The first model was developed at Winchester in 13 days by William C. Roemer, Fred Humeston and three other Winchester engineers under supervision of Edwin Pugsley, essentially Williams' last version of the .30-06 M2 scaled down to the .30 SL cartridge. This patchwork prototype was cobbled together using the trigger housing and lockwork of a Winchester M1905 rifle and a modified Garand operating rod. The prototype was an immediate hit with Army observers.

After the initial Army testing in August 1941, the Winchester design team set out to develop a more refined version. Williams participated in the finishing of this test prototype. The second prototype competed successfully against other carbine candidates in September 1941, and Winchester was notified of their victory the very next month. Standardization as the M1 Carbine was approved in October 22, 1941. Contrary to popular myth, Williams had little to do with the carbine's development, with the exception of his short-stroke gas piston design. As a matter of fact, Williams went about creating his own design apart from the other Winchester staff. Williams' final carbine design was not ready for testing until December 1941, two months after the Winchester M1 Carbine had been adopted and type-classified. None of William's additional design features were incorporated into later M1 production. The supervisor of the carbine project at Winchester, Edwin Pugsley, conceded that Williams' final design was "an advance on the one that was accepted", but noted that Williams' decision to go it alone was a distinct impediment to the project. Further, in a memo in response to a possible lawsuit by Williams, in 1951 Winchester noted his patent for the short-stroke piston had been improperly granted as a previous patent covering the same principle of operation was overlooked at the patent office.
Another stimulus to the carbine's rapid development was a concern over Germany's use of glider-borne and paratroop forces to infiltrate and attack strategic points behind the front lines, forcing support units and line-of-communications forces into combat with the enemy.\[6\] \[7\] Tankers, drivers, artillery crews, mortar crews, and other personnel were also issued the M1 carbine in lieu of the larger, heavier M1 rifle. Belatedly, a folding-stock version of the M1 carbine was developed, after a request was made for a compact and light infantry arm for airborne troops. The first M1 carbines were delivered in mid-1942, with initial priority given to troops in the European Theater of Operations.\[7\]

**Combat use**

**World War II**

The M1 carbine with its reduced-power .30 cartridge was not originally intended to serve as a primary weapon for combat infantrymen, nor was it comparable to more powerful assault rifles developed late in the war. Nevertheless, the carbine was soon widely issued to infantry officers, and the American paratroopers,\[8\] NCOs, ammunition bearers, forward artillery observers, and other frontline troops.\[9\] Its reputation in front-line combat was mixed. Some soldiers and Marines, especially those who were unable to use a full-size rifle as their primary weapon, preferred the carbine over the Garand because of the weapon's small size and light weight.\[10\]

The carbine gained generally high praise from airborne troops in the early stages of the war who were issued the folding-stock M1A1, though negative reports began to surface with airborne operations in Sicily in 1943,\[11\] and increased during the fall and winter of 1944.\[12\]

In the Pacific theatre, soldiers and guerrilla forces operating in heavy jungle with only occasional enemy contact generally praised the carbine for its combination of light weight, short overall length, and accuracy at close ranges. The carbine's exclusive use of non-corrosive primered ammunition was found to be a godsend by troops and ordnance personnel serving in the Pacific, where barrel corrosion was a significant issue with .30-06 weapons such as the M1 Garand rifle and the BAR, though not to the same extent in Europe, where some soldiers reported misfires attributed to the weaker noncorrosive primers.\[13\] Other soldiers and Marines engaged in frequent daily firefights (particularly those serving in the Philippines) found the weapon to have insufficient stopping power and penetration.\[14\] Reports of the carbine's failure to stop enemy soldiers, sometimes after multiple hits, appeared in individual after-action reports, postwar evaluations, and service histories of both the U.S. Army and the U.S. Marine Corps.\[14\] Aware of these shortcomings, the U.S. Army, its Pacific Command Ordnance staff, and the Aberdeen small arms facility continued to work on shortened versions of the Garand throughout the war, though none was ever officially adopted.

Some troops also found the .30 Carbine cartridge incapable of penetrating small trees and light cover, though it was markedly superior to .45 caliber weapons such as the Reising and Thompson submachineguns in accuracy and penetration. Lt. Col. John George, a small arms expert and intelligence officer serving in Burma with Merrill's Marauders, reported that the .30 carbine bullet would easily penetrate the front and back of steel helmets, as well as the body armor\[15\] used by Japanese forces of the era.\[16\]
Variants

Initially, the M1 Carbine was intended to have a selective-fire capability, but the decision was made to put the M1 into production without this feature. Fully-automatic capability was incorporated into the design of the M2 (an improved, selective-fire version of the M1), introduced in 1944. Parts kits T17 and T18 allowed the conversion in the field of semi-auto M1 carbines into selective fire M2 configuration.

The M3 carbine (a selective-fire M2 with the M1 infrared night sight or sniperscope) was first used in combat by Army units during the invasion of Okinawa. For the first time, U.S. soldiers had a weapon that allowed them to visually detect Japanese infiltrating into American lines at night, even during pitch blackness. A team of two or three soldiers was used to operate the weapon and provide support. At night, the scope would be used to detect Japanese patrols and assault units moving forwards. At that point, the operator would fire a burst of automatic fire at the greenish images of enemy soldiers. The M3 with the M1 sight had an effective range of about 70 yards (limited by the visual capabilities of the sight). Fog and rain further reduced the weapon's effective range. It is estimated that fully 30% of Japanese casualties inflicted by rifle and carbine fire during the Okinawan campaign were caused by the M3 carbine and its M1 sniperscope.

Korean War

The M2 Carbine continued in use during the Korean War. The weapon featured a selective-fire switch allowing optional fully-automatic fire at a rather high rate (850-900 rpm) and a 30-round magazine. The M3 carbine with an improved M2 (later, M3) infrared sniperscope also returned to combat, and was used principally during the static stages of the conflict against night infiltrators. The M3 with the improved M3 night sight had an effective range of approximately 125 yards.

In Korea, all versions of the carbine soon acquired a poor reputation for jamming in extreme cold weather conditions, eventually traced to inadequate recoil impulse and weak return springs. A 1951 official U.S. Army evaluation of scores of individual after-action combat reports noted the weapon's cold-weather shortcomings, and recorded complaints by troops for failure to stop heavily-clothed or gear-laden North Korean and Chinese troops at close range after multiple hits.

Vietnam

The M2 carbine was again issued to some U.S. troops in Vietnam, particularly reconnaissance units (LRRP) and advisors as a substitute standard weapon. These weapons began to be replaced by the M14 in the early 1960s which in turn was replaced by the M16 in the late 1960s, and many M1, M2, and M3 Carbines were given to the South Vietnamese. A number were later captured at various points of the conflict by Vietcong, who have at least on one occasion removed the folding stock from the M1A1 carbine and adapted it to another weapon.

The M1/M2 carbine and the M14 were finally replaced by the M16 in the mid-1960s. The M1/M2/M3 carbines were the most heavily produced family of U.S. military weapons for several decades, most of these being the M1 version.
Design and operation

The M1 carbine's bolt mechanism is similar to the M1 rifle, though the carbine has a different gas system and trigger mechanism design. The gas system is a lightweight tappet-and-slide gas system. Initially fed from a 15 round magazine, a 30 round magazine was introduced for the M2.

The very first carbines, those made before mid-1943, were originally equipped with a "V-cut" extractor for removal of the fired round from the chamber. The "V-cut" design was found to be flawed and unreliable. In the field "V-cut" extractors were reground to a straight configuration, which enhanced reliability, until factory production was able to supply the better design.

The .30 Carbine cartridge was intermediate in both muzzle energy (ME) and muzzle velocity (MV). It is essentially a rimless version of the obsolete .32 Winchester Self-Loading cartridge.[22] The .30 Carbine had a round-nose 110 gr (7.1 g) bullet, in contrast to the spitzer bullet designs found in most full-power rifle cartridges of the day. From the M1 carbine's 18 in (460 mm) barrel, the .30 Carbine cartridge produced a muzzle velocity of approximately 1970 ft/s (600 m/s), a velocity between that of contemporary submachine guns (approximately 900 to 1,600 ft/s (300–500 m/s)) and full-power rifles and light machine guns (approximately 2,400 to 2,800 ft/s (700–900 m/s)). At the M1 carbine's maximum effective combat range of 300 yards (270 m), its bullet has about the same energy as pistol rounds like the 7mm Nambu do at the muzzle. Bullet drop is significant past 200 yards (180 m).[22]

One characteristic of .30 Carbine ammunition is that from the beginning of production, non-corrosive primers were specified. This was the first major use of this type primer in a military firearm. Because the rifle had a closed gas system, not normally disassembled, corrosive primers would have led to a rapid deterioration of the gas system. The use of non-corrosive primers was a novelty in service ammunition at this time.[23] Some misfires were reported in early lots of .30 Carbine ammunition, attributed to moisture ingress of the non-corrosive primer compound.[13]

Categorizing the M1 carbine series has been the subject of much debate. The M1 is sufficiently accurate at short ranges. At 100 yards (91 m), it can deliver groups of between 3 and 5 minutes of angle, sufficient for its intended purpose as a close-range defensive weapon. Its muzzle energy and range are beyond those of any submachine gun of the period, though its bullet is much lighter in weight and smaller in diameter than that of .45 caliber weapons, and much less powerful than those of other service rifles of the period. The M1 and later M2 carbines were never designed to be assault rifles, such as the later German StG44 and Russian AK-47, and the .30 Carbine cartridge gives up significant muzzle velocity (roughly 350 ft/s (110 m/s)) to both. Additionally, the bullets used in the cartridges of the AK-47 and StG44 are spitzer designs, and suffer less energy loss and trajectory drop at distances beyond 100 yards. Most authorities list the effective combat range of the M1 carbine at around 200 yards, compared to 250-300 yards (230–270 m) for the AK-47 and StG44.
Attachments

A United States Marine equipped with an M1 Carbine in the Battle of Iwo Jima, February 1945. An M8 grenade launcher can be seen attached to the muzzle of the weapon.

The M1 carbine was used with the M8 grenade launcher, which was fired with the M6 cartridge to launch 22 mm rifle grenades. It also accepts the M4 bayonet, which was based on the M3 knife. The M4 bayonet formed the basis for the later M6 and M7 bayonet-knives. The carbine was modified from its original design to incorporate a bayonet, due to requests from the field. Very few carbines with bayonet lugs reached the front lines before the end of World War II. This modification was made to nearly all carbines during arsenal rebuild following World War II. By the time the Korean War began, the bayonet-equipped M1 was standard issue. It is now rare to find a non bayonet lug-equipped original M1 carbine. As carbines were reconditioned at arsenals, parts such as the magazine catch, rear sight, barrel band with bayonet lug, and stock were upgraded with the current standard issue parts, usually parts as redesigned for the M2 carbine.

Production and foreign usage

A total of over 6 million M1 carbines of various models were manufactured, making it the most produced small arm for the American military during World War II. Despite being designed by Winchester, the great majority of these were made by other companies (see list of Military contractors below). The largest producer was the Inland division of General Motors, but many others were made by contractors as diverse as IBM, the Underwood Typewriter Company, and the Rock-Ola jukebox company. Few contractors made all the parts for carbines bearing their name: some makers bought parts from other major contractors or sub-contracted minor parts to companies like Marlin Firearms or Auto-Ordnance. Parts by all makers were required to be interchangeable. Irwin-Pedersen models were the fewest produced, at a little over 4,000. Many carbines were refurbished at several arsenals after the war, with many parts interchanged from original maker carbines. True untouched war production carbines, therefore, are the most desirable for collectors.[24]

The SAS used the M1 and M1A1 carbines after 1943. The weapon was taken into use simply because a decision had been taken by Allied authorities to supply .30 caliber weapons from US stocks in the weapons containers dropped to Resistance groups sponsored by an SOE, or later also Office of Strategic Services (OSS), organizer, on the assumption the groups so supplied would be operating in areas within the operational boundaries of U.S. forces committed to Operation Overlord. They were found to be suited to the kind of operation the two British, two French, and one Belgian Regiment carried out. It was handy enough to parachute with, and, in addition, could be easily stowed in an operational Jeep. These weapons continued to be utilized as late as the Malayan Emergency. Other specialist intelligence collection units, such as 30 Assault Unit sponsored by the Naval Intelligence Division of the British Admiralty, which operated across the entire Allied area of operations, also made use of this weapon.

Small numbers of captured carbines were used by German forces in World War II, particularly after D-Day.[25] The German designation for captured carbines was Selbstladekarabiner 455(a). The "(a)" came from the country name in German; in this case, Amerika.
A variant was produced shortly after WWII by the Japanese manufacturer Howa Machinery, under U.S. supervision. These were issued to all branches of the Japan Self-Defense Forces, and large numbers of them found their way to Southeast Asia during the Vietnam War.

Numerous examples were obtained and used by the Israeli Palmach-based special forces in the 1948 Arab-Israeli War. Because of their compact size and semi-auto capabilities, they were given to reconnaissance companies of the Israel Defence Forces.

It was also used by police and border guard in Bavaria after WWII and into the 1950s. The carbines were stamped according to the branch they were in service with; for instance, those used by the border guard were stamped "Bundesgrenzschutz". Some of these weapons were modified with different sights, finishes, and sometimes new barrels.

After the Korean War, the carbine was widely exported to U.S. allies and client states (such as South Korea, Taiwan and other European allies), and was used as a frontline weapon well into the Vietnam era. The M1 carbine was also issued to the Korean and Israeli military and police forces.

The M1A1 was also used by the French Paratroopers (such as the 1er RCP) during the Algerian War from 1954 to 1962.

The Police Field Force of the Royal Malaysian Police, along with other units of the British Army in the Malayan Emergency, were issued the M2 Carbine for both jungle patrols and outpost defense. The Royal Ulster Constabulary also used the M1 carbine.

**Current military use**

The Israeli police still uses the M1 carbine as a standard long gun for non-combat elements and Mash'az volunteers. During the late 1990s, the police started to issue a Micro Galil variant called the Magal chambered in .30 Carbine, but after extensive problems with various malfunctions, they withdrew the weapon from service in 2001.

In Rio de Janeiro, Brazil, a police battalion named BOPE (Batalhão de Operações Policiais Especiais, or "Special Police Operations Battalion") still uses the M1 carbine.

The government of the Philippines still issues M1 carbines to the infantrymen of the Philippine Army's 2nd Infantry Division assigned in Luzon Island (some units are issued just M14 Automatic Rifles and M1 Carbines) and the Civilian Auxiliary Forces Geographical Unit (CAFGU) and Civilian Volunteer Organizations (CVO) spread throughout the Philippines. Certain provincial police units of the Philippine National Police (PNP) still use government-issue M1 carbines as well as some operating units of the National Bureau of Investigation (NBI). In many provinces of the Philippines, M1 carbines are still highly valued as a light small arm. Elements of the New People's Army and Islamic Secessionist movement value the carbine as a lightweight weapon and preferred choice for mountain operation and ambush operations. The M1 carbine has become one of the most recognized firearms in Philippine society, with the Marikina City-based company ARMSCOR Philippines still continuing to manufacture .30 caliber ammunition for the Philippine market.
Users

- Allies of World War II (1940s)
- Austria (1950s–70s, Austrian Army and Police)
- Bavaria (1945–early 1950s, Border Guard)
- Brazil (present, BOPE)
- Ethiopia[31]
- France (1954-1962, Algerian War)
- Germany (German Border Guard, some Police forces and German Army paratroopers (1950s-1960s)
- Greece (Hellenic (Greek) Air Force until mid 80s)
- Israel (1945–1957, Israel Defence Forces; 1970s–present, Israel Police; 1974–present, Civil Guard)
- Italy (Carabinieri, as of 1992)
- Liberia[32]
- Mexico (police departments and security forces)
- Netherlands (1940s-70s, Army and Police)
- Norway (Norwegian Army 1951-70, with some Norwegian police units until the 1990s)
- Philippines (Post-WWII)
- South Korea (1950s-Present, Reserve Force)
- Turkey (Used by Troops in South Korea)
- Suriname (?-Present, Army)
- South Vietnam (1960s–70s)
- Taiwan (Republic of China) (1950s-present)
- Thailand Locally known as the ปสบ.
- Vietnam (Captured Batches)
- United Kingdom
- United States (1940s–60s/70s, Armed Forces) and some law enforcement agencies (1940s-present)

Variants

Carbine, Cal .30, M1A1

- Folding stock, 15-round magazine
- Paratrooper model
- About 150,000 produced

Carbines originally issued with the M1A1 folding stock were made by Inland, a division of General Motors. Inland production of M1A1 carbines was interspersed with Inland production of M1 carbines with the standard stock. Stocks were often swapped out as carbines were refurbished at arsenals. An original Inland carbine with an original M1A1 stock is rare today.
Carbine, Cal .30, M1A2

- Proposed variant with improved sight adjustable for windage and elevation
- Produced only as 'overstamped' model (an arsenal-refurbished M1 with new rear sight and other late M1 improvements)

Carbine, Cal .30, M1A3

- Pantograph stock, 15-round magazine
- Type standardized to replace the M1A1 but may not have been issued.
- Pantograph stock was more rigid than the M1A1's folding stock and folded flush under the fore end.

Carbine, Cal .30, M2

- Early 1945
- Selective fire (capable of fully-automatic fire)
- 30-round magazine
- About 600,000 produced

Initially, the M1 Carbine was intended to have a selective-fire capability, but the decision was made to put the M1 into production without this feature. Fully-automatic capability was incorporated into the design of the M2 (an improved, selective-fire version of the M1), introduced in 1944. The M2 had a revised wood stock and featured the late M1 improvements to rear sight, a bayonet lug, and other minor changes.

Although some carbines were marked at the factory as M2, the only significant difference between an M1 and M2 carbine is the fire control group. The military issued field conversion kits (T17 and T18) to convert an M1 to an M2. (Legally a carbine marked M2 is always a machinegun for national firearms registry purposes.)

Other changes developed for the M2 were a 30 round magazine with three catch nibs (as opposed to two on the fifteen round magazine); and a magazine catch with a third retaining surface. These M2 parts including the heavier M2 stock were standardized for arsenal rebuild of M1 and M1A1 carbines.

(A modified round bolt replaced the original flat top bolt to save machining steps in manufacture. Many sources erroneously refer to this round bolt as an 'M2 bolt' but it was developed as a standard part for new manufacture M1 and later M2 carbines and as a replacement part, with priority given to use on M1A1 and M2 carbines. The slightly heavier round bolt did moderate the cyclic rate of the M2 on full automatic.)

Carbine, Cal. 30, M2A2

- Arsenal-refurbished (overstamped M2) model

Carbine, Cal .30, M3

- M2 with mounting (T3 mount) for an early active (infrared) night vision sight.
- About 3,000 produced.
- Three versions of night sight (M1, M2, M3)
The M3 carbine was an M2 carbine fitted with a mount designed to accept an infrared sight for use at night. It was initially used with the M1 sniperscope, an active infrared sight, and saw action in 1945 with the Army during the invasion of Okinawa. Before the M3 carbine and M1 sniperscope were type-classified, they were known as the T3 and T120, respectively. The system continued to be developed, and by the time of the Korean War, the M3 carbine was used with the M3 sniperscope.

The M2 sniperscope extended the effective nighttime range of the M3 carbine to 100 yards. In the later stages of the Korean War, an improved version of the M3 carbine, with a revised mount, a forward pistol grip, and a new M3 sniperscope design was used in the latter stages of Korea and briefly in Vietnam. The M3 sniperscope had a large active infrared spotlight mounted on top of the scope body itself, allowing use in the prone position. The revised M3/M3 had an effective range of around 125 yards.[18] Eventually, the M3 carbine and its M3 sniperscope would be superseded by passive-design night vision scopes with extended visible ranges; the improved scopes in turn required the use of rifle-caliber weapons with flatter trajectories and increased hit probability.

**Military contractors**

- Inland Division, General Motors (production: 2,632,097), sole producer of the M1A1 Carbine. Receiver marked "INLAND DIV."
- Winchester Repeating Arms (production: 828,059) Receiver marked "WINCHESTER"[34]
- Irwin-Pedersen (operated by Saginaw Steering Gear and production included with Saginaw total)
- Saginaw Steering Gear Division General Motors (production: 517,213 ) Receivers marked "SAGINAW S.G." (370,490) and "IRWIN-PEDERSEN" (146,723 )
- Underwood Elliot Fisher (production: 545,616) Receiver marked "UNDERWOOD"
- National Postal Meter (production: 413,017) Receiver marked "NATIONAL POSTAL METER"
- Quality Hardware Manufacturing Corp. (production: 359,666) Receiver marked "QUALITY H.M.C."
- International Business Machines (production: 346,500) Receiver marked "I.B.M. CORP."
- Standard Products (production: 247,100) Receiver marked "STD. PRO."
- Rock-Ola Manufacturing Corporation (production: 228,500) Receiver Marked "ROCK-OLA" [35]
- Commercial Controls Corporation (production: 239) Receiver marked "COMMERCIAL CONTROLS"

**Commercial copies**

Several companies manufactured copies of the M1 Carbine after World War II, which varied in quality. Some companies used a combination of original USGI and new commercial parts, while others manufactured entire firearms from new parts, which may or may not be of the same quality as the originals. These copies were marketed to the general public and police agencies but were not made for or used by the U.S. military.

In 1963, firearms designer Melvin M. Johnson introduced a version of the M1 Carbine called the "Spitfire" that fired a 5.7 mm (.22 in) wildcat cartridge known as the 5.7 mm MMJ or .22 Spitfire.[36] Johnson advertised the smaller caliber and the modified carbine as a survival rifle for use in jungles or other remote areas. While the concept had some military application when used for this role in the selective-fire M2 Carbine, it was not pursued and few Spitfire carbines were made.[37]
More recently, the Auto-Ordnance division of Kahr Arms began production of an M1 Carbine replica in 2005. The original Auto-Ordnance had produced various replacement parts for IBM during World War II, but did not manufacture complete carbines until the introduction of this replica. The AOM110 and AOM120 models (no longer produced) featured birch stocks and handguards, Parkerized receivers, flip-style rear sights and barrel bands without bayonet lugs. The current AOM130 and AOM140 models are identical except for American walnut stocks and handguards.[38] [39]

An Israeli arms company (Advanced Combat Systems) offers a modernized bullpup variant called the Hezi SM-1.[40] The company claims accuracy of 1.5 MOA at 100 yards (91 m).[41]

Other commercial manufacturers have included:

- Alpine of Azusa, Calif.[42]
- AMAC or Jacksonville, Ark. (acquired Iver Johnson Arms)[43]
- AMPCO of Miami, Fla.[44]
- Bullseye Gun Works of Miami, Fla. [45]
- Crosman Air Rifle; produced an M1 Carbine look-a-like [46]
- ERMA's Firearms Manufacturing of Steelville, Mo. [47]
- Erma Werke of Dachau, Bavaria serviced carbines used by the West German police post WWII. Manufactured replacement parts for the same carbines. Manufactured .22 replica carbines for use as training rifles for police in West Germany and Austria. Also for commercial export worldwide.[48] [49]
- Federal Ordnance of South El Monte, Calif. [50]
- Global Arms [51]
- H&S of Plainfield, NJ (predecessor of Plainfield Machine)[52]
- Howa of Nagoya, Japan, made carbines and parts for the post-WWII Japanese and Thai militaries, and limited numbers of a hunting rifle version [53]
- Israel Arms International (IAI) of Houston, Texas assembled carbines from parts from other sources [54]
- The Iver Johnson Arms of Plainfield, NJ and later Jacksonville, Ark., (acquired M1 Carbine operations of Plainfield Machine) and followed the lead of Universal in producing a pistol version called the "Enforcer". [55]
- Johnston-Tucker of St. Louis, Mo. [56]
- Millville Ordnance (MOCO) of Union, N.J. (predecessor of H&S) [57]
- National Ordnance of Azusa, Calif. and later South El Monte, Calif. [58]
- NATO of Atlanta, GA [59]
- Plainfield Machine Company of Plainfield, N.J. and later Middlesex, N.J. (P.O. Box in Dunellen, N.J.), M1 Carbine manufacture later purchased and operated by Iver Johnson [60]
- Rock Island Armory of Geneseo, Ill. [61]
- Rowen, Becker Company of Waterville, Ohio [62]
- Springfield Armory of Geneseo, Ill.[63]
- Texas Armament Co. of Bownwood, Tex. [64]
- Tiroler Sportwaffenfabrik und Apparatenbau GmbH of Kugstein, Austria manufactured an air rifle that looked and operated like the M1 Carbine for use in training by Austria and West Germany. [65]
- Universal Firearms of Hialeah, Fla. - Early Universal guns were, like other manufacturers, assembled from USGI parts. However, beginning in 1968, the company began producing the "New Carbine", which externally resembled the M1 but was in fact a completely new firearm internally, using a different receiver, bolt carrier, bolt, recoil spring assembly, etc. with almost no interchangeability with GI-issue carbines.[66]


- Williams Gun Sight of Davison, Mich. produced a series of 50 sporterized M1 Carbines [67]
Hunting and civilian use

The M1 carbine is still in use today by many civilian shooters and police around the world. The .30 Carbine cartridge is used for a number of types of hunting, including white-tailed deer, but is definitely underpowered for larger North American game such as elk, moose, and bear. Some U.S. states prohibit use of the carbine for hunting deer and larger animals due to a lessened chance of killing an animal in a single shot, even with expanding bullets. The carbine is prohibited for hunting in several states such as Pennsylvania[^68] because of the semi-automatic function, and Illinois[^69] which prohibits all non-muzzleloading rifles for big game hunting. The .30 carbine cartridge and the M1 carbine are suitable for the same game targeted with the .32-20 Winchester and .32 Winchester Self-Loading cartridges and the hunting arms made in those calibers.

The ease of use and great adaptability of the weapon led to it being used by Malcolm X (as a self-defense tool) and Patty Hearst (as a bank robbery weapon). Both were featured in famous news photographs carrying the M1 carbine.

Related equipment and accessories

Ammunition types

The ammunition used by the military with the carbine include[^70]

- Cartridge, Caliber .30, Carbine, Ball, M1
- Cartridge, Grenade, Caliber .30, M6 (also authorized for other blank firing uses, due to a lack of a dedicated blank cartridge)
- Cartridge, Caliber .30, Carbine, Dummy, M13
- Cartridge, Caliber .30, Carbine, Ball, Test, High Pressure, M18
- Cartridge, Caliber .30, Carbine, Tracer, M16 (also rated as having an incendiary effect)
- Cartridge, Caliber .30, Carbine, Tracer, M27 (dimmer illumination and no incendiary effect)

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Sources

- IBM Archives [71]
- Korean War cold weather malfunctions [72]

External links

- US Army M1 Carbine Technical Manual [74]
- M1 Carbine Article [25]
- M1 Carbine Family: M1, M1A1, M2, M3 [76]
- The M1/M2 Carbine Magazine FAQ [77]
- Auto-Ordnance M1 Caribnes [78]
- 90th Reference manual page including FM 23-7 Carbine, 1942 manual [79]
- Articles page including information on blank adapting the M1 carbine [80]
- M1 Carbine page at Modern Firearms [81]

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[8] Rush, Robert S., GI: *The US Infantryman in World War II*, Osprey Publishing Ltd. (2003), ISBN 1841767395, p. 33: Officers were issued .45 M1911 pistols as individual weapons until 1943, when they were issued the M1 Carbine in place of the pistol.
[9] Rush, Robert S., GI: *The US Infantryman in World War II*, Osprey Publishing Ltd. (2003), ISBN 1841767395, pp. 33-35: Officers and NCOs, as well as airborne and other elite troops were frequently allowed to exchange with Ordnance personnel for their individual weapon of choice.


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Dill, James, *Winter of the Yalu*, Changjin Journal 06.22.00


"A Pocket History of the M1 Carbine" - Fulton Armory (http://www.fulton-armory.com/M1Carbine.htm)


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"Corsman air rifle M1 Carbine" (http://www.M1CarbinesInc.com/carbine_corsman.html)

"ERMAS Firearms M1 Carbine" (http://www.M1CarbinesInc.com/carbine_ermas.html)

"U.S. GI Carbines used by the police of West Germany & Austria" (http://www.BavarianM1Carbines.com)

"Erma Werke Model EM1" (http://www.M1CarbinesInc.com/carbine_em1.html)

"Federal Ordnance M1 Carbine" (http://www.M1CarbinesInc.com/carbine_fedord.html)

"Global Arms M1 Carbine" (http://www.M1CarbinesInc.com/carbine_global.html)

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"IAI M1 Carbine" (http://www.M1CarbinesInc.com/carbine_iai.html)

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