THE M1 CARBINE

LEROY THOMPSON

WEAPON

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Series Editor Martin Pegler

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INTRODUCTION

The origins of the M1 Carbine lay in the US Army's decision to develop a weapon that could replace the pistol carried by many soldiers with a more effective weapon. In today's terminology the M1 Carbine was an attempt to develop a PDW (Personal Defense Weapon) for those troops not involved in front-line infantry combat. Although some personnel who would previously have been armed with the pistol did carry an M1 Carbine instead, it did not completely supplant the pistol. However, it proved to be one of the most popular US small arms of all time, serving from World War II through at least the Vietnam War.

The USA had issued carbines in the past, primarily to cavalry and artillery personnel, but, beginning with the 1903 Springfield, design philosophy had shifted to favor a standard-issue rifle with a medium-length barrel intended for use by all. Likewise, when the M1 Garand was adopted in 1936 there was no carbine version. Because one of the problems in issuing the Garand to support troops who often had to carry other equipment was its length and weight, one criterion for the M1 Carbine was a weight of 5lb or less. This made it far handier than the M1 Garand (9.5lb unloaded) or Thompson submachine gun (10.6lb unloaded). Since many of the troops who would be issued the M1 Carbine had previously carried a pistol, it was considered necessary for the carbine to have greater range and firepower than the pistol. An effective range of 300yd was considered optimal.

Traditionally, US carbines had been chambered for the same cartridge as the standard infantry rifle. The M1 Carbine's 18in barrel meant that Winchester and the US Army had to develop a new cartridge with faster-burning powder that would give optimum performance. A cartridge developed by Winchester early in the 20th century, the .32 Winchester Self-Loading, provided the basis for the carbine round. The resulting round used a .308 bullet of 110 grains traveling at about 1,900fps, which produced a muzzle energy of 880 foot pounds. (For comparison, the

Garand's M2 .30-06 ball round used a 152-grain bullet traveling at 2,805fps, which produced a muzzle energy of 2,742 foot pounds. In actual practice for much of World War II, the M2 Armor Piercing .30-06 round was used with a slightly heavier 163-grain bullet.) M1 Carbine cartridges were produced with non-corrosive primers, one of many reasons why it was to prove especially popular with troops fighting in the jungles of the Pacific Theater. On the other hand, there were some reports of misfires due to the sensitivity of non-corrosive primers.

Although initially Winchester was involved primarily in developing the M1 Carbine's cartridge, the firm would also eventually submit the winning design for the weapon itself, with a short-stroke gas-piston system. The war shortened the adoption and production process substantially; the M1 Carbine was initially approved in October 1941, and deliveries to troops began in mid-1942.

US airborne troops who jumped over the Netherlands as part of Operation *Market Garden* pause at the side of a road during September 1944. Although the M1 Carbine was intended for use by support troops, it was also popular among airborne forces, and a folding-stock version, the M1A1, was developed for the paratroops. However, the trooper here providing rear security (foreground), who is from a glider infantry unit, has a fixed-stock M1 Carbine. (NARA)

Troops had diverse reactions to the M1 Carbine depending on their circumstances. Support troops and others armed with the M1 Carbine generally liked the fact that it was lighter and handier than the M1 Garand. In fact, the practice of putting a double magazine pouch for 15-round magazines on the butt of the carbine allowed some troops to carry the weapon without magazine pouches on their belts. Fitted with a folding stock, the M1A1 version became the standard weapon of US paratroopers later in World War II. Airborne troops liked the M1A1 Carbine as it was easily stowed for jumping. On the plains of Europe where longer shots were required, the M1 Carbine was less popular than among those fighting in jungles, where its shorter overall length allowed it to be handled more readily. Jungle fighters such as Merrill's Marauders appreciated the quickly changeable 15-round magazine as well.

Criticisms of the M1 Carbine generally arose when the user found himself in a situation where it did not deliver immediate stopping power against an enemy, as it lacked the devastating striking power of the .30-06 cartridge used in the M1 Garand and BAR. However, the true comparison should be with the Colt M1911 pistol and Thompson submachine gun, as these were the weapons the M1 Carbine generally replaced. In fact, some felt that the .45-caliber M1911 pistol actually offered better close-range stopping power due to its 230-grain bullet, even at its relatively low velocity. Much of this criticism was justified; to stop an attacker in his tracks, the heavier, higher-velocity bullet from the Garand inevitably did a better job. Nevertheless, the M1 Carbine killed a lot of Japanese, Germans, Italians, North Koreans, Chinese, Viet Cong, NVA, and Pathet Lao during its US service life, and various other enemies in service with US allies.

In an attempt to supplant the submachine gun, the M2 Carbine was developed. Having select-fire capability and a 30-round magazine, the M2 was actually more versatile and more effective – due to its longer-range capability – than many submachine guns, which fired pistol cartridges. Speaking of pistol cartridges, there were experimental pistols built that chambered the .30 M1 Carbine round, which is ironic since the M1 Carbine was developed to replace the pistol. In fact, in the 1940s and '50s there seems to have been at least some consideration given to the possibility of chambering a service pistol for the round. The M1 Carbine is popular enough among US civilian shooters that at least one automatic pistol chambered for the .30 Carbine cartridge was produced commercially for a few years, and a single-action revolver is still made in that caliber.

The M1 Carbine also provided the basis for an early US weapon designed to use an infrared night-vision 'scope. Designated the M3, this weapon saw very limited service at the end of World War II, but was later employed in Korea and Vietnam. The M3 'scope, its illuminator, and battery pack were quite bulky, which limited its use primarily to static defensive positions, but it was the forerunner to the sophisticated night 'scopes in use today on infantry weapons.

Over six million M1 Carbines were manufactured, and it continued in US service through Vietnam and served in other countries much longer. In some cases, M1 Carbines are still in military or police armories around

During August 1953, US Marines in Korea zero the infrared Sniperscopes on their M3 Carbines. The Marines found the M3 useful in stopping Chinese infiltrators. (NARA)

the world as reserve weapons. In the USA, the M1 Carbine has been a popular police weapon since World War II and only recently have many agencies replaced it with the M16 or M4. Within the last couple of years, in fact, a great number of M1 Carbines have come on to the US civilian market from the Detroit Police Department. US military collectors love the M1 Carbine and it vies with the Colt M1911/M1911A1 as the most-collected US military weapon of World War II. There are enough variations of the M1 Carbine that a serious collector can acquire 50 or more different variations with ease. Many of those interested in World War II own at least one M1 Carbine and shoot them.

Nearly 60 years after its introduction, the M1 Carbine remains extremely popular with collectors, shooters, hunters, and those who keep one for self-defense. Based on the author's observation of shooters or fledgling collectors, most who pick up an M1 Carbine like its look and its handiness. The M1 Garand, by comparison, is more of an acquired taste. Veterans who used one in combat generally lovingly fondle an M1 Garand when it is in their hands, but to many novices it seems heavy and unwieldy. The popularity of collectible M1 Carbines is reflected in prices of US$2,000 or more; however, recent imports from Korea have offered lower-priced M1 Carbines for shooters and re-enactors. And, of course, the TV series *Band of Brothers* created an entire new market for M1 Carbines, especially the M1A1 paratrooper model. The M1 Carbine was designed and produced quickly due to the exigencies of wartime, but it has turned out to have real staying power.

DEVELOPMENT

A super-sidearm for the US Army

ORIGINS

In early 1938 the US Army Infantry Board requested a "light rifle" or carbine to replace most of the pistols and revolvers then in use. Over the next two years, discussion of a potential replacement continued, with the Ordnance Department arguing that the standard service rifle could arm all troops. Much of the impetus for requesting the "light rifle" came about from the inadequacy of the pistol as the primary arm for support troops on the battlefield. The Ordnance Department, however, looked at the issue from the point of view of the logistical issues that fielding another weapon firing another cartridge would add. Nevertheless, on June 15, 1940, the Secretary of War issued an order for a "light rifle" for ammunition carriers, machine-gun crews, mortar crews, and ordnance and communications personnel, the latter to be prepared for possible attacks by parachute troops or other raiders attacking headquarters units.

The initial requirements for the new light rifle (also termed a "short rifle") specified that it should have a weight of no more than 5lb with sling, be effective to 300yd, and capable of being carried with a sling or similar carrying device. The sling requirement was especially important, since most users of the light rifle would be operating crew-served weapons or performing other tasks. Originally, it was estimated that 500,000 light rifles would be required.

Before the new weapon could be developed, however, a cartridge had to be chosen or developed. As a result, in the fall of 1940 the Army approached Winchester about developing a cartridge. Winchester based the new cartridge on the .32 Winchester Self-Loading cartridge necked down to .30 caliber. Development work on the cartridge, which received the

designation .30 SL M1, continued, with the first 25,000 rounds delivered in May 1941. Winchester did an additional preproduction test run of 50,000 .30 SL cartridges, which were delivered on January 9, 1942.

On October 1, 1940 – even before the cartridges were available – more than two dozen arms manufacturers and inventors were contacted to solicit possible designs. By this point the three initial requirements for the new weapon had been joined by several more.

To start with, the new weapon had to be designed to function with the new Winchester .30 cartridge, which had a rimless case, a full-metal-jacketed bullet of 100–110 grains, and a muzzle velocity of approximately 2,000fps. Test weapons had to be submitted by February 1, 1941. The weapon had to be simple, strong, and compact, and lend itself to ease of manufacture. The mechanism had to be designed to prevent sand, dirt, rain, or other debris from entering the action. The weapon should contain as few parts as possible and parts needing cleaning or likely to need replacement should be easy to dismount. The weapon had to be designed to operate with a box magazine that could be fed from clips or chargers, with magazines holding five, ten, 20, and 50 rounds to be supplied along with the weapon. The breech mechanism had to be designed to preclude injury to the user due to premature unlocking; the firing pin was to be controlled by the trigger and sear directly; the cartridge was not to ignite until the trigger was pulled to release the firing pin; the bolt was to remain open after the last cartridge was fired; and it had to be possible to insert a new magazine with the bolt locked open or closed. The trigger pull was to be 3–5lb, and the weapon had to feature a safety that allowed it to be carried cocked with a round chambered safely.

Ammunition carriers were one of the original specialties for which the carbine was developed. This Marine carries his M2 Carbine slung while moving forward against Communist Chinese troops during fighting on Hook Ridge in Korea in November 1952. (NARA)

In addition, the rifle had to be well balanced and capable of effective firing from the shoulder. It had to feature a self-loading action capable of semi-automatic fire or select fire. The mechanism should allow hand functioning if necessary. The weapon had to have firmly fixed sights to avoid movement due to extensive firing; eye relief for the rear sight was to be not less than 2.5in nor more than 6in, and the sight was to be of simple aperture type with two elevation adjustments and no windage adjustment. The weapon had to be designed so it could be produced without special steels or other components or extensive machine work, and should not require special lubricants not in general military issue. Finally, the need for special tools to maintain the rifle was to be kept to a minimum.

A series of tests were developed for the "short rifle" and those considering submitting models for testing were made aware of them.

In addition to checking that the rifles met the bid specs other tests would include the following:

1. The rifle was to be disassembled, the names and numbers of types of parts and springs recorded, and the rifle weighed.
2. There was to be a timed disassembly and reassembly of the rifle, dismounting the breech and magazine mechanism, and reassembly of the breech and magazine mechanism; the bolt or block was not to be disassembled. In addition to the time required for these operations, the number and type of tools required was also recorded.
3. After firing the rifle enough to heat the barrel, it would be fired at night to note the amount of muzzle flash.
4. Using a gun mounted in a pendulum, free recoil would be measured; subjective evaluations of recoil would also be carried out by shooters.
5. The rifle was to be fired for accuracy at 100yd and 300yd.
6. Twenty rounds were to be measured for "instrumental velocity."
7. The rifle was to be fired for reliability, with 150 rounds at an elevation of plus-75 degrees and a further 150 rounds at an elevation of minus-75 degrees; half of the firing was to be done with the rifle held loosely in the hands.
8. Five thousand rounds were to be fired for endurance (this was changed to 4,500 rounds during the actual trials); malfunctions and parts breakage were to be noted; at points during the test firing it was to be allowed for the rifle to be oiled or disassembled and cleaned.
9. The rifle was to be fired continuously from the shoulder at the rate of 15 rounds per minute until 150 rounds were fired or there was a serious stoppage.
10. After corking the barrel, the rifle was to be exposed in a box prepared for a dust test, then the rifle could be shaken or dusted or dust could be blown off before firing 20 rounds.

A points-based rating system was developed for evaluating the rifles, with values assigned as follows:

Weight	15 points
Length	10 points
Simplicity	15 points
General functioning	25 points
Endurance	10 points
Accuracy	5 points
Recoil	5 points
Rain-dust tests	5 points
Unusual positions	5 points
Hand operation	5 points
Total	100 points

Nine designs were submitted for the trials, but two were immediately eliminated, one for being too heavy and the other for being chambered in the wrong caliber. That left the following seven rifles that actually went through the testing procedure. These were supplied by the Savage Arms Corporation; the Woodhull Corporation; Colt's Patent Firearms Manufacturing Company; the Harrington & Richardson Arms Company; the Auto-Ordnance Company; Springfield Armory; and the Bendix Aviation Corporation.

THE PRELIMINARY TRIALS

During the preliminary Light Rifle Trials, which ran from May 8 to June 16, 1941, six of the rifles were tested with the following conclusions.

Savage Arms Corporation Light Rifle (short-recoil type)

The weight was over specs at 5.45lb, the design was termed "intricate," and the number of parts (80) deemed high. As result, ease of disassembly and maintenance were rated poor. Handiness and recoil were rated as good. Although general functioning was rated as good, there were problems with feeding from magazines and the method for holding the bolt open after the last round was fired. During the endurance test, the breech bolt housing broke at 2,882 rounds precluding the dust test. Functioning in the rain and in unusual positions was deemed good, though the rifle had to be lubricated for the rain test and when held loosely the

Two soldiers take a rest on August 14, 1943, during the invasion of Sicily. The sergeant at the left, armed with an M1 Carbine, assumes the same position as the statue of a soldier in the Italian World War I memorial. (NARA)

Carbine ammunition

Various manufacturers loaded the M1 Carbine round during World War II, including Winchester Repeating Arms Company, Western Cartridge Company, Lake City Ordnance Plant, Kings Mill Ordnance Plant, and Evansville Ordnance Plant. Cartridges from the last-named manufacturer were noteworthy as they used steel cases instead of brass ones. Normally during World War II, .30 Carbine ammunition was packed in 50-round boxes. Ball, dummy training rounds, tracer, and grenade-launching rounds were offered in the 50-round boxes. Grenade-launching cartridges were also sometimes loaded in six-round cartons. To make loading the 30-round magazines for the M2 Carbine easier, late in the war, carbine ammunition was produced in ten-round stripper clips, which were supplied in bandoleers. To preserve ammunition until needed, 16 50-round boxes were packed into sealed metal cans termed "spam cans" by the troops. When the author was in his twenties during the 1960s and 1970s, these 800-round cans could often be purchased very reasonably on the surplus market and this allowed M1 Carbines to be shot very inexpensively.

BELOW The M1 Carbine round (center) compared to the .45 ACP round of the M1911 pistol (left), and the .30-06 round of the M1 Garand (right). (Author photos)

rifle doubled (fired two shots instead of one). Hand operation was good. Due to the bolt failure, the rifle was resubmitted later in the testing and completed the tests. The primary negative factors were the number of parts and difficulty of assembly and disassembly.

Harrington & Richardson Arms Company Light Rifle (delayed-blowback type)

The weight was over specs at 5.81lb, and the number of parts was 48. General functioning was rated as poor due to feed problems from the magazines and inability to handle nonstandard ammunition. There were also problems with ruptured cases due to the delayed-blowback system. Endurance was rated as excellent except for problems with some small screws. The action design was rated as simple to operate, accuracy was good, and recoil was light. Functioning in rain and dust was good, but in unusual positions was only fair. Hand operation under adverse conditions was poor. (This rifle was designed by Eugene C. Reising, who had designed a submachine gun using the same principles. Adopted by the US Marine Corps, this submachine gun did not stand up well to combat usage.)

Springfield Armory Light Rifle (gas-operated type)

This rifle was a top-feed design that used five-, 20-, and 50-round magazines. Because of the top-feed system, the sights were angled to the right. The weight of the rifle was 4.91lb, and it had only 44 parts. The action was deemed simple, functioning excellent, endurance excellent, accuracy excellent, and recoil light. Functioning in rain was excellent, but

in dust only fair. With the exceptions of some double fires when held loosely, functioning in unusual conditions was excellent. Hand operation was excellent. This "light rifle" had been designed by John C. Garand, designer of the US M1 Garand rifle; therefore it was viewed with a certain favorable predisposition. Evaluators made a list of suggested improvements to the design including: correcting the possibility of accidental discharge when the bolt was closed by hand after pulling the trigger; changing the line of ejection so cases did not strike the shooter's left forearm; slightly lengthening the stock and thickening it on the left side to compensate for offset sights; bending the operating handle from vertical to the right; and using standard sling swivels on the left side. Some evaluators wanted the magazine moved underneath the rifle while others liked it on top.

Woodhull Light Rifle (straight-blowback type)

The weight of the rifle with five-round magazine and sling was 5.5lb. As initially submitted, the Woodhull was rated poor on functioning, endurance, accuracy, ease of disassembly and care, and hand operation. Recoil was considered excessive, as was to be expected with a straight-blowback action. The number of small parts was considered too many,

Three Allied leaders on the range with the adopted M1 Carbine, 1944. Dwight D. Eisenhower (left) and LtGen Omar Bradley (right) are escorting Winston Churchill on a tour of inspection of an American forces camp in England. (Keystone/Getty Images)

and there were numerous ruptured cases and failures to extract. The Woodhull had originally been tested in May and June 1941, but after its poor performance, an improved version was submitted and retested on August 21–23, 1941. Among the improvements was the hardening of the barrel so the chamber could take a higher polish to improve extraction. As resubmitted the Woodhull weighed 6.07lb, more than 1lb over the bid specs. Functioning was improved, but evaluators concluded that the highly polished chamber was necessary for the increased reliability. Under combat conditions, this finish was likely to become eroded. Functioning at 75-degree elevation was poor. Problems with ruptured cases were cured, but this may have been through using lubricated ammunition, which would not be practical in combat. Endurance was rated excellent as was functioning in dust. Recoil was improved but was still considered too heavy and the muzzle blast and report were considered excessive.

Bendix-Hyde Light Rifle (gas-operated type)

An interesting feature of the Bendix-Hyde Rifle was a stock with a pistol grip. Weight was 5.3lb with sling and five-round magazine. Overall, the rifle was considered simple, though there were some trigger problems on full-automatic fire. Functioning was excellent, though there were some failures of the mechanism to close, which was deemed correctible with a heavier spring. Endurance was excellent except for the connecting rod. This rifle showed good 100yd accuracy, but poor to fair accuracy at 300yd. Recoil was light. Functioning in unusual positions and in dust was excellent, but in rain only fair. Ease of disassembly and maintenance was rated as excellent. Hand operation was deemed excellent, though the operating handle and bolt needed to be directly linked so the bolt could be forced closed. In addition to the need to link the operating handle and bolt, recommendations to improve the Bendix-Hyde included strengthening the spring, and it was suggested that the stock be altered to increase the drop at the comb.

Auto-Ordnance Corporation Light Rifle (recoil-operated type)

The Auto-Ordnance Rifle was deemed to have too many small parts. During its initial test it was broken and could not be repaired at the time. As a result, it went back to the factory for repairs and was later retested. Weight was 5.5lb with a sling and ten-round magazine. Due to the complicated mechanism and many small parts, disassembly for maintenance was slow. Endurance was poor and functioning was poor, the latter due to feed problems. Accuracy at 100yd and 300yd was excellent. Recoil was moderate but not consistent.

Colt had also planned to submit a rifle designed by Val Browning, legendary firearms inventor John Browning's son. Colt did not have their rifle ready for the trials and, though given an extension, could not get it to function reliably and withdrew it.

In perhaps the best-known World War II photo of a Marine war dog, a dog handler of 7th War Dog Platoon on Iwo Jima during February 1945 sleeps with his M1 Carbine and Doberman nearby. Dog handlers found the carbine much easier to handle than an M1 Garand rifle should their dog "alert." ((NARA)

None of the light rifles in the preliminary trials was deemed satisfactory, though the Bendix-Hyde and Springfield Armory designs were considered worthy of further tests if some modifications were carried out. Final light rifle trials were scheduled for September 15, 1941, with improved versions of designs previously submitted or entirely new designs allowed. On the basis of the preliminary trials, some modifications were made to the bid specs as well, most notably elimination of the requirement for automatic-fire capability, since it was not deemed necessary and had caused the weight of the rifles to be increased for control. With this requirement removed, a 50-round magazine was no longer deemed necessary as well.

WINCHESTER JOINS THE COMPETITION

Though involved in the light rifle program through manufacturing the cartridges, Winchester had not submitted a design, at least partially because of preparation for M1 Garand production. Winchester had also been working on a Browning-designed military rifle that had problems. David Marshall Williams, a firearms inventor and engineer, was hired to work on this rifle, the problems of which he corrected with a short-stroke gas piston of his own design. Although this rifle was chambered for the .30-06 service cartridge, it was felt that it could be adapted in a much lighter version for the .30 SL cartridge. As a result, Winchester contacted the War Department in May 1941 about producing an entrant in the light rifle trials. LtCol René Studler, Chief of the Small Arms Development Branch, visited Winchester and was impressed with the design. Reportedly, he then urged Winchester to develop a lighter version for submission to the light rifle trials.

1. The early pattern M1 Carbine with flip-up sight, crossbolt safety, and no bayonet lug.

2. A close-up of the stock-mounted double magazine pouch popular with many troops who carried an M1 Carbine.

3. A close-up of the early flip-up carbine sight and crossbolt safety; the magazine release button is also shown.

4. A close-up showing the clever system developed to retain the M1 Carbine's oiler by using it as the "sling swivel" for the carbine's sling; note the US Ordnance Department cartouche to the right of the oiler slot.

5. A top view of an M1 Carbine of the early original type, produced by Quality Hardware; note the top view of the flip-up sight; note also the small button on the cocking handle that may be used to lock the bolt open. (Author photos)

Within 13 days Winchester had developed a prototype based on the short-stroke gas piston but scaled down. To speed production, the trigger interrupter system from the Model 1907 Winchester Self Loading Rifle was adapted. Studler visited Winchester once again and was very impressed with the light rifle, to the extent that he asked Edwin Pugsley, Winchester's Chief Engineer, to bring the prototype to Washington to demonstrate it for Gen Courtney Hodges, Chief of Infantry, and others. The Winchester performed relatively well, although there were 13 failures to feed and one failure to eject. Nine of the failures to feed were when the rifle was held loosely. Trigger pull was considered heavy as well. However, the rifle weighed just under 5lb with sling and five-round magazine, and it had only 54 parts. Hodges asked Winchester to submit the light rifle to the new trials. Although it appeared that Winchester would not be able to get a rifle ready for the trials due to unreliable functioning, with hours left until the rifle was to be submitted, the gas port was opened up to allow more power to be imparted to the piston. As a result, the Winchester operated reliably.

Ordnance Field Service and Technical Bulletin No. 23-7-1 of March 17, 1942, on the Carbine, Cal. .30, M1 offers a good concise explanation of how the gas-piston system worked:

> A gas cylinder is positioned on the underside of the barrel near the chamber and contains the piston, locked in by the piston nut, which limits its rearward movement. A gas port is drilled at an angle through the gas cylinder and barrel, entering the bore about 4½ inches from the rear face of the barrel. This rearward positioning of the gas cylinder and port makes it possible to take the gas from the bore close to the chamber, before cooling can take place, thus minimizing carbonization.

The use of the piston system would later allow the select-fire M2 Carbine version (discussed below) to be more effective, as the piston system kept the carbon build-up down during full-automatic fire. It is worth noting that almost 70 years after the development of the M1 Carbine, US special operations units are pushing for the gas-impingement design of the M16/M4 series to be replaced by a gas-piston system.

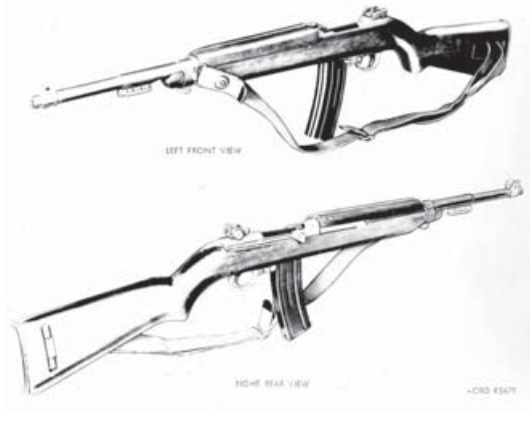
The Turner Light Rifle, another new design, was submitted and tested between August 18 and 21, 1941, where it proved to be of enough interest that the inventor was encouraged to make some improvements and resubmit it. Improved versions of the designs previously submitted were preliminarily tested in the weeks prior to the final trials to select the new light rifle, to be held between September 15 and 30, 1941.

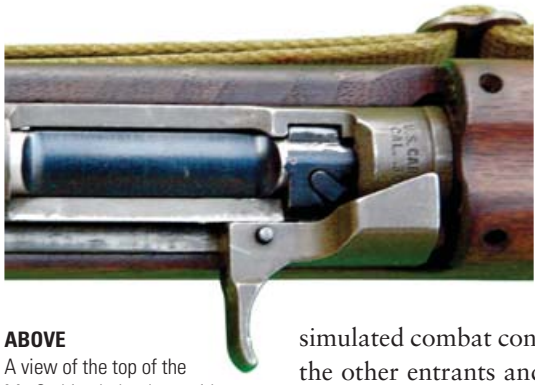
THE FINAL TRIALS

Because of the pressing need for the new light rifle, tests were expedited by having only US Army infantry personnel involved, with observers from other branches of the Army as well as the Navy and Marine Corps. Five rifles were tested: the Springfield, the Bendix-Hyde, the Winchester, the Turner, and the Reising. Over a period of ten days, 8,000–10,000 rounds were fired from each rifle for accuracy, reliability, and endurance under

BELOW LEFT
The M1 Carbine official Ordnance diagram. This M1 is fitted with what appears to be a large, 30-round magazine. (NARA)

BELOW
Ordnance Department Precautions diagram for the M1 Carbine. (NARA)





ABOVE
A view of the top of the M1 Carbine bolt, along with the cocking handle and chamber markings. (Author photo)

ABOVE RIGHT
A view of the stock and forearm on what is known among collectors as the "high wood" stock, which was used on earlier models of the M1 Carbine. (Author photo)

simulated combat conditions. The Winchester dramatically outperformed the other entrants and was recommended for adoption as the "Carbine, Caliber .30, M1" with a few minor modifications.

INTO PRODUCTION

Despite the urgent need to get the M1 Carbine into production, Winchester had only two prototype carbines. They now had to develop production drawings and tooling prior to beginning production. Because of the numbers desired by the War Department, Winchester also began talks immediately about sharing production information with the Inland Manufacturing Division of General Motors. On October 5, 1941 Inland and Winchester each received orders for five carbines of the accepted design. Winchester had drawings by this time and on October 13 sent a set to Springfield Armory as the basis for the official drawings being prepared there. However, there were some slight differences from the Inland drawings.

The carbines from both Winchester and Inland were used for various firing and interchangeability tests. Parts were also measured and photographed. On December 1 a meeting was held at Springfield Armory to finalize details from the Winchester and Inland drawings in order to prepare official Springfield Armory production drawings. Due to a shortage of draftsmen, Inland actually loaned five draftsmen to Springfield Armory on December 5. They returned to Inland on December 12 with a full set of production drawings. Of course, the Japanese attack on Pearl Harbor on December 7 gave new urgency to weapon production.

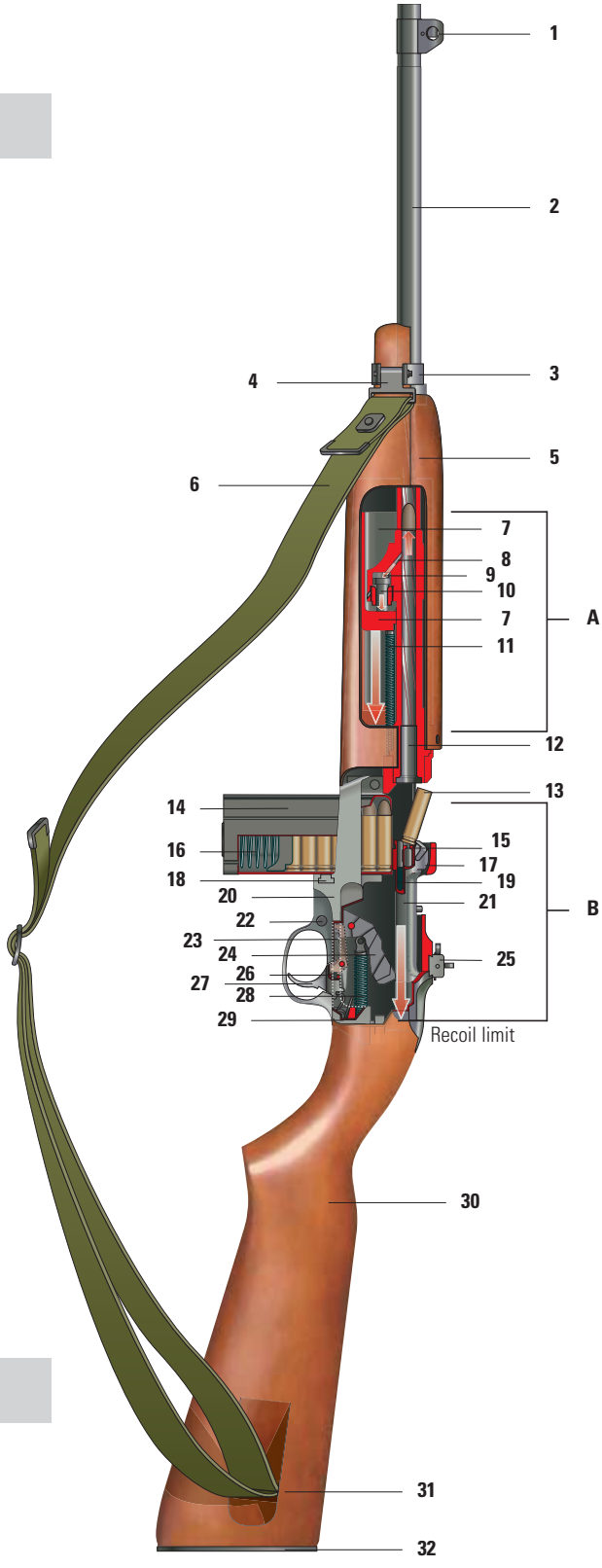
A casting for the receiver of the M1 Carbine. (John Miller)

Winchester's original contract of November 24 was for 350,000 M1 Carbines, 3,500 spare parts kits (each for 100 carbines), 385,000 slings, and 525,000 oilers. The unit price per carbine was US$39.95. Production was expected to begin in September 1942 and run through November 1943, with 30,000 carbines to be delivered per month once full production was reached. In actuality, Winchester did not fulfill the contract until May 23, 1944. During production, Winchester ran into two primary problems in speeding production – obtaining the machine tools needed and hiring enough workers.

THE M1 CARBINE EXPOSED

Key

1 Front sight
2 Barrel
3 Front band
4 Sling swivel
5 Hand guard
6 Sling
7 Operating slide
8 Gas port
9 Gas cylinder
10 Piston
11 Operating slide spring
12 Receiver
13 Shell clearing receiver
14 15-round box magazine
15 Firing pin
16 Magazine spring
17 Extractor
18 Magazine catch
19 Ejector spring
20 Trigger housing
21 Bolt
22 Safety
23 Sear
24 Hammer
25 Rear sight
26 Sear spring
27 Trigger
28 Hammer spring
29 Trigger spring
30 Stock
31 Rear sling mount through oiler bar
32 Butt plate



Operating sequence

A As fired bullet ejected, gas forces back operating slide
B Bolt recoils, pulling back extractor, ejecting shell. Top round in magazine springs into feeding position when cleared by bolt

Inland, the second prime contractor on the M1 Carbine, received a contract for 336,968 carbines on November 25. At US$48.93 per gun based on a production rate of 1,000 per day, Inland's cost to the government was higher than Winchester's. A supplement to the original contract in December 1941 added another 200,000 carbines to the Inland contract.

During early production, both Winchester and Inland adjusted the production process for efficiency and quality, but they were operating under pressure to deliver as many carbines as possible in the shortest time possible. As a result, some innovative techniques were instituted. For example, to speed the carbines' accuracy adjustment, Inland would attach a miniature target showing points of impact to the triggerguard, thus showing workers what adjustments had to be made.

Prior to the attack on Pearl Harbor, the total number of carbines required by the Ordnance Department stood at 886,698, a number Winchester and Inland should have been able to achieve within a couple of years. However, once the USA went to war the demand for carbines increased dramatically. In February 1942 the War Munitions Program gave a requirement of one million carbines by the end of 1943, a number Winchester and Inland would not be able to achieve. As a result, five additional manufacturers were given contracts to produce 30,000 carbines each per month.

The five recipients of follow-on carbine contracts were: Underwood Elliott Fisher Company (Hartford, CT), Quality Hardware and Machine Company (Chicago, IL), Rock-Ola Manufacturing Corporation (Chicago, IL), Irwin-Pederson Arms Company (Grand Rapids, MI), and Rochester Defense Corporation (National Postal Meter) (Rochester, NY). Only one of these contractors had previous experience producing armaments, and, ironically, that was the one that would have problems. Underwood was best known for its typewriters while Rock-Ola was a jukebox manufacturer; this latter fact prompted troops issued carbines made by Rock-Ola to ask if their carbine would play music as well as shoot. And there may have been some company clerks issued both with Underwood typewriters and Underwood carbines.

COORDINATING PRODUCTION

To oversee the various manufacturers of the M1 Carbine and make sure quality control remained consistent, the Carbine Industry Integration Committee was formed. Carbine production progressed efficiently due to the Integration Committee constantly monitoring stockpiles of raw materials, parts available from subcontractors, and finished carbines coming off the assembly lines. One of the great accomplishments of the Integration Committee was the avoidance of carbine producers remaining idle due to lack of key components. An important element in keeping carbines flowing off the lines was the availability of barrels. As a result, the US government developed a system in which barrels were supplied to many of the carbine manufacturers. Many of these barrels came from Winchester, Inland, and Underwood, though some did come from other sources.

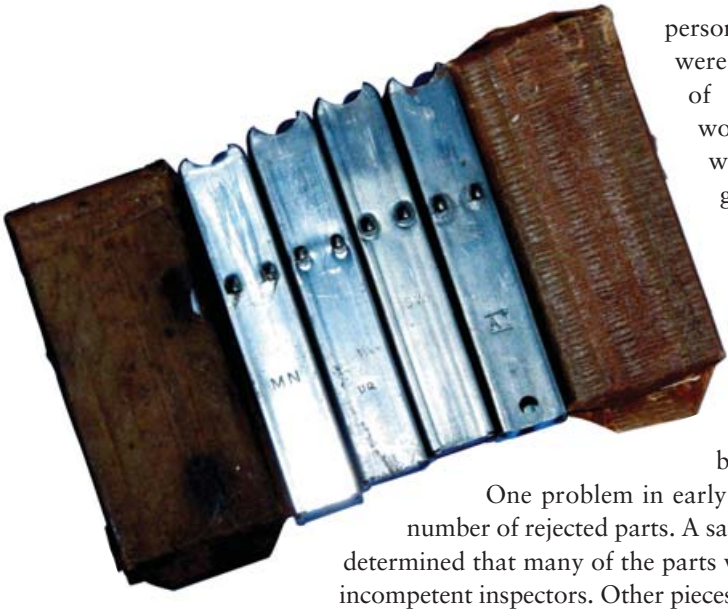
Underwood got production under way on its initial 100,000-carbine contract and was first to deliver test examples to Aberdeen Proving Grounds, MD. It is interesting to note that of all manufacturers of the M1 Carbine, Underwood produced the highest number of parts in their own facilities, though all manufacturers subcontracted a substantial number of parts. By mid-1943 Underwood received additional contracts for almost 730,000 more carbines. As had Inland, Underwood found that innovative ways to make sure the carbine's fixed sights were on target speeded up inspection and delivery substantially. As a result, Underwood built ranges in the factory and developed a quick method using a targeting telescopic sight. At its peak, Underwood was test-firing and targeting 3,000 carbines per day. Underwood grew more efficient and eventually achieved production of carbines as high as 90,510 for one month.

An early M1 Carbine photograph, from January 22, 1942, shows the weapon with a knife taped to the barrel to illustrate what it would look like with a bayonet, though a bayonet mount would not be developed until later in the war. (NARA)

On March 21, 1942 Quality Hardware received an initial contract for 175,000 M1 Carbines at US$50.45 each plus slings and oilers. Actually, the company made only one part, the receiver, and subcontracted the other 63 of the 64 parts in the finished carbine. Quality Hardware worked closely with the subcontractors to make sure that parts flowed effectively. Assistance included technical and engineering assistance as well as specialized tooling. So successful was Quality Hardware's use of subcontractors that other manufacturers of the M1 Carbine learned from them.

Rock-Ola received a carbine contract on June 22, 1942 to produce 145,000 carbines at US$58 each plus slings and oilers. As part of the same contract, Rock-Ola was also to produce 161,409 barrels and gas cylinders for other carbine manufacturers. A supplement to the contract on November 7, 1942 raised the number of carbines to 168,500 as well as increasing the number of slings and oilers. In February 1943 another supplement to the contract added 152,746 more carbines to the Rock-Ola contract. Unlike Quality Hardware, Rock-Ola chose to manufacture all 13 major components of the M1 Carbine in its own facilities and subcontracted only selected smaller parts.

Getting Rock-Ola production started proved problematical as early examples tested showed metallurgical defects and lack of reliability. Problems of coordination among management and production personnel contributed to the inability of Rock-Ola to get into full production. As a result, the Ordnance Department pressured Rock-Ola to hire management personnel with experience in producing firearms. The Rock-Ola General Manager and Comptroller was dismissed, as was the plant manager, while



M1 Carbine magazines were marked with contractor markings; these markings indicate magazines made for the following manufacturers: MN (National Postal Meter), UQ (Quality Hardware), SW (Winchester), and AI (Inland). At left and right are carbine magazines still in their waxed paper wrapping from World War II. (Author photo)

personnel from the Ordnance Department were assigned to assist in the management of production. Ordnance personnel worked closely with union members who understood the importance of getting carbines to the troops, and efficiency increased dramatically.

An important improvement was made in Rock-Ola's process of heat-treating carbine bolts. New management personnel helped as well, and absorbed much of the responsibility that had been assumed by Ordnance Department personnel.

One problem in early Rock-Ola production was the large number of rejected parts. A salvage department was established and determined that many of the parts were in spec but had been rejected by incompetent inspectors. Other pieces were reworked and used, thus aiding production and cutting costs. Despite improvements in production, Rock-Ola received no additional contracts for the M1 Carbine.

John D. Pederson was an experienced arms designer best known for various firearms developed for Remington Arms and the US Government. Two of his designs had been submitted for US military trials – a .45 automatic based on a scaled-up Remington Model 51 pistol that lost out to the Colt M1911, and a toggle-action rifle that lost out to the Garand. Among military collectors he is probably best known for the "Pederson Device," which converted the 1903 Springfield rifle to a semi-automatic firing a pistol-sized cartridge. Pederson became involved in the M1 Carbine program through a company he formed with the Irwin family, owners of a furniture manufacturing company in Michigan. The resulting Irwin-Pederson Company submitted a proposal to produce M1 Carbines.

Two problems the Irwin-Pederson Company faced from the beginning were hiring enough skilled labor to produce acceptable M1 Carbines, and obtaining enough machine tools. On March 21, 1942 Irwin-Pederson was awarded a contract conditional on the company having facilities ready for production by October 1942. On April 24, 1942 an amended contract called for Irwin-Pederson to manufacture 112,520 carbines – less barrels and gas cylinders plus slings and oilers – with deliveries to begin in October 1942. As Irwin-Pederson was still waiting to receive machinery, which was scarce due to heavy war demands, no carbines were produced in 1942, and it appeared unlikely production would begin before February or March 1943.

However, enough preproduction carbines were ready for submission to Aberdeen Proving Grounds in early March 1943, but they did not perform well. Those carbines supplied for trials were unreliable and did not pass endurance tests, two receivers cracking in half during the testing. Production never really began at Irwin-Pederson, with only 3,542 carbines being produced, none of which passed Ordnance acceptance. As a result, the contract was canceled. As is often the case with collectors, because the

Irwin-Pederson was manufactured in such small quantities, examples are avidly sought by collectors even though they are of inferior quality. In March 1943 Irwin-Pederson was taken over by the Saginaw Steering Gear Division of General Motors.

Saginaw Steering Gear had been producing Browning M1919A4 machine guns, but in November 1942 the Ordnance Department ordered the company to cut production almost in half, thus leaving spare production capability. The following month, at Ordnance Department request, Saginaw had sent personnel experienced in producing machine guns to observe at Irwin-Pederson and offer advice. Later, on December 22, 1942, representatives of Saginaw met with their counterparts from Inland to discuss making 1,000 carbine receivers per day for Inland. A contract was signed and Inland supplied the fixtures needed to produce the receivers. The Ordnance Department also contacted Saginaw about producing carbine barrels and/or complete carbines. On January 9, 1943 Saginaw submitted bids to produce between 1,000 and 5,000 barrels per day, and 500 complete carbines per day. On February 13, 1943, Saginaw received a contract for 365,000 M1 Carbines, 409,360 slings, and 540,940 oilers. The plan was that Saginaw would eventually produce 60,000 M1 Carbines per month.

During the recapture of Guam in July 1944, a US Marine waits for the order to advance with his M1 Carbine at the ready. (NARA)

During April 1945, well-known war correspondent Ernie Pyle (third from left) has a smoke with a group of Marines. The Marine in left foreground cradles his M1 Carbine. (NARA)

Saginaw Steering Gear also took over production at the Irwin-Pederson plant, resulting in a supplement to Saginaw's original contract for 146,735 carbines, 164,343 slings, and 217,168 oilers. Once initial quality-control and production problems had been solved at the Grand Rapids plant formerly used by Irwin-Pederson, carbines of acceptable quality were delivered and production goals were met. Production at the Saginaw plant was running smoothly by September 1943.

National Postal Meter's partially owned subsidiary Rochester Defense Corporation negotiated a contract to produce 145,000 carbines at US$45 each without spare parts or not more than US$55 with spare parts. This contract was signed on April 12, 1942; on June 10, 1942 Rochester Defense was dissolved and the parent company, National Postal Meter, took over the contract.

Initially, National Postal Meter had intended to produce the receiver, barrel, and trigger housing themselves; however, once the government began supplying barrels to manufacturers as required, they dropped plans to produce barrels and instead decided to produce the bolt and operating slide in-house. Early production test guns submitted by National Postal Meter received high marks, especially during the "rain test"; hence, the first 1,000 regular production carbines left the plant on February 13, 1943.

It became apparent by late 1942 that even with all of the plants manufacturing M1 Carbines, demand would still not be met. Therefore, two more manufacturers were approached. One of the two, Standard Products, had initially received a contract to produce M1903A3 Springfield rifles to help fill the shortfall of Garands, but this contract was canceled less

than two weeks later. Instead, on August 6, 1942, Standard Products was awarded a contract to produce 370,000 M1 Carbines. Initially they had problems producing carbines that could pass Aberdeen Proving Grounds testing. As a result, Saginaw sent some of their experienced production personnel to assist, especially in heat-treating. The first production M1 Carbines left Standard Products on July 6, 1943.

The final manufacturer of M1 Carbines during World War II was the International Business Machines Corporation (IBM). At the time the firm was asked to tender a bid for carbine production, IBM was already producing a variety of war materiel including 20mm cannon parts and M1918A2 Browning Automatic Rifles (BARs). On February 16, 1943 IBM received a supplemental agreement calling for 330,000 carbines and 3,300 spare-parts sets (each for 100 carbines) at US$59.96 per carbine and US$755.74 per spare-parts set. A May 21 supplement added 369,000 slings and 488,400 oilers to the contract. Since IBM got into the production of carbines late, various design modifications that had been approved during production at other plants were incorporated.

In October 1943, IBM received another supplement to its contract calling for another 117,000 carbines along with spare-parts sets. After tests conducted in late December at Aberdeen Proving Grounds, IBM carbines were released for service.

From all sources, by mid-1945, more than six million M1 and M2 Carbines were produced, over two million more than the number of Garands produced. Production was broken down as follows:

Inland Manufacturing Division of General Motors	2,632,097[1]
Winchester Repeating Firearms Company	828,059
Underwood-Elliott-Fisher	545,616
Saginaw Steering Gear Division of General Motors	517,212[2]
National Postal Meter	413,017
Quality Hardware Machinery Corporation	359,666
International Business Machines	346,500
Standard Products	247,100
Rock-Ola Manufacturing Corporation	228,500
Irwin-Pederson Arms Company	3,542[3]

THE M1A1

Although airborne troops used the standard M1 Carbine throughout World War II, as early as spring of 1942 Colonel René Studler, the chief of Ordnance R&D, requested a folding stock for use on the M1 Carbine by paratroopers. US airborne troops had used M1 Garands, Thompson submachine guns, and fixed-stock M1 Carbines, but all had proved somewhat heavy and/or

[1] As there are slight variations among the sources, the figures for Inland, Winchester, and Standard Products should be regarded as approximate
[2] This figure includes approximately 50,000 receivers marked Irwin-Pederson
[3] Reportedly

The M1A1 Carbine along with the parachutist's jump holster and the padded rifle/carbine drop pouch. (Author photo)

long for ease of stowage during a jump. Initially US paratroopers had experimented with the German method of jumping with just a pistol and retrieving rifles from a container dropped separately, but it was considered tactically preferable for paratroopers to be able to fight as soon as they hit the ground. The M1 Carbine was considered the best weapon upon which to base a folding-stock paratroop weapon, though at least some US paratroopers would continue to jump with M1 Garands and Thompsons.

Winchester, Springfield Armory, and Inland worked together on the project. A design was submitted in March 1942 by an Inland engineer that allowed the stock to be folded or unfolded while still allowing the operator to pull the trigger. The carbines with the folding stock were approved on May 12, 1942, as the M1A1 version. Other than the M1A1's stock, which incorporated a pistol grip for easier handling, all other carbine parts used on the M1A1 were common to the M1. All M1A1 Carbines were manufactured by Inland and are included in the total Inland production figure given above.

IMPROVING THE CARBINE

As the M1 Carbine saw more and more combat, requests for improvements came in from the front. The simple flip-up rear sight was not considered accurate enough; the push-button safety was often mistaken for the magazine-release button; and the inability to mount a bayonet needed to be addressed. The latter request came especially from the US Marines, who had traditionally put great stress on the use of the

bayonet. To address these issues, an adjustable rear sight, rotary safety, and a bayonet lug for the M4 Bayonet-Knife were added to carbines produced by Winchester and Inland very late in World War II. However, many carbines from other manufacturers will be found today with one or more of the later features, which were added when they were refurbished at arsenals after the war.

Since the M1 Carbine was not originally equipped with a bayonet lug, once it became available those with carbines were issued with the M3 trench knife instead of a bayonet. The M3 had a 6.75in spear-point blade, fully sharpened on one edge and with a sharpened 3.5in "false edge" on the top of the blade. The steel crossguard bent forward on the top of the knife. Stacked leather washers formed the handle, topped by a steel pommel. Originally the M3 had an M6 leather sheath, but this was soon replaced by an M8/M8A1 olive-drab fiberglass sheath. M3 fighting knives were very popular with airborne troops, who strapped them to their calves.

Complaints about the lack of a bayonet for the carbine led to the development of a bayonet lug and of the M4 bayonet, which was standardized in May 1944. M4 bayonets were actually quite similar to the M3 trench knife, except that the crossguard incorporated a hole to slip over the barrel, and the pommel had locking levers for attachment to the bayonet lug of the carbine. Early M4 bayonets used stacked leather washers for the handle; from 1954 black plastic grips were used. The M8A1 fiberglass sheath was used for the M4 bayonet as well as the M3 trench knife. In actuality, few M4 bayonets actually served as bayonets during World War II, as only a limited number of carbines were produced with the bayonet lug. As a result, some M4 bayonets were used as fighting knives. During postwar arsenal refits of carbines, most were fitted with the band with the bayonet lug.

1. A close-up of the adjustable sights that came into use on the M1 Carbine by 1944, though only a small percentage of carbines were built with adjustable sights before the end of the war. However, during the postwar period many were upgraded with the more accurate sights.

2. A close-up of the selector switch-type safety, which was used on late-war carbines and many postwar upgrades.

3. An M1 Carbine with its bolt locked open; notice also the later adjustable sight.

4. The bayonet lug that was added on late-war carbines and postwar refurbished carbines; note also the sling swivel.

5. A close-up of the sling swivel and sling-attachment system for the M1 Carbine. (Author photos)

On February 20, 1945 – D-Day +1 – a Marine on Iwo Jima exits his foxhole with his M1 Carbine, which has the M8 grenade launcher mounted. (NARA)

In early 1942, the Headquarters, Army Ground Forces indicated the need for a grenade launcher that would work on the M1 Carbine. Initial tests employed a modified M1 Garand grenade launcher. After tests of various experimental models, the "Launcher, Grenade, M8" for the carbine was adopted in March 1943. Initial contracts called for the production of 100,000 M8 grenade launchers; the carbine could fire ball ammunition with the launcher attached, though accuracy would be degraded slightly. Firing either from the shoulder or with the butt resting on the ground, operators could fire antitank or antipersonnel rifle grenades. Additional contracts were later awarded, resulting in the production of 387,165 M8 grenade launchers by the end of the war. There were slight changes made during production, including the method of locking the launcher into place on the carbine. Special M1 Carbine cartridges were developed for launching grenades, specifically the M6 and M7 rounds.

THE M2 CARBINE

Although the M1 Carbine as originally conceived would have offered select-fire capability, as produced it was a semi-automatic only. As World War II progressed, the advantages of having a select-fire version of the M1 Carbine that would allow longer aimed fire on semi-automatic, and the ability to fire on full automatic at closer ranges, was realized. Troops in the Pacific, and airborne troops, were particularly interested in a full-automatic version. In May 1944 research and development began on a conversion to give the M1 Carbine full-automatic capability. Springfield Armory, Winchester, and Inland were all involved, but it was a team of Inland engineers who designed what was initially known as the T4, and then when it went into production as the M2 Carbine.

An M1 Carbine with the M8 grenade launcher mounted, and the rifle grenade for it. Note also in the close-up the bayonet lug, installed on late-war and refurbished carbines. (John Miller)

To take advantage of the full automatic capability, a 30-round curved magazine was developed for the M2 Carbine, though it could be used in the M1 Carbine as well. However, because the heavier 30-round magazine put greater strain on the magazine catch, a sturdier catch was designed for the M2. In September 1944 a contract was issued for Inland to produce 500 T4 Carbines. Early models were satisfactorily tested and it was recommended that the T4 replace the M1 Carbine. As work continued on more preproduction T4/M2 Carbines, it was determined that some changes had to be made, including strengthening the slide, altering the stock slightly, and modifying the sear, disconnector, and retainer pin. A selector switch on the left side of the receiver allowed the T4/M2 to be set for full or semi-automatic fire. Production M2 Carbines had a cyclic rate of 750rpm on full-automatic fire, but proved to be controllable.

1. A right-side view of the M2 Carbine; note the selector switch just behind the chamber. (John Miller)

2. An M2 Carbine stock showing the cut for the selector switch. (Author photo)

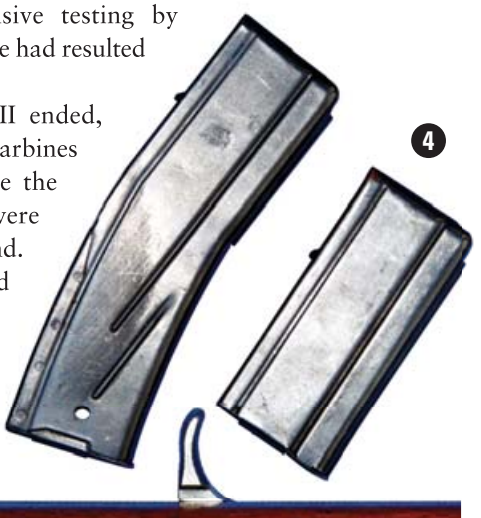
3. A close-up of the M2 Carbine selector switch and 30-round magazine. (John Miller)

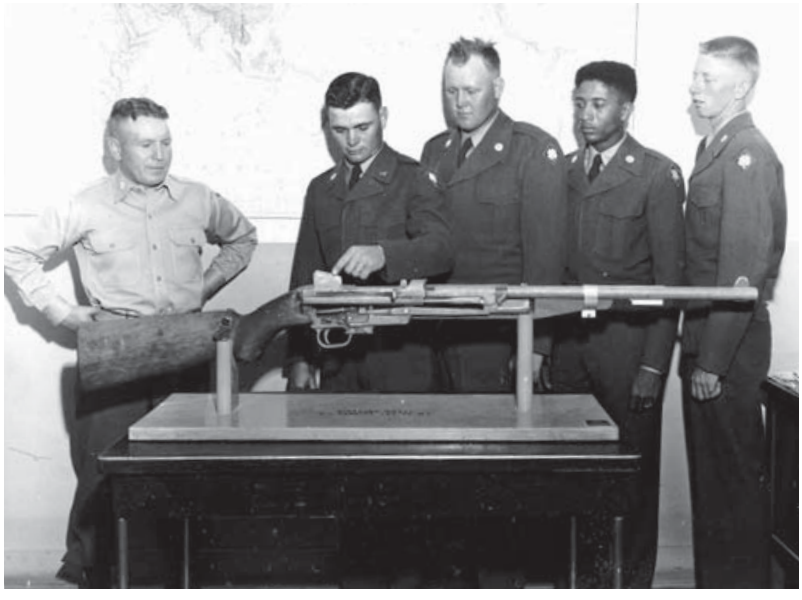
4. The 30-round magazine designed for the M2 Carbine (left), and (right) the standard 15-round M1 Carbine magazine initially recommended by the US Army's Infantry Branch. Many M1 Carbines that were refurbished after the war had the stronger catch fitted. The standard M1 Carbine catch would generally retain the 30-round magazine but might wear faster. (Author photos)

5. A close-up of the M2 magazine catch, which was strengthened to handle the heavier 30-round magazine. (Author photo)

Winchester had also developed a full-automatic conversion for the M1 Carbine, and tried to get the Ordnance Department to consider it as well, even though Inland was already preparing to produce the M2. One advantage of the Winchester conversion was that the selector switch was incorporated into the rotary safety. Although Winchester was allowed to demonstrate their conversion, it was the Inland version that was adopted and Winchester also began producing the M2 in May 1945. However, rushing the M2 into production to meet demand precluded the normal extensive testing by Springfield Armory, and by June had resulted in high rejection rates.

By the time World War II ended, approximately 570,000 M2 Carbines had been produced, and once the early production problems were solved they were in high demand. As a result, after the war's end a substantial number of M1 Carbines were converted to M2 configuration with a "2" stamped over the "1" to identify them.





Troops learn the nomenclature of the M2 Carbine from this model at Fort Bliss, Texas, in April 1954. (NARA)

THE M3 CARBINE

Another variation of the M2 Carbine came about in response to a request from the Chief of Engineers in early 1944 for a carbine that could mount the "Sniperscope" then under development. This Sniperscope was an early active infrared 'scope with a range of about 70yd. Its basic components included the telescope assembly, power cable, power pack with battery, and a knapsack with M1936 pistol belt and suspenders. A vibrator power supply converted 6-volt battery output to 4,250 volts for the image-viewing tube. Infrared rays were focused on the image tube, as the result of which they were accelerated to strike a fluorescent screen. Through this process, the sub-visible-light image was converted to the visible range showing objects in various shades of green.

A right-side view of the T3/M3 Carbine with infrared "Sniperscope" and flash hider affixed. (John Miller)

A left-side view of the T3/M3 Carbine with 'scope mounted. (John Miller)

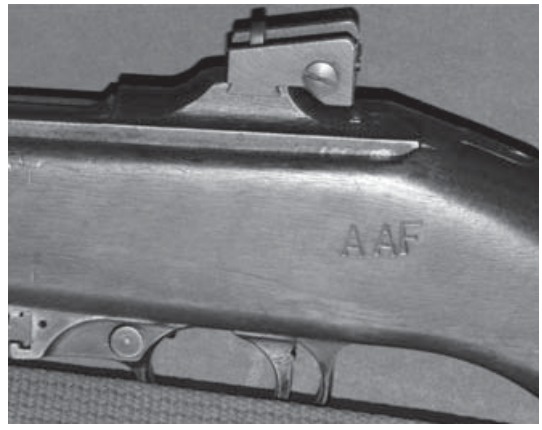
Combined, the components of the M1 Sniperscope weighed 22lb 14oz. Development began on the T3 Carbine to mount the M1 (improved and re-designated M2 just over a year later) Sniperscope in February 1944. Both Inland and Winchester submitted designs. Inland's design employed a 'scope rail mounted in the rear-sight dovetail and brazed to the top of the receiver ring. Winchester's design employed a mount integral with the receiver.

Both designs were approved, and Inland was assigned a block of 1,700 serial numbers for T3 Carbines, though it is unclear if this many were manufactured; Winchester received an order for 5,160 T3 Carbines, but only 1,108 were made before the contract was canceled. On August 16, 1945, the M2 Carbine modified to take the Sniperscope was standardized as the "Carbine, Caliber .30, M3." Improvements would be made in the mounting system, including one that allowed more efficient mounting of the infrared illuminator and its switch below the carbine's forearm. On later versions of the M2 Sniperscope, the optical sight and infrared-light source were both mounted atop the carbine. Range on the M2 Sniperscope was increased to 100yd as well. When the M3 was standardized, it was equipped with the M3 (T23 modified) flash hider to inhibit muzzle flash, which could impede night vision.

BELOW
A close-up of the mount for the T3/M3 Carbine. (John Miller)

BELOW RIGHT
A fine example of a T3 Carbine, boxed with accessories. (Courtesy of Rock Island Auction Company)

Electronic Laboratories, which produced the Sniperscope during World War II, delivered 1,700 units before the end of World War II, with all scheduled to go to the Philippines or Okinawa. By the time the company was sold in 1947, it had produced 4,500 units.



One of the carbines rebuilt after the war with the AAF (Augusta Arsenal) rebuild markings. (Author photo)

POSTWAR DEVELOPMENTS

After World War II, most M1 Carbines were overhauled in government arsenals and upgraded with later features including the bayonet lug, adjustable rear sight, rotary safety, and stronger magazine catch to retain the 30-round magazine more securely. Since M2 Carbines had been produced later in the war, they generally incorporated these features already. As a result of this refurbishment effort, examples with the original early features are highly sought after by collectors of carbines.

Although the carbine was no longer in production, there were so many in the inventory that development continued on accessories and upgrades. When production was canceled at all manufacturers other than Inland and Winchester in 1944, arrangements were made for remaining parts at other manufacturers either to go to the two remaining manufacturers or to go into government stores as spares. Arrangements were also made for the best tooling from each manufacturer to be sent to Springfield Armory so that a new production line could be established quickly if needed.

Springfield Armory was also in charge of developing a method for storing the carbines that would be surplus after the war for up to 50 years in case of future need. A drum was developed in which ten fully assembled carbines along with slings, oilers, and magazines could be stored, with the drum filled with dry nitrogen to replace the air. Later it was determined that the nitrogen filling was not necessary and that silica gel could be packed in the drums as a desiccant.

Two later-model "low wood" carbines: at top an M1, and at bottom an M1A1 with stock open. (Author photos)

Among postwar experiments related to the M1 Carbine were the use of laminated stocks, plastic handguards, and cast components. A device tested on February 23–24, 1949 – the Adaptor, Winter Trigger – could have proved quite useful to the US troops sent to Korea the following year, or to those assigned to Northern Europe with NATO. Designed to allow firing of the carbine when wearing heavy mittens, the Winter Trigger was tested in a Type A and a Type B configuration. Type A used two plates that fit over the triggerguard and contained a trigger actuator. Type B was more akin to some winter triggers used on other rifles including the M1 Garand and incorporates a "squeezer" behind the triggerguard that activates the trigger.

SHOOTING THE M1 CARBINE

Several key features distinguished the M1 Carbine from other weapons used alongside it. First, the carbine's low weight counted in its favor. An alternative method of chambering a round often used after a reload so the shooter could maintain the sight picture was to bring the support hand under the carbine and use it to operate the bolt **(1)**. The lightness of the M1 Carbine allows the weapon to be supported with one hand during this process. Troops firing from fortified positions could use this method to carry out a fast magazine change while resting the barrel on top of an emplacement or barricade.

Second, the handiness of the M1 Carbine due to its short barrel and compact overall length made the carbine very popular for fighting in jungle or heavy forest, where an enemy might suddenly be encountered at close range and the ability to quickly swing the weapon on to target was critical. Also in close combat, the 15-round magazine capacity and rapid change capability allowed the soldier armed with a carbine to continue to engage in an ambush or counterambush situation. On M2 Carbines, or overhauled M1 Carbines with the strengthened magazine catch, the use of a 30-round magazine allowed even more sustained fire. Some experienced troops who normally preferred the M1 Garand because of its greater striking power and range would try to acquire a carbine for patrolling in jungle or forest. Other troops preferred the carbine's close-range handling characteristics on night patrols.

Although US production of the M1 Carbine ceased at the end of World War II, enough carbines had been produced to supply the needs of the US armed forces for decades as well as supplying US allies. However, US arsenals carried out extensive overhauls on a substantial number of those World War II carbines, upgrading them to late-war configuration. Stocks of the carbine were to prove sufficient for postwar needs, though most used in Korea were of M2 configuration. The M1 Garand rifle also continued to serve after World War II; in contrast to the M1 Carbine, it was necessary to restart Garand production at Springfield Armory and two other manufacturers during the Korean War.

Third, the carbine's action could be rather sluggish in cold weather, especially if not lubricated correctly. Troops in Korea found that when the carbine had been fired a lot and powder residue had built up, or in cold weather, it was sometimes necessary to use force to fully chamber a round. The carbine's cocking handle was large enough that, if necessary, it could be slapped hard with the palm of the hand to drive it home **(2)**. In combat a case could also sometimes stick in the chamber, rendering the rifle inoperable. With a cocking handle that protrudes enough, as the M1 Carbine's does – although only barely – the boot could be used to kick the action open.

A number of features of the weapon were modified in the light of combat experience. The carbine shown in these photographs has been overhauled, probably just after World War II, and has the upgraded rear sight **(3)**. Not only did this sight allow more precise sight adjustment for use at longer ranges, but troops found that for close combat its "ghost ring"-type aperture allowed faster target acquisition and engagement.

The later lever-type safety **(4)** was preferred by troops in combat as the older cross-bolt button safety could be confused with the magazine release when operating the controls by feel in the dark. With the button safety, the magazine could be inadvertently dropped rather than the safety released. With the lever-type safety, the trigger finger could also reach the lever with slightly less travel than with the cross-bolt safety.

USE

Three decades of service

ISSUING THE M1 CARBINE

During the development of the M1 Carbine, it was estimated that 80 percent of those troops formerly issued a handgun would be issued an M1 Carbine. Since approximately 1,750,000 M1911A1 pistols were produced during World War II – not to mention the refurbished M1911 pistols, M1911A1 pistols produced prior to the war, M1917 revolvers, and various .38 Special revolvers that also saw service – it is obvious that a substantial number of handguns were still issued. In at least some cases, troops were issued both a pistol and a carbine.

Early in the war, airborne troops jumped with both a .45-caliber pistol and an M1 Garand, as the Garand was often disassembled in the jump case and the paratrooper might need a means to fight until he could reclaim the rifle and assemble it. However, later in the war many paratroopers jumped with just their M1A1 Carbines, which could be fired with stock folded during the descent. Others who were issued a pistol, such as officers and Military Police, often supplemented it with an M1 Carbine when in combat. For those troops whom the carbine was originally intended for – such as artillerymen, mortarmen, machine-gunners, truck drivers, signal corpsmen, and headquarters personnel – the M1 Carbine was a primary weapon. For many support troops, especially on Pacific islands where the remnants of Japanese garrisons had taken to the jungle, an M1 Carbine was a constant companion.

As the war progressed, the number of carbines allotted to various units in their TO&E (Table of Organization and Equipment) increased. According to Shelby Stanton's *Order of Battle U.S. Army, World War II*, in the TO&E of July 1943 the standard infantry division had a strength of 12,959 personnel, equipped with 5,204 M1 Carbines, meaning that just over 40 percent of the divisional personnel carried a carbine.

In the TO&E of October 1942, the airborne division had a strength of 8,203 personnel, equipped with 3,328 M1 Carbines; again, this meant that just over 40 percent of the division's manpower carried a carbine. Note, though, that this is a TO&E for 1942, prior to the development of the M1A1 Carbine; later in the war more M1A1 Carbines were issued, and fewer Garands and Thompson submachine guns.

In contrast, in the TO&E of August 1942 the cavalry division's 11,661 personnel were equipped with 3,058 M1 Carbines, meaning that only 26 percent of the division's manpower carried a carbine. Even though the cavalry was almost entirely mechanized by this date, the number of pistols – traditionally important for horse cavalry – still stood at 6,656. Although the carbine was a traditional cavalry weapon, at this point more M1 Garands were issued than M1 Carbines – 4,745 to 3,058.

It is also illustrative to look at how the issuance of M1 Carbines compared with the issuance of the other major small arms in a typical infantry battalion of 871 men in February 1944. At this time the small-arms armament comprised 81 .45-caliber pistols, no .45-caliber Thompson submachine guns, 219 .30 M1 Carbines, and 571 .30 M1 Garands. In a parachute infantry battalion of 583 men in August 1944, the

The 17th Airborne Division technical sergeant at left wears his M1A1 Carbine jump holster as he helps adjust the parachute straps of another paratrooper prior to the jump across the Rhine on March 24, 1945. (NARA)

issuance was two .45-caliber pistols, 18 .45-caliber Thompson submachine guns, 310 M1 Carbines, and 280 M1 Garands.[4]

For comparison, in February 1944, a Ranger infantry battalion of 516 men was issued 198 .45-caliber pistols, 56 .45-caliber Thompson submachine guns, 338 M1 Garands, and no M1 Carbines.[5] It can be assumed that the assault mission of the Rangers was viewed as requiring either the sustained firepower of the Thompson or the longer-range striking power of the M1 Garand.

ARTILLERY USE

Artillery units normally accounted for the greatest numbers of carbines within a division. There was a long tradition in many armies of issuing artillery troops carbines. Artillerymen needed their hands free to load, aim, and fire their weapons, but they also needed a weapon with enough range to defend their guns. With the advent of airborne and raiding forces in World War II, attacks on artillery positions from the rear took place alongside fears of an enemy breakthrough, which would expose artillery located relatively close to the front lines to attacks by enemy infantrymen, especially mechanized infantry, who could quickly exploit a breakthrough.

By 1943 US divisional artillery brigades had a headquarters and headquarters battery, to which varying numbers and types of artillery battalions could be attached to fit the mission. As a result, it will be most informative to look at the number of M1 Carbines issued to various types of field artillery battalions (see table below).

Issuance of the M1 Carbine was similar in other types of artillery battalion. It should also be noted that in addition to the M1 Carbine and M1911 pistol, heavier protection was offered to the artillery pieces by issuance of substantial numbers of .50-caliber machine guns and 2.36in antitank rocket launchers.

Type of artillery battalion	Date	Strength	M1 Carbines	M1911 pistols
75mm pack howitzer (truck-drawn)	July 1943	362	295	57
75mm pack howitzer (parachute)	February 1944	583	556	12
155mm or 4.5in gun (truck-drawn)	July 1943	531	454	65
155mm gun (self-propelled)	September 1943	506	433	61
8in howitzer (truck-drawn)	July 1944	581	511	58

In the table above, it will be noted that there is a slight discrepancy between the number of troops and the number of weapons, in each case there being 10–15 fewer small arms than troops. It is possible this may be accounted for by troops armed with Browning Automatic Rifles (BAR), though they would be expected to show in the TO&E.

[4] There is a discrepancy between the number of authorized personnel and the number of authorized weapons on the TO&E for the parachute infantry battalion

[5] The apparent discrepancy between the number of authorized personnel and the number of authorized weapons arises from the fact that a number of men were issued a pistol as well as another weapon

ENGINEER USE

During World War II, US Army engineers were organized into an array of specialized engineer battalions that could be assigned to divisions or brigades as needed. In some cases, engineers would function as infantry as they would seize and hold areas in which they needed to perform engineering work. For example, engineers who were bridging water barriers might have to seize and hold the bridgehead while carrying out their work. Some engineer units operated on the front lines and hence were more likely to face enemy infantry or armor. This is one reason engineers are considered a "combat arm."

That some types of engineer were likely to see more combat than others is reflected in the varying balance of weapons issued to them. The engineer combat battalion was capable of performing an array of tasks including demolitions, obstacle emplacement, fortification, and light bridge-building. In the TO&E of March 1944 the engineer combat battalion had an authorized strength of 666 men, who were issued only 65 M1 Carbines (10 percent), compared to 565 M1 Garands, 16 .45-caliber submachine guns, and three M1911 .45-caliber pistols. Additional weaponry included 12 .50-caliber machine guns, 16 .30-caliber machine guns, and 29 2.36in antitank rocket launchers.

In the TO&E of September 1943, the armored engineer battalion had an authorized strength of 708 men, who were issued 153 M1 Carbines (22 percent), compared to 434 M1 Garands, 153 .45-caliber submachine guns and three M1911 .45-caliber pistols. Additional armament included 20 .50-caliber machine guns, 18 .30-caliber machine guns, and 29 2.36in antitank rocket launchers. Of course, armored engineer battalions also had M2 or M3A1 halftracks, which mounted weapons.

In contrast, in the TO&E of April 1942, the railway operation engineer battalion with an authorized strength of 873 men was issued 489 M1 Carbines (56 percent) and 364 M1911 .45-caliber pistols. There were perhaps a dozen other types of specialized engineer battalion, but these

During September 1944 a Marine war-dog handler on Peleliu waits with his dog. The handler is armed with a Thompson submachine gun and the other Marine with an M1 Carbine. (NARA)

three offer a good illustration of the place of the M1 Carbine with the engineers. The closer to the front lines the battalion operated, the more M1 Garands and the fewer M1 Carbines they were likely to have. On the other hand, battalions such as the railway operation engineer battalion generally operated well behind the lines and relied upon the M1 Carbine and M1911 pistol for protection against saboteurs, thieves, or other dangers.

US MARINE CORPS USE

When it is considered that the US Marine Corps has always trained every member of the Corps as a rifleman, no matter what his military assignment, it is interesting that the M1 Carbine was so widely issued in a Marine division during World War II. For example, based on the Table of Organization F-100 of May 1944, 10,953 M1 Carbines were authorized for a US Marine division of 17,465 men. By comparison, only 5,436 M1 Garand rifles were authorized. Although it must be remembered that US Marine divisions tended to be up to 25 percent larger than Army divisions, the large number of carbines issued may also have resulted, in part, from experience gained in jungle fighting, which had shown that longer-range engagements were less common than mass attacks by the Japanese at night – in which a larger magazine capacity and faster handling ability were paramount. These same night encounters at close range were likely a primary reason that the Marines lobbied for the addition of a bayonet lug to the M1 Carbine. One legendary Marine who gave his stamp of approval to the M1 Carbine was LtCol Lewis "Chesty" Puller, who fired the weapon at Aberdeen Proving Grounds and found it an excellent combat weapon that he felt could replace the Thompson submachine gun and M1911 in Marine units. Marine Raiders who used the M1 Carbine on New Georgia reportedly found it durable and reliable.

During April 1945, a US Marine officer stands in the gateway of the house he is occupying, armed with an M1911 pistol and an M1 Carbine. (NARA)

The carbine's sling

An extremely important M1 Carbine accessory is the sling. As the carbine was viewed from its inception as a weapon for troops who would be performing other primary tasks besides infantry combat, it was assumed that the carbine would be carried slung much of the time. As a result, early bid specs included the sling in the desired weight of the carbine, and slings were included in M1 Carbine orders. Slings were also important as they were necessary to retain the oiler on carbines other than the M1A1, which had a spring-retention system in the folding stock. Early World War II carbine webbed slings were khaki, while later examples were olive drab.

RIGHT On Okinawa during June 1945, a Marine ordnance man, one of the support troops for whom the M1 Carbine was developed, holds his weapon along with an improvised cartridge-carrying sling. (NARA)

THE M1 CARBINE IN COMBAT

The M1 Carbine, known by some as the "Baby Garand," first saw combat in North Africa during November 1942. As more and more carbines were produced, it saw action in virtually every major battle for the rest of World War II. The first combat use of the M1A1 Carbine was by troops of the 82nd Airborne Division during Operation *Husky*, the jump on Sicily in July 1943.

The M1 Carbine and its successors were widely issued and saw service all over the world in World War II, which resulted in many veterans offering widely varying evaluations of its effectiveness. The author was born in 1944 and received his first name from an uncle who would be killed serving as an armored engineer in the Battle of the Bulge, and his middle name from a cousin who had gone down flying the "Hump" route into China and whose body has never been found. As he grew up, he was around uncles, fathers of friends, teachers, and many others who were World War II veterans. The television series *Combat* was popular, and World War II films were in the theaters or on television. Like many of his generation, he grew up with an interest in World War II. Of course, some younger members of his family served in Korea, generally using the same weapons as those who had served in World War II.

For the first decade after returning from World War II and Korea, many of those veterans the author encountered did not discuss their experiences very often. But some did as the years passed. Small arms were an occasional topic of conversation, with the M1 Garand, M1 Carbine, and M1911 most often mentioned. Many World War II books the author read in his teens gave some passing mention to weapon effectiveness, but at the time there were no comprehensive studies of weapon performance of which the author was aware. A very significant event for those interested in World War II weapons occurred in 1963, when the Director of Civilian Marksmanship (DCM) released 240,000 M1 Carbines for sale at US$20 each to members

A paratrooper armed with an M1A1 Carbine pauses for a smoke. (NARA)

of the National Rifle Association. As a result, many World War II veterans and those interested in World War II weapons had a chance to personally own an M1 Carbine. At the time, the author did not receive a DCM carbine, but he did acquire one from a friend a year or two later. As a result, he got to test the weapon's reliability and accuracy first hand. He also found that the carbine would often attract World War II veterans, who would sometimes recollect their experiences with it in combat 20 years previously.

One of the author's uncles who had served in an Army artillery unit in the Pacific during World War II and had little interest in firearms was very interested in the author's carbine; he commented that when he had been in the Philippines, he had always kept his M1 Carbine close at hand with a double magazine pouch slid on to the stock. This was a common practice and gave the soldier 45 rounds of accessible ammunition without having to use magazine pouches. Since the author's uncle was generally shirtless and did not wear webbed gear while working the guns, he considered the handiness of the carbine with the magazine pouch on the stock a huge point in its favor.

Among other veterans the author encountered who talked about World War II, recollections of the M1 Carbine were mixed. Like the author's uncle, many of the support troops who carried the M1 Carbine appreciated its handiness, which allowed them to perform their other duties without being encumbered by an M1 Garand and the belt to hold spare eight-round clips. The father of one of the author's high-school friends had been a Marine in the Pacific during World War II and once told us that he had carried both a BAR and an M1 Carbine at times. He expressed an opinion that the author has heard and read many times. The M1 Carbine is very appealing because it is light and handy, but the .30 Carbine round lacked the stopping power and range to be a serious killing weapon. However, he seemed to realize what many did not. Comparisons of the M1 Carbine to the M1 Garand or the BAR were not valid. It was never intended to replace front-line infantry rifles. An M1 Carbine should be compared to the M1911 pistol or the Thompson or M3 submachine gun. The M1 Carbine had greater effective range than either of these latter weapons, although stopping power seemed to be open to debate. Many felt the M1911 or the .45-caliber submachine gun offered greater close-range stopping power due to the heavier 230-grain .45-caliber bullet. Others felt that the M1's close-range stopping power was more than adequate. As is often the case with small arms, shot placement was important.

Still, it might be worthwhile to stop and discuss the M1 Carbine round and factors affecting its effectiveness in use. On paper, the M1 Carbine round offered more stopping power than the .45 ACP round. With the

During fighting near Naha on Okinawa, Marines prepare to advance. The Marine in the foreground has an M1 Carbine while others have M1 Garands. (NARA)

110-grain-bulleted (sometimes loaded with a 112-grain bullet) military load, the M1 Carbine cartridge gave a muzzle velocity of 1,900fps for a calculated muzzle energy of 882 foot pounds. By comparison, the 230-grain bullet of the .45 ACP cartridge gave a muzzle velocity of 855fps and a calculated muzzle energy of 405 foot pounds. The carbine's longer barrel gave more velocity and, hence, more muzzle energy. Nevertheless, at close range in actual battlefield shootings, many troops found that the heavy, lower-velocity .45-caliber bullet would remain in the body of the enemy, thus delivering maximum energy and stopping power. The smaller .30 Carbine bullet would often pass right through the body of the enemy, preventing maximum delivery of energy. In military loadings, both cartridges used full-metal-jacketed bullets, which were not designed to expand. As a result, the larger diameter of the .45 ACP round also added to stopping power. However, the .30 Carbine bullet's greater penetration proved an advantage when shooting through enemy steel helmets or some types of barricade.

Another great advantage of the .30 Carbine round over the M1 Garand's .30-06 chambering, or the .45 ACP of the handguns and submachine guns, was its use of a non-corrosive primer. This was a great advantage in the Pacific, where the M1 Carbine was much less likely to rust if not cleaned immediately after use. For the M1 Carbine, it should be noted that use of ammunition with a non-corrosive primer was a necessity because of the location of the carbine's gas port and piston, as corrosion in these areas could rapidly render the weapon inoperable.

The lighter weight and shorter overall length of the M1 Carbine's .30 cartridge made it easier to carry more rounds into combat, though

Paratroops of 503rd Parachute Infantry Regiment after landing on Corregidor in February 1945. The paratrooper in the foreground clutches his M1 Carbine. (NARA)

many support troops who were issued the carbine did not generally carry a full combat load, often limiting themselves to the magazine in the carbine and two spares. Nevertheless, the light weight of the carbine was considered an advantage. Each .30 M1 Carbine round weighed 195 grains (there are 7,000 grains to the pound), which included case, primer, powder, and bullet. A full 15-round magazine weighed 0.59lb (of which the magazine itself accounted for 0.17lb), and 100 cartridges weighed 2.79lb.

In addition to the standard ball round, requests from units in the field resulted in the development of other types of M1 cartridges. The Chief of Field Artillery, for example, requested development of a device for launching antitank grenades from the carbine. As a result, to launch the M9A1 antitank grenade, the Cartridge, Grenade, Carbine, .30 M6, and, later, the Cartridge, Grenade, Auxiliary M7 were developed. Dummy cartridges were also developed for training use. Subsequently, tracer, blank, and armor-piercing cartridges were developed. Standardized as the "Cartridge, Tracer, Carbine, Caliber .30, M16" tracer ammunition entered service early in 1944.

At least one former World War II Marine told the author he tried to load tracer ammunition in magazines for his M1 Carbine whenever possible to spot his fire during Japanese mass attacks at night, but also because he felt these rounds did more damage as they burned through enemy flesh. Generally, tracer rounds are loaded every ten rounds or so for tracking fire at night so standard practice with a 15-round carbine magazine might have only required loading a couple of tracer rounds. In combat, though, troops will do what they feel makes their weapon more effective or more deadly; hence it is quite likely that some troops loaded tracer ammunition to do more damage to the enemy, especially in the Pacific where Pearl Harbor had ensured that little quarter was given to the Japanese.

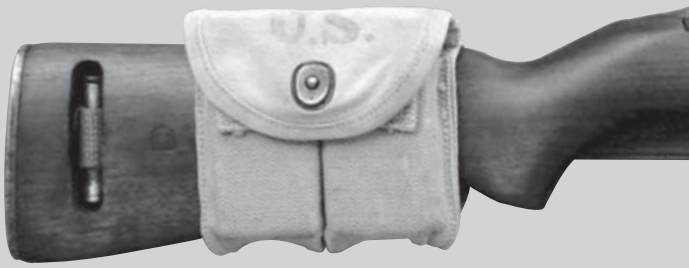
One of the greatest fans of the M1 Carbine during World War II was John George, at that time a young infantry officer who fought on Guadalcanal and then with Merrill's Marauders, the US long-range deep-penetration special operations unit, in Burma. Prior to the war, George had been a competitive rifle shooter and, therefore, was no stranger to rifles and carbines. In his book *Shots Fired in Anger*, originally published in 1947 while his experiences were fresh, he describes combat in the Pacific and the weapons used by the US Army and US Marine Corps as well as by the Imperial Japanese forces, from the perspective of a rifleman.

One thing that is interesting about George is that as a seasoned competition shooter with bolt-action rifles, he initially viewed the semi-automatic M1 Garand with a certain amount of scorn for its accuracy and the concern that it would encourage troops to waste ammunition. However, when he first shot the M1 Garand at Camp Perry in 1939 at 200yd, he achieved a score of 79 out of 80. He changed his opinion. Assigned to the Army's 132nd Infantry Regiment on Guadalcanal, George used a 'scoped M1903 Springfield rifle in .30-06 caliber for sniping at Japanese whenever he got the chance. As did many troops in the Pacific and later in Korea, George concluded that the best weapon to have at hand for sleeping in a foxhole was the M1911 pistol as it could be kept at hand,

Magazine pouches

One advantage of the fixed stock for many troops carrying the M1 Carbine was that they could attach a version of the standard magazine pouch holding two magazines to the stock, thus giving reload capability even if no pouches were carried on the belt. Made by a wide array of manufacturers, M1 Carbine magazine pouches were usually fabricated of canvas in olive drab or khaki. "U.S." was normally stamped on the flap, which used a snap for closure. Later in World War II and during the early postwar years pouches were also produced that were designed to hold two 30-round magazines plus some spare ten-round stripper clips. Airborne troops, who would generally go into combat without much hope of immediate resupply, tried to carry as much spare ammunition as possible. As a result, "rigger-made" pouches designed to hold four 15-round magazines lengthwise against each other were often produced prior to jumps. These were usually olive drab, and are very desirable for collectors to accompany an M1A1 Carbine.

ABOVE RIGHT His carbine at the ready, a member of 99th Infantry Division emerges from a dugout in Belgium during January 1945. He uses the stock-mounted double magazine pouch. (NARA)



RIGHT A close-up of the stock-mounted double magazine pouch, popular with many troops who carried an M1 Carbine. (Author photo)

handled quickly, and delivered a lot of punch. At one point when describing his time on Guadalcanal, George mentions that men on a patrol he led had M1 Garands, Thompson submachine guns, and BARs. He notes that they had heard of the M1 Carbine and that they were being manufactured by the millions, but none had seen one at that point.

When George did become familiar with the M1 Carbine, he was very impressed. His experiences as a competitive shooter and hunter as well his experience in combat on Guadalcanal with the other primary US infantry weapons lend great credibility to his opinion of the M1 Carbine. In *Shots Fired in Anger*, George states: "The carbine turned out to be an ace weapon of this war, as far as I am concerned. It was light and handy, powerful, and reasonably accurate. If I had to make my own [*sic*] in hostile jungle, traveling with the lightest possible kit where I should be likely to encounter enemy at any time, the carbine is the weapon I should choose."

George's combat experiences, especially with Merrill's Marauders, had convinced him that a lighter, handier weapon in the jungle was a real boon. His one objection to the carbine was its 15-round magazine, which he felt protruded too much from the receiver. In fact, George altered one to six-round capacity so it would not protrude past the triggerguard. He also found that the M1 Carbine had better penetration than the M1911 and would punch through Japanese helmets or "bulletproof" vests. In addition to its handiness, however, George found the greatest advantage of the M1 Carbine was the ease with which officers, crew-served weapons teams, or support troops could fire it. A marksman himself, he realized the difficulty of training most troops – who had little experience of pistols and feared the recoil – to fire the M1911 accurately at distances past point-blank range. Even with minimal training, these same troops could fire the M1 Carbine with acceptable accuracy to 100yd or more. It might be worth noting that George's combat experience was all in the Pacific against the smaller Japanese soldier. In Europe, US troops were fighting larger Germans. As a result, the stopping power differential between the M1 Carbine and the M1 Garand may have seemed more significant in the European theater.

When serving with Merrill's Marauders as a captain, George carried a carbine, but he had also found a very accurate M1 Garand, which he had a sergeant in the unit Intelligence section carry instead of an M1 Carbine. George would then trade the carbine with the sergeant for the Garand if he knew he was going on a combat patrol or manning a fixed forward position at night. In addition, George had his 'scoped M1903 Springfield rifle for sniping, which was generally carried on the unit's mules unless needed. George noted that many of the other Marauders officers shortened

Airborne assault (previous pages)

During Operation *Varsity* on March 24, 1945, members of 17th Airborne Division carry out a parachute assault across the Rhine River. Encountering German resistance as they land, paratroopers have drawn their M1A1 Carbines from their jump holsters, deployed the folding stocks, and begun firing.

On June 10, 1944, a platoon of African-American US Army troops surround a farm house to eliminate a German sniper holding up the advance near Vierville-sur-Mer, France. The NCO at the rear carries an M1 Carbine. (NARA)

their carbine magazine as well so that they would not protrude as much. Presumably this was to prevent them catching on vines or other growth in the jungle. They kept spare 15-round magazines in their magazine pouches should they need more sustained fire in combat. George normally carried four 15-round carbine magazines in pouches in addition to the short one in his weapon. It is interesting to note, since carbines were historically a cavalry weapon, that George found the M1 Carbine quite handy on those occasions with the Marauders when he rode a horse or mule.

George had no problems with the killing power of the M1 Carbine. As he describes the results of his carbine fire in an ambush along the Lido Road, he states, "Seven Japanese were lying there, spread compactly on the grass. Six of them including the Nambu light machinegunner were dead, a testimony to the effectiveness of the .30 caliber M-1 carbine."

Based on the reminiscences of US combat veterans, Mark Goodwin's *US Infantry Weapons in Combat* offers excellent insights into the opinions of the M1 Carbine held by the men who staked their lives on it. The following reminiscences reflect an array of views of the carbine.

Bill Trexler served with 9th Infantry Division during the advance into Germany; when possible, he chose his weapons to fit the combat conditions. He carried an M1 Garand when fighting through the hedgerows, but used an M1 Carbine in the forests, and a Thompson submachine gun for fighting in built-up areas.

Trexler found that when he needed a carbine while fighting in the Hurtgen Forest he could just look for a discarded one and pick it up. He considered the carbine accurate only to about 200yd but for close-in fighting, as in the forest, he felt it would do the job. As with many infantrymen, he appreciated the M1 Carbine's 15-round magazines and would carry up to a dozen of them, which he would pick up fully loaded from an ammo supply point.

A Japanese-American soldier fighting in Italy during 1944 emerges from his foxhole. He is probably serving with 442nd Infantry Regiment. (NARA)

Among those who appreciated the M1 Carbine were those who had been issued a .45-caliber pistol because they were part of a crew-served weapons team. Although the carbine had been designed for such personnel, it took a while for production of carbines to reach the level that all machine-gun or mortar crews received them. Sam Shaw, who served in a heavy-weapons platoon of 253rd Infantry Regiment, 63rd Infantry Division, was appreciative when he managed to acquire an M1 Carbine. His assistant gunner and he were issued .45 autos and their two ammunition carriers had M1s.

Shaw didn't really like the .45 as he felt it did not have enough range and had complained to his company commander, but he was ordered to carry it. Eventually, however, he found a carbine dropped along the trail and "appropriated" it. Shaw's commander allowed him to keep the carbine, and the assistant gunner and he would switch weapons, with the one not carrying the machine gun carrying the carbine. Shaw felt confident with the M1 Carbine and liked it better than the M1 Garand. He stated he could "thread a needle with it at 50 yards," and felt he could shoot accurately with it to 150yd, though since his carbine had the early flip-up sights, it was necessary to estimate windage when using it.

John Hooper also recalled his World War II service in *US Infantry Weapons in Combat*. Hooper served with 115th Infantry Regiment, 29th Infantry Division. As with many veterans, he appreciated the M1 Carbine without glossing over its faults:

During January 1945, infantrymen on their way to the front lines in the Ardennes are served food. The soldier at the front of the chow line is armed with his M1 Carbine. (NARA)

> The carbine was more a personal protection weapon; they could have very well armed us with pistols. It wasn't an assaulting type weapon. I was able to do pretty well with it out to 300 yards back at training … That's what made me so attracted to the carbine, the ability to hit something at 300 yards. I considered it to be a reliable weapon; I never had any malfunctions with it whatsoever. I cleaned it periodically, although I didn't clean it every day.

Thomas Shoen Jr, who served with 11th Airborne Division in the Pacific, also had some interesting comments about the M1A1 Carbine, recorded in Goodwin's book:

> In training, we mostly jumped with the folding stock paratrooper carbine. You could either just sling it around your neck and go or you could put it under your reserve chute, sandwiched in next to your body. But when the chute opened, the gun would come up and the pistol grip hit you under the chin. It hurt pretty good! I recently heard they had a canvas "holster" for the folding stock carbine. They may have had those in Europe, I don't know, but I never saw one in the Philippines. I also saw a carbine a few years ago that had an adjustable rear sight and a bayonet lug. We never had those either.

The parachutist's holster

The "Holster Assembly, Parachutists, for the M1A1 Carbine" resembled an oversized pistol holster and was designed to take the M1A1 with stock folded and a 15-round magazine in place. With the flap closed, overall length was 27.5in. On the back of the holster was a 6in belt loop and at the bottom a 24in leg strap. Construction was of padded canvas with a flap closed by two snaps. Various contractors produced the carbine holster in either green or tan. Another jump case that was used was the "Holster Assembly, Parachutists Rifle Carbine or Submachine Gun." This case was reportedly of post-World War II design. Rectangular in shape and 9in by 34.5in, it is of satchel type and more heavily padded than the holster-type jump case. This case would take an M1A1 with stock folded or an M1 Carbine or M1 Garand broken down. It would also work for an M3 or other submachine gun. This case was produced by various manufacturers in olive drab, dark green, light ("yellowish") green, and tan. These cases are sometimes encountered with a 6in extension to allow the M1 or M2 Carbine with fixed stock to be carried without breaking it down. It is generally assumed that these extensions were added by the riggers in airborne units.

ABOVE The M1A1 Carbine along with the parachutist's jump holster. (Author photo)

RIGHT Paratroopers of 101st Airborne Division prepare to jump during Operation *Market Garden*; note the paratroop captain at the right has his jump holster slung around to the rear. (NARA)

Henry Turner, who also recalls his combat experiences in Goodwin's book, served with 29th Infantry Division in World War II. He started carrying an M1 Carbine along with an M1911 .45-caliber pistol when assigned as his company commander's bodyguard. As did many other veterans, Turner found the carbine useful in the hedgerows of Normandy. Since shots were rarely exchanged at ranges of 300yd or more, he appreciated the handiness of the carbine in the close combat conditions of the hedgerows. Turner only carried the magazine in the rifle plus two spare magazines on his belt. He felt that was enough and, fortunately, he wasn't proven wrong by running out in a firefight.

A paratrooper pictured with his M1A1 Carbine, stock folded, tucked behind his reserve parachute. (NARA)

During World War II, Gerald Gwaltney served in 25th Marine Regiment as part of a light-machine-gun section. He carried an M1 Carbine much of the time he was in combat and was quite satisfied with it. He felt that at 200yd it performed very well, but at 300yd, the maximum distance at which he usually fired it, accuracy was acceptable though not perfect. He emphasized, however, that he never had a malfunction with his carbine.

Even though Gwaltney was issued an M1 Garand on Saipan, when going into combat, he would trade with another gunner in his section who had an M1 Carbine but preferred the Garand. He carried the same carbine on Iwo Jima when he got wounded. He noted that he normally carried three or four clips for the carbine and though he felt it did not hit as hard as the .30-06 round of the M1 Garand, it always did the job for him.

Of course, not everyone liked the M1 Carbine. Rudy Haynes, who fought with the recon troop of 83rd Infantry Division through France, Belgium, Luxembourg, and Germany, had some quite negative comments about his experiences with the weapon. While sleeping in foxholes in France, Haynes found that dirt in the breech would cause the carbine to malfunction. At a range of 300yd, he felt very confident with the M1 Garand but not with the carbine. He stated that "I never met anyone who liked the carbine … A lot of guys got rid of their carbines as soon as they could get their hands on an M1."

Of course, this is an example of the most common criticism: the carbine didn't hit as hard or shoot as accurately at longer range as the M1 Garand. There were many soldiers and Marines, however, who understood that the carbine was meant to replace the pistol rather than the battle rifle. Tom Bartelson, who landed with 7th Marine Regiment on Guadalcanal and later saw action on New Britain and Peleliu, was one who appreciated the advantages of the carbine over the M1911 pistol:

> Something that people forget, the sole reason for the carbine was to replace the pistol. A lot of guys would say the carbine was no good. They said it was too small and it would jam on you if you didn't clean it every day. They would also say "A Jap was coming at me with his bayonet and I shot him three times in the belly with the carbine and he kept on coming." If you shoot someone in the belly with a .22 long rifle, he ain't going to be coming at you; he's going to be holding his belly. I thought the carbine was a good weapon, I never had any problems with mine. I killed Japs with the damned thing!

In most of the narratives just cited, the carbine was criticized by those who wanted the power, accuracy, and range of the M1 Garand. Those who had previously been armed with a pistol considered the M1 Carbine a definite improvement. However, it should be noted, too, that a lot of combat-hardened front-line infantrymen appreciated the carbine's quick handling capabilities in jungle or forest. In the Pacific, where M1 Garands were known to rust so quickly that they could be rendered inoperable in 24 hours if the corrosive residue was not cleaned from their actions, the M1 Carbine's ease of maintenance due to its non-corrosive ammunition was greatly appreciated. At least some troops in the Pacific, especially where they faced constant night attacks from the Japanese, appreciated the 15-round magazine capacity and easily changed magazines. The distinctive sound made by the M1 Garand clip as it was ejected from the rifle was also considered a disadvantage by some when compared to the carbine. Just as there were troops who were anxious to trade their carbine for an M1 Garand, there were troops anxious to trade their Garand for a carbine.

In *Surrounded by Heroes*, his memoir of service with the Headquarters Company of 82nd Airborne Division throughout World War II, Len Lebenson offers an evaluation of the M1 Carbine. As a member of an administrative unit, Lebenson was issued an M1 Carbine, but when he was thrown into the Battle of the Bulge he wanted something different:

> We had all been issued carbines as our basic weapon, which fired the standard .30-caliber bullet but with much less muzzle velocity and accuracy than the M-1 rifle. So at first opportunity I had commandeered an M-1, as did most infantrymen in our rifle companies. The parachute riflemen had been issued folding stock versions of the carbine, which folded into a weapon not much longer than an automatic pistol. Great for lack of bulk in a parachute jump but less than that as an infantry weapon.

One of the most perceptive commentaries on World War II weapons, Allied and Axis, was by Roy F. Dunlap in his book *Ordnance Went Up Front*. Dunlap was a skilled gunsmith and shooter before the war who ended up in an ordnance unit. Based on his observations of the weapons, Dunlap evaluated almost every weapon used during World War II. Since it is rare to find commentary on the M2 Carbine during World War II, his evaluation is particularly interesting:

THE M1A1 CARBINE
Designed with a folding stock for use by airborne troops; with the stock folded to the left, the carbine may still be fired without deploying the stock. Note that the oiler fits into a catch on the stock. This M1A1 is a later model, with bayonet lug, adjustable sights, and safety switch. (Author photos)

> The full-automatic M1 carbines began to appear in very limited numbers. We heard that there was a large capacity magazine made for them, but never saw any. One of the armorers had a friend in a base unit in Manila who got him one (how we learned about things!). A few weeks later I was checking a pile of turned-in carbines and found a slightly disabled one. The full-auto parts were OK so I switched them to my regular carbine and was really ready to spray bullets around the Japan coast. Only it jumped and recoiled so as to ruin accurate fire and I built a compensating muzzle brake for it. Just a cone of soft sheet steel, cut from the top of a gas drum and welded together and to a carbine front sight; it was perhaps 1 ½" in diameter at the front end – as big as I could make it and not come into the line of sights. The front plate had about a 7/16" hole for bullet escape and six or eight smaller holes drilled in the top half of the cone. It worked fine and I could get off a burst of eight or 10 shots and keep them in a six-inch group at about 25 yards. By welding magazines together I made 30-round magazines. The M-1 carbine in full-automatic fire has a high cyclic rate – my guess was 900 RPM. It was much faster than the late Thompsons. I think these guns would have been much better than the standard type, in combat, but we never did get a chance to kill anybody with them for a test.

It is interesting to note how often the M1 Carbine was used by sergeants and second lieutenants who won the Congressional Medal of Honor. In numerous citations, use of the carbine is mentioned. America's most decorated World War II soldier, Second Lieutenant Audie Murphy, whose wartime experiences were documented in the book and movie *To Hell and Back*, won his Medal of Honor on January 26, 1945, while serving with 3rd Infantry Division. After firing his carbine dry at the advancing German infantry, Murphy climbed aboard a disabled and burning American tank destroyer and engaged the enemy with its machine guns, then with the Germans virtually on top of him called in artillery fire.

Another second lieutenant, Raymond Zussman of 756th Tank Battalion, won his Medal of Honor on September 12, 1944, using his M1 Carbine. During an attack on Germans occupying the town of Noroy-le-Bourg,

During the D-Day landings in Normandy, US troops come ashore from a landing barge. Note the soldier in the left foreground carrying his M1 Carbine. (NARA)

France, armed only with his carbine, Zussman reconnoitered ahead of his tanks and designated targets. At one point, members of Zussman's unit heard his carbine fire, then saw him return with 30 German prisoners. In total, during the engagement, Zussman's unit killed 18 of the enemy and captured 92.

Many other instances could be related of the use of the carbine by Medal of Honor winners. The fact that infantry lieutenants were trained to lead from the front and that their standard weapon was the M1 Carbine no doubt accounts for its frequent use during acts of heroism. Likewise, many sergeants carried the carbine and performed heroic acts to save or inspire their men. However, since most Medal of Honor-winning engagements take place at close range, the handiness and quick reload capability of the carbine certainly allowed those charging the enemy to deliver more sustained fire during the engagement.

Most instances of use of the M2 and M3 Carbines occurred in Korea, but there were a few instances in which they saw combat during World War II. In *War Baby*, Larry Ruth cites an Army press release of March 24, 1945, that relates the use of an M2 Carbine by a platoon sergeant in Brest, France, to fire 1,200 rounds in two hours, pinning down a German machine-gunner so that US troops could advance down a street. Reportedly, fewer than 500 M3 Sniperscope-equipped carbines were used during the invasion of Okinawa, yet these inflicted 30 percent of Japanese casualties during the first week of the campaign.

KOREA

During the immediate postwar years, the M1 and M2 Carbines next saw combat with US troops in Korea. A large proportion of the carbines issued for Korea were the M2 model, which US soldiers and Marines seemed to feel performed quite well in comparison with the Chinese-supplied PPSh-41 "Burp Gun."

Mark Goodwin's *U.S. Infantry Weapons in Combat* offers good insights into how GIs fighting in Korea viewed the weapon. Jack Walentine served in Korea with 25th Infantry Division and had a chance to use virtually every US infantry weapon. He had distinct opinions on all of them, including the M2 Carbine. Walentine notes that he never saw an M1 Carbine in Korea, only M2 Carbines. He especially liked the carbine for night patrols when he would carry 300 rounds of ammunition. Ranges were generally under 50ft and often much closer so the carbine's fast handling, high rate of fire, and large magazine capacity were all advantages. Walentine notes, too, that criticisms of the carbine round not penetrating Chinese winter clothing were false, based on his experience. He shot numerous Chinese in their padded winter clothing and found that the bullets penetrated all the way through the bodies and clothing.

At a range of 100–150yd, Walentine found the M2 accurate and still with enough killing power to finish an enemy. He specifically notes that it was much better than the Russian PPSh-41. As a result of his combat

A soldier leaves his fox hole for action against the enemy in Korea on May 17, 1951. He appears to have taped two 15-round magazines together to allow for a faster magazine change. (NARA)

experience, Walentine actually preferred the 15-round magazines to the 30-round magazines, as he could get much lower with the shorter magazine when he hit the dirt.

Walentine's point about the length of the 30-round magazines is quite significant, as the ability to fire from the prone position without exposing himself is very important for an infantryman. Non-professionals often choose the highest-capacity magazine they can without considering its disadvantages. A good example in point was Osama Bin Laden's use of the long 45-round magazine from the RPK-74 light machine gun in his AKS-74U carbine. It looked formidable but was not practical in combat.

John Taylor, who served as a machine-gunner with 40th Infantry Division in Korea, noted why infantrymen often preferred the M2 Carbine to the M1 Garand for night patrols. His views on the carbine are also featured in Goodwin's book: "We often had to lend our carbines to the infantry because when they went on patrol, they didn't want to go with their M1s [Garands] … They didn't have enough carbines of their own and needed ours. These were M2 carbines and I had three of those 30-round magazines taped together … They would come by almost every night and borrow the weapon and ammo."

There is anecdotal evidence that the M3 Carbine was used in Korea at night in outposts to identify Chinese troops moving up for mass attacks on Allied positions. Reportedly, the M3 operator would fire tracer rounds at the approaching enemy to identify his position so emplaced machine guns could decimate the attackers.

MARSHALL'S EVALUATION

Because there were a substantial number of criticisms of the carbine during the Korean War, noted military historian and analyst S. L. A. Marshall carried out a combat evaluation of its performance during the Korean conflict. Many of the criticisms seem to be directed primarily at problems with full-automatic reliability of the M2 Carbine, especially in the extreme cold weather during the Korean winter. Many troops seemed to consider the semi-automatic M1 Carbine preferable to the M2, which was what

they were normally issued. There were also criticisms that the ammunition would begin to corrode after being in a magazine for a few weeks in combat. If the cartridges were not removed and cleaned, they would leave deposits in the chamber of the carbine that would render it inoperable. Since taking the time to clean off each round in combat was difficult, this was considered a major problem.

A major criticism cited by Marshall was the carbine's lack of range, which allowed the enemy to get close enough to Allied lines to throw grenades. Marshall found the same problem that has plagued all armies issuing select-fire rifles: troops tend to fire the weapon on full-automatic and use up their ammunition quickly. As a result, since the M2 was the carbine most widely used in Korea, troops with carbines would often run low on ammunition before facing the enemy's mass attack, during which the full-automatic M2 would have been very effective. Troops who fired on semi-automatic at longer ranges seemed to be less critical of the carbine. Marshall did note that troops armed with the M2 Carbine tended to learn to use semi-automatic fire at longer ranges and unless facing mass attacks, and got better at conserving ammunition after one or two combat engagements. However, troops also commented that in close combat under stress they had a tendency just to squeeze the trigger and empty a magazine. The author can state from experience that it takes a great deal of training to learn the fire discipline and trigger control to fire an automatic weapon in short bursts under stress.

Marshall felt that the M2 Carbine in the hands of support and administrative troops, who were more likely to be ambushed than to be in sustained combat, proved advantageous since it could lay down a lot of fire quickly. Infantry officers told Marshall that when support troops were needed in the front lines to prevent a breakthrough, the carbine with which they were armed was less a problem than the fact that most had not been trained in small-unit tactics.

Marshall notes the preference for many men to carry the M2 Carbine when on patrols, especially at night. Sluggishness in cold weather was often commented on by troops with whom Marshall spoke. He also reports seven incidents in which troops claimed to have shot an enemy at 25yd or less without the carbine round stopping the enemy. Although such reports would be very troubling to those involved, given the number of firefights at close range in Korea, that figure does not seem unduly high. An interesting point Marshall notes is that almost all killing of the enemy with carbines he noted in Korea was at ranges of 50yd or less. The longer-range accuracy of the carbine was criticized, especially by members of Marine units using the carbine.

"Snooper Scope" (previous pages)
During the Korean War a US Marine armed with an M3 Carbine spots approaching Chinese troops attempting to infiltrate US lines with his "Snooper Scope." He fires tracer ammunition to point their position to the crew of the co-located M1919 machine gun, which takes them under fire.

Although enumerating the criticisms of the carbine, Marshall does note at least one instance in which the full-automatic capability of the M2 allowed one machine-gunner to engage the attacking Chinese – who had overrun his machine gun and wounded most of the crew – at close range with his M2, and kill or dissuade them from pushing home the attack while his comrades made it to safety.

Unfortunately, Marshall's report does not include any examples of the M3 in use against the North Koreans or Communist Chinese. It should also be noted that many of the criticisms of the M2's functioning problems in cold weather can probably be attributed to the lack of proper cold-weather lubricants, as many reports indicated that once the carbine could be fired for a few rounds on single-shot or semi-automatic fire it would heat up and function properly.

Marines of 1st Marine Regiment take a break during a lull in the fighting on Bunker Hill Chang-Dan, Korea, on August 26, 1952. The Marine in the middle has a grenade launcher affixed to his M2 Carbine, while the Marine at the right has his bayonet affixed. (NARA)

AFTER KOREA

In the years after the Korean War, the M2 Carbine and, to a lesser extent, the M1 Carbine remained in use with US armed forces. USAF Air Police who provided security at US air bases used the carbine until the adoption of the Armalite AR-15 rifle in 1962. Although original USAF rifles were marked AR-15, later the Air Force would have the same variants of the M16 as the other branches of the US armed forces. Some M1 Carbines remained in Air Force usage until enough AR-15s and M16s were available for full issuance.

The author recently heard an interesting story about the use of the M2 Carbine in 1959 during the early US involvement in Indochina. A friend who is a machine-gun collector owns a French MAT-49 submachine gun that was captured and brought home and registered by an operative of the CIA. While moving along a trail, the Agency operative suddenly encountered a member of the Viet Cong who pointed his MAT-49 at him and pulled the trigger. As the MAT-49 operates from an open bolt, a very distinct "clank" was heard as the bolt came forward without firing. Reacting quickly, the Agency man brought his M2 Carbine into action and shot the VC, taking his MAT-49 as a trophy. This incident offers a good example of the carbine's quick handling characteristics in close quarters.

In 1957 the M14 rifle, basically an upgraded Garand, officially replaced the M1 Garand in the US Army and Marine Corps, though it did not really enter service until 1959; as of 1961 the only Army unit fully equipped with the M14 was 101st Airborne Division, and it was late 1962 before the Fleet Marine Force was fully equipped with the M14. Theoretically developed to replace the M1 Garand, M1 Carbine, M3 submachine gun,

During the Cuban Missile Crisis, 1962, US Air Force troops are pictured armed with carbines and carrying steel helmets, as they march away from the commercial carrier which flew them to Key West as part of the military buildup in the southwest United States. (© Bettmann/Corbis)

and M1918 BAR, the M14 was really too large for easy use by many troops heretofore armed with the M2 Carbine or M3 "Grease Gun." It offered the select-fire option, however, and had a 20-round detachable box magazine. It was chambered for the 7.62×51mm NATO round, which was less powerful than the .30-06 chambering of the M1 Garand but more powerful than the .30 M1 Carbine round. In actuality, the M14 was found to be somewhat light and the 7.62mm NATO cartridge too powerful for controlled automatic fire; hence, most M14s were locked in semi-automatic mode.

By 1966–67 the M14 was replaced for use in Vietnam by the M16, though troops assigned to Europe used it until 1970. During this period at least some carbines remained in use with support troops and some Special Forces troops. On many US Navy ships M1 Carbines, M2 Carbines, and M1 Garands remained in the armories until at least the 1970s.

VIETNAM

Initially, the US had supplied M1 Garands to troops of the Army of the Republic of Vietnam (ARVN), but the troops' small stature made the M1 Carbine a much more popular weapon with the Vietnamese soldiers, and many ARVN units were armed with it. As a result, US advisers to these units were often armed with M1-type carbines to ease logistics of ammunition supply. Some advisers, especially to the ARVN Rangers, used either fixed-stock M2 Carbines or M2 Carbines in M1A1 stocks with the barrel cut back to just in front of the handguard for handiness in jungle fighting. At least some US Special Forces advisers actually preferred the carbine to the M16 and continued using it even after the M16 became available. US helicopter crews often carried M2 Carbines in the earlier stages of the Vietnam War as well.

ARVN ambush (opposite)

ARVN Rangers set an ambush for the Viet Cong along a jungle trail. Claymore mines are being placed to sweep the trail toward the viewer. They are then camouflaged. Det cord is set in the gulley at the right, along with another Claymore so that any VC that survive the initial gunfire and Claymore and attempt to take cover in the gulley can be destroyed. The ARVN Rangers (wearing their distinctive helmets) and their US Ranger adviser in the red beret will set the parallel ambush along the trail at the left. All are armed with M2 Carbines. The ARVN Rangers in the foreground provide rear security while the Claymores and det cord are set.

For US advisers, the carbine was handy and was generally the same weapon as that carried by the troops they advised. As a result, ammunition was readily available. There was also the bonding aspect of using the same weapon as their troops. For helicopter crews trying to supplement their issue handgun, the carbine was compact enough to fit in the cockpit readily and also could usually be acquired from Special Forces or Vietnamese troops whom they flew.

US LAW-ENFORCEMENT USE

For decades, the M1 Carbine was one of the most popular rifles for US law-enforcement agencies. During the 1990s and the early 2000s many agencies either acquired surplus US military M16 rifles or purchased semi-automatic AR-15s or M4 Carbines. Nevertheless, the M1 Carbine still remains in some police armories or serves as a "patrol rifle" with some officers. Among the better-known users of the M1 Carbine was the NYPD Stakeout Squad, which targeted armed robbers by putting men inside businesses their intelligence told them faced a high probability of being robbed. Jim Cirillo, a well-known firearms expert and trainer formerly with the Stakeout Squad, felt that the M1 Carbines they used proved even more deadly on criminals than a 12-gauge shotgun loaded with buckshot. Reportedly, Cirillo's colleagues used special handloads in their carbines. Cirillo survived a lot of gunfights so his opinion is to be valued. *Jim Cirillo's Tales of the Stakeout Squad* offers some interesting insights on the use of the M1 Carbine:

> The M1 Carbine was one of our favorite weapons. They were great for stakeouts because we were in tight quarters, behind walls and such. We had full-length ones and some that were cut down. When we confiscated an M1 Carbine on a case, it went to the range and our gunsmith would cut down the barrel to just about 12 inches and put on a folding stock and a pistol grip.
>
> You know what? The carbine was one of our best stoppers. Our gunsmith was real good; he was able to fix those magazines so they reliably fed pointy hollowpoint 110-grain Winchester ammo, an expanding bullet. You figure you're shooting a hollowpoint bullet that's going between 1,800 and 1,900 feet per second (fps). That bullet gave us good hydrostatic shock. When that bullet opened up and folded back, it was superior to our handgun for sure. It was fast to shoot, light recoil, and you had 15 rounds. It turned out that anybody who was hit with it, even if they weren't hit in the vitals, got dropped. We had one guy was hit in the thigh, and he ran outside, his leg broke, and he fell. Evidently the tissue was so torn up, or the bone might have been fragmented, or touched; his leg broke, he had a compound fracture, he went down on the ground.

Another agency that used the M1 Carbine extensively was the Detroit Police Department. Only within the last few years have these carbines been replaced and sold off as surplus.

During the 1970s, the author had friends who were railroad detectives in the East St Louis Railroad Yards, generally considered one of the toughest law-enforcement jobs in the USA. Their weapon choices were normally .357 Magnum revolvers (backed up by snub .38s), Remington 870 12-gauge "riot guns," and M1 Carbines. These "yard bulls" got in a lot of shootouts and considered their M1 Carbines ideal for the dangers they faced. When available, they loaded tracer rounds for use in the darkened yards. In one well-known use of the M1 Carbine in the East St Louis Yards, a "Cinder Dick" (railroad police detective) found a very large thief attempting to break into a railroad car using an ax. When the railroad cop challenged him and ordered him to raise his hands, he came for the officer with ax raised. Whereupon the officer raised his carbine, which was loaded with tracer rounds, and shot him in the shoulder. The thief's chest muscles were so thick that the tracer bullet did not exit and, since it was designed to last for hundreds of yards, burned inside the criminal's body for a second or more. As the downed thief writhed in agony, reportedly the hardened railroad detectives watched in interest and asked the shooter where he had gotten his tracer ammo.

At least some law-enforcement agencies retained the M1 Carbine even after M16s, AR-15s, or M4s became available as they did not want a "black rifle" that they felt sent a message that the police were becoming too militarized. Even though the M1 Carbine had been developed as a military weapon, the fact that it was older and did not resemble current military rifles gave it a better "image." Besides, the M1 Carbine had been developed for a "good war."

FOREIGN USE

During World War II and later, the M1 Carbine proved very popular with US allies. America's closest ally, the United Kingdom, received 25,363 Lend-Lease carbines including 22,506 M1s, 2,104 M1A1s, and 753 M2s. These carbines carry the British broad arrow property mark. Many members of the Special Air Service used the M1 Carbine after 1943, especially when working with Resistance personnel who were armed with the carbine. Members of the Special Operations Executive and units such as 30 Assault Unit also used the carbine. Canada also received a small number of carbines, reportedly 230, for training purposes; these were likely marked with the "C" and broad arrow.

Among the largest Allied recipients of the M1 Carbine were the French, who received around 100,000. As many as half of these were dropped to the French Resistance, while the remainder were issued to Free French forces. After World War II, most of these carbines were absorbed by the French Army and were used extensively by French paratroopers, commandos, and Legionnaires in Indochina and Algeria.

During the Korean War, 1951, Private Kiriakos Zounis cleans his M1 Carbine at the Greek Battalion area. Greece was among the European nations whose forces were supplied with carbines. (IWM MH 32797)

In 1954, while French, Vietnamese, and Viet Minh delegates meet for truce talks, this French military policeman (left) and his Viet Minh opposite number compare their weapons, both M1-type carbines. The Frenchman's piece was supplied by the US aid program, while the Communist rebel holds one captured from a seized French Union post. (© Bettmann/Corbis)

French paratroopers particularly liked the M1A1. In Philippe de Pirey's book *Operation Waste* about his time with the Colonial Paratroops in Indochina, he offers a description of the iconic image of a paratrooper with his M1 Carbine, and the fact that his actual service did not live up to the image: "All this was something of a disappointment (the offices at the recruiting centre had been adorned with posters showing a splendid fellow in a purplish red beret and camouflage jacket, energetically clutching a U.S. carbine), and I sat down for a little sober reflection. Not for long."

At least some M1 Carbines later ended up with French police units, who targeted organized crime as well. It is important to note – in case any is encountered – that most and possibly all batches of French M1 Carbine ammunition used corrosive primers. Since those using M1 Carbines are generally used to all ammunition being non-corrosive and hence do not clean them as thoroughly as corrosive ammunition requires, this French ammunition can wreak havoc.

One of the more interesting World War II units that used the M1 Carbine was SAARF (Special Allied Airborne Reconnaissance Force). Composed of three-man teams formed from American, British, French, Belgian, and Polish personnel, SAARF teams parachuted in ahead of advancing Allied troops to attempt to convince German POW-camp personnel to surrender the camp to them, so that prisoners could be protected. SAARF's mission was not to fight but to negotiate surrender, so team members were lightly armed with a Colt M1911 pistol and an M1 Carbine and limited spare magazines.

Among other recipients of M1 Carbines were the Nationalist Chinese. Reportedly, at least a few carbines captured from the Nationalists were encountered in the hands of Communist Chinese troops in Korea. Thousands more carbines were supplied to arm German police during the postwar occupation. Another recipient of thousands of M1 Carbines was South Korea, apparently for use by police and reserve troops rather than front-line infantry units.

At least another 20 countries have used the M1 or M2 Carbine for their military or police. Among these are the Austrian police and armed forces, Brazil's BOPE special police unit, Ethiopian armed forces, the Greek Air Force, Israeli Defense Forces, Italian police, Japanese National Police Reserve, Liberian armed forces, Mexican police, Dutch Army and police, Norwegian Army, Philippine Army and police, Turkish troops while serving in the Korean War, Thai armed forces and police, and British armed forces (especially in Malaya), as well as the Royal Ulster Constabulary.

Carbines captured by the Viet Minh during the Indochina War sometimes turned up in the hands of members of the Viet Cong, who used them against US forces. Carbines captured from South Vietnamese forces were used by the Viet Cong as well. At least some damaged M1 Carbines were repaired and turned into "jungle workshop" weapons. Often, the barrel, stock, or both were shortened to make the carbines more concealable. In some cases, where the stock had been damaged, the carbine was converted to just a pistol grip. It is estimated that today there are as many as 1.5 million captured carbines in Vietnam.

His US-made carbine is almost as big as he is, but this boy soldier of the Royal Laotian Army nevertheless stands resolute guard in Sam Neua Province on Laos' northwest border with Communist North Vietnam. (© Bettmann/Corbis)

IMPACT

A short rifle with a long-term influence

In evaluating the impact of the M1 Carbine, it is necessary to look at what might be termed direct mechanical impact and also philosophical impact. A third aspect might be labeled, "imitation is the highest form of flattery."

THE GAS-PISTON SYSTEM

The M1 Carbine's gas-piston operating system would have an impact on arms design for the next 70 years, and still continues to do so. Among the advantages of the gas-piston system are less fouling and, hence, less need for cleaning and enhanced reliability. Without going into much technical detail, the M1 Carbine uses what is known as a "short-stroke" gas-piston system, while many later designs use a "long-stroke" gas-piston system. Both have the advantage of running cleaner and longer without need for maintenance.

Among the best-known designs that use some type of gas-piston system are the AK-47 and the SIG 550 series of rifles. Many firms are also now producing versions of the M16 or M4 that use a gas piston. Among these are Bushmaster, Sabre Defence, and Heckler & Koch with the HK416. Other firms offer a conversion unit to switch an M16 or M4 to a gas-piston system.

ASSAULT RIFLE OR PERSONAL DEFENSE WEAPON?

In what might be termed a philosophical impact or influence, the M1 and, especially, the M2 Carbine may arguably be termed the first "assault rifles" or the first PDWs (Personal Defense Weapons). Admittedly, the German StG 44 is often cited as the first assault rifle and one of the inspirations for

the AK-47. In fact, its designation – *Sturmgewehr* – translates as "Assault Rifle." Nevertheless, the M1 Carbine preceded the StG 44 into production and incorporated an intermediate-power cartridge and a higher-capacity detachable box magazine. In the M1A1 version a pistol grip and folding stock were added. The M2 Carbine added select-fire capability and a higher-capacity detachable box magazine. On the other hand, the StG 44's 7.92×33mm Kurz cartridge was substantially more powerful than the .30 Carbine round and is generally considered a forerunner to the AK-47's 7.62×39mm round. It should be remembered, though, that the StG 44 weighed 11.5lb, about twice the weight of the M1 Carbine. There were other similarities between the US carbine and the StG 44. For example, as with the US M3 Carbine, the Zielgerat 1229 "Vampire" infrared device allowed the StG 44 to be used effectively at night.

Unlike the M1 Carbine, which was not initially developed as a weapon for front-line infantrymen, the StG 44 was intended to give infantrymen, especially in elite units such as the Fallschirmjaeger and Waffen-SS, a weapon which would give superior firepower against Soviet troops on the Eastern Front. Therefore, though some argument can be made for the M1 Carbine as an "assault rifle" its mission was actually closer to today's PDWs, which are designed for officers and support troops, much as was the M1 Carbine.

Perhaps the best-known contemporary PDW is the FN P90. Notable for its futuristic profile, the P90 is chambered for the 5.7×28mm cartridge, which in military AP (armor-piercing) configuration can punch through many layers of Kevlar body armor or penetrate ballistic helmets. Just as it was assumed that the M1 Carbine might have to be used by support troops against enemy paratroopers or other raiders, the assumption is that the P90 would serve as the defensive weapon for administrative troops, armored crews, helicopter crews, etc. Its highly penetrative round is intended to tumble within an enemy's body, providing stopping power far

A US Army lieutenant with an M1 Carbine on the range. Although unlike many armies the US Army has traditionally favored pistol use beyond the officer class, with the M1 it also pioneered an attempt to replace the military handgun with a new form of personal weapon. (NARA)

out of proportion to its 31-grain projectile. Additionally, this cartridge is lighter than the 9mm Parabellum round, allowing more rounds to be readily carried, and has a flatter trajectory than typical pistol cartridges, allowing engagement to 100yd or more. Incorporation of an optical sight allows the P90 to be fired more effectively at longer range, too. Still another advantage is that the design of the P90's magazine, which lies flat atop the receiver, allows a capacity of 50 rounds. For close range usage on full automatic, the P90's design is quite ergonomic and the 5.7×28mm round has reduced recoil, allowing quick, accurate engagement of close-range targets. The P90 doesn't look at all like the M1 Carbine, but it was developed for the same mission.

FOREIGN VARIANTS

Although the USA provided a large number of M1 Carbines as military assistance, there were still countries that either wanted to produce their own version or that chose to produce a weapon in .30 Carbine caliber. Fabrique Nationale, which had done extensive maintenance and upgrade work on M1 Carbines after World War II, for example, made at least one prototype of a carbine that used stamped parts and bore some resemblance to the company's later FAL, but chambered in .30 Carbine caliber.

Another design that resembled the M1 Carbine in many respects and was chambered for the .30 Carbine cartridge was the Canadian Clarke Light Machine Carbine. The Clarke relied on what was termed a "Primer Projection" system, in which the primer cup sets back when fired and pushes a tappet back from the bolt face to strike an actuator. There were other elements unique to the Clarke, such as a spring steel triggerguard, which had a dual function as a magazine catch. Apparently, when tested by representatives of the UK and Canadian Small Arms Inspection Board, the Clarke proved reliable and showed less recoil than the M1 Carbine. Its stock was of M1 Carbine type and it used standard M1 Carbine magazines. However, at the time the Clarke design was tested in December 1945, it appears there was little real interest in adopting another carbine given the millions of them that were already available.

What is best described as a direct copy of the M1 Carbine seems to have been produced by the Communist Chinese shortly after taking over from the Nationalists. Nationalist Chinese troops had been given some M1 Carbines as well as tooling and parts to produce M1 Carbines during World War II and the Chinese Civil War. As a result, the Communist Chinese appear to have had both captured carbines and those produced in former Japanese or Nationalist arms factories using tooling supplied by the USA. This probably explains some of the carbines reportedly encountered in Chinese hands during the Korean War.

Another design worthy of note is the Cristobal Automatic Carbine produced in the Dominican Republic. Much more akin to submachine guns such as the Beretta Model 38 and the Hungarian 39M, the Cristobal is chambered for the .30 Carbine cartridge. More than 200,000 examples

A South Korean Women's Army Corps recruit takes careful aim as she lines up her carbine on the target on the rifle range, 1956. M1 Carbines were reportedly found on both sides of the Korean conflict, as both US-made weapons and Chinese copies. (© Bettmann/Corbis)

of the Cristobal Model 2 and Model 62 carbine were produced in the Dominican Republic between 1950 and 1966 and it remained in service until the late 1980s or early 1990s.

The French had received a large number of M1 Carbines during World War II that they continued to use in campaigns in Indochina and Algeria. However, as part of their domestic arms program, the French also experimented with various designs chambered for the M1 Carbine cartridge. At the close of World War II French troops had captured the Mauser plant at Oberndorf, including prototypes and drawings for a roller-locking weapon in development. In the early postwar years, French firearms experts worked with Mauser engineers to develop a French carbine using this system. One of the calibers for which prototype weapons were chambered was the .30 Carbine round. Another 1949 design, the MAC (Manufacture Nationale d'Armes de Chatellerault) Automatic Carbine, was actually quite similar to the US M1 Carbine and used some of the same parts: however, the design used a delayed-blowback operating system. Fabricated of sheet metal stampings, the MAC Model 49 used standard 15-round carbine magazines. Other French carbine designs which chambered the .30 Carbine round included the MAS (Manufacture Nationale d'Armes de Saint-Etienne) M1948 Automatic Carbine and the MAT (Manufacture Nationale d'Armes de Tulle) M1950 Automatic Carbine. Despite development on these various carbines, the French eventually decided that they had enough US M1 Carbines for their needs and concentrated their resources on producing the MAT-49 submachine gun and the MAS-49 rifle.

At least some M1 Carbines were produced by the German firm ERMA in the early 1950s. The new West German Army had been issued US M1 Carbines, and ERMA initially had the contract to produce replacement parts and to overhaul these carbines. It is estimated that thousands of ERMA-produced M1 Carbines, which resembled late-war US production carbines, were manufactured prior to the adoption of the FN FAL by West

US troops fire their M1 Carbines on a firing range in Germany in February 1956. (NARA)

German forces in 1957. The M1 Carbine was also used by the rearmed Japanese Self-Defense Forces, with Howa Machinery, Ltd producing at least 5,000 for the Self-Defense Forces and another 10,000 or so for commercial sales. These commercial examples are discussed below.

One other weapon chambered for the .30 Carbine round which should be mentioned is the Italian Beretta M57 Carbine, which combined features of the Cristobal carbine and the US M1 Carbine. Morocco adopted the M57 and produced it on license. Only a quick overview of the various carbines influenced by the M1 Carbine and its cartridge has been given here. Those interested in more detail on this topic are advised to consult Larry Ruth's *War Baby Comes Home*.

US NON-MILITARY MANUFACTURE AND USE

The M1 Carbine proved so popular with civilians and law-enforcement personnel in the USA that there were not enough military-surplus carbines available to satisfy the market. As a result, various commercial manufacturers began producing the M1 Carbine.

It is generally accepted that the first US manufacturer to produce commercial M1 Carbines was the Bullseye Gun Works, which began production in 1956 or 1957 using US Government surplus parts, except for the receiver and barrel. Barrels were constructed from 1903 Springfield barrels. After producing between 2,000 and 3,000 carbines under the Bullseye name, the company was reorganized as the Universal Firearms Corporation. Universal became so well known for manufacturing commercial M1 Carbines that the term "Universal Carbine" is sometimes used generically for the products of other manufacturers.

At its peak, Universal was producing up to 40,000 M1 Carbines per year. As surplus parts became unavailable, Universal had to begin manufacturing its own parts. Although Universal produced predominantly copies of the standard M1 Carbine, the company also produced some variants including the "Vulcan," which was a .44 Magnum slide-action design, and the "Ferret," which was chambered for a high-velocity .256 cartridge.

By far the best-known Universal variant, however, was the "Enforcer," a pistol version of the carbine. At 17.75in in overall length and 3.75lb the pistol-gripped Enforcer was relatively handy, but its 10.25in barrel still gave substantial muzzle velocity to the standard .30 Carbine round. The Enforcer had only a pistol grip to avoid being classified as a "Short Barrel Rifle" under US law and requiring registration. It took the 30-round M2 Carbine magazine.

The Enforcer proved popular with some law-enforcement personnel who liked the penetration of the round and the magazine capacity. One of the more infamous uses of the Enforcer in an actual gunfight occurred across the Mississippi River from St Louis, where the author lives. In the small town of Brooklyn, Illinois, which for many years has provided late-night entertainment in massage parlors, strip clubs, gambling dens, and bars, a story unfolded that sounded as if it were from the 1870s rather than the 1970s. Frank Skinner, the former police chief of Brooklyn, set out at the mayor's request to reclaim the town from a gangster element led by James Bollinger, a self-styled "town boss" and member of the Brooklyn Police force. Skinner approached a vehicle containing Bollinger to order him to leave town, but Bollinger "allegedly" reached for his Universal Enforcer. He was too slow, however, and Skinner ended his life with a 12-gauge riot gun. As with the gunfight at the OK Corral and the Earp brothers, some Brooklyn residents considered Skinner a hero and others considered him a murderer. Decades later, the controversy still rages, but all agree it was a Universal Enforcer that Skinner faced in the incident.

Another US company that made a substantial number of commercial M1 Carbines was the Plainfield Machine Company. Starting in 1967, Plainfield produced M1 Carbines that were very similar to US World War II military carbines and initially used as many surplus parts as possible. As with Universal, barrels were turned down from surplus 1903 Springfield barrels. Many orders for Plainfield carbines came during the late 1960s – when there were riots in many American cities – as civilians purchased weapons to defend their homes, families, and businesses. In addition to the standard military-style carbine, Plainfield made a version designated the "Plainfielder" with a fancy walnut sporting-rifle stock and a "Paratrooper" model with a sliding stock rather than the M1A1 paratrooper stock. At least some of the paratrooper versions had a front pistol grip.

In 1975 Iver Johnson Arms, Inc. purchased Plainfield Machine Company and began manufacturing M1 Carbines under the Iver Johnson brand. As produced by Iver Johnson, carbines resembled late-war US military production ones. Among carbines produced by Iver Johnson was a 1980 "D-Day Commemorative" model and a model designed for export sales to France. Since France had a law against private ownership of

weapons chambered for military calibers, the French export carbine was chambered for a "French Short" .30 round, which was exactly like the standard .30 Carbine load but with a case 0.100in shorter so that a standard carbine round would not chamber.

In 1983, Iver Johnson also acquired Universal Firearms Company, which continued to manufacture carbines under its own name until 1987. Iver Johnson produced various modified versions of the M1 Carbine, including the "Survival Carbine" with side-folding stock and the "Super Enforcer" pistol version. Another interesting variant was the G.I.9, which was a 9×19mm carbine that used Browning P-35 magazines. In 1987, American Military Arms Corporation acquired Iver Johnson and continued manufacturing US military-spec carbines under the Iver Johnson name, including some additional commemorative carbines, including one in 1991 celebrating the 50th anniversary of the carbine's adoption. Another early manufacturer of commercial M1 Carbines was National Ordnance Inc., which began production in 1960 using surplus GI (government-issue) parts except for receiver and barrel and a couple of other minor parts. As GI surplus parts became scarce, National Ordnance used parts from various subcontractors to complete the entire carbine. National Ordnance produced three primary versions of the carbine – one that was virtually identical to a late-war Inland carbine, another virtually the same as the first but with a ventilated metal handguard, and the third a "paratrooper" version that used an MP 40-type metal underfolding stock. Over a ten-year period approximately 50,000 National Ordnance carbines were produced.

There were numerous other manufacturers that either attempted to produce or produced commercial versions of the M1 Carbine, though none were as successful as Universal, Plainfield, or Iver Johnson. Howa Machinery, Ltd, makers of carbines for the Japanese Self-Defense Forces, also produced a civilian version. The 10,000 "Sporter" versions of the M1 Carbine produced by Howa for commercial sales showed quite a few modifications from the standard M1 Carbine. These affected the receiver, barrel, stock, handguard, sights, and trigger housing among other parts. The magazine was a five-round "sporting magazine," as many US states limit hunting rifles to five rounds. However, standard 15-round magazines could be used.

One firm that offered an interesting variation of the M1 Carbine was Johnson Arms. USMC Col Melvin Johnson, Jr, the founder of the firm, is best known for designing the Johnson self-loading rifle (which lost out to the Garand in the US Army trials for an infantry rifle) and Johnson light machine gun, both of which saw some use in World War II – most notably with the US Paramarines and the joint US/Canadian 1st Special Service Force. During the 1960s, Johnson had worked on developing a high-velocity 5.7mm round based on a necked-down M1 Carbine case. Johnson Arms produced a limited number of M1 Carbines chambered for the round developed by Johnson and designated the 5.7mm "Spitfire." Some of the carbines produced by Johnson Arms were actually conversions of surplus carbines. The company also sold a conversion unit so that

In June 1950, a lieutenant colonel battalion commander receives coaching on shooting the M1 Carbine. (NARA)

standard .30 carbines could be converted to 5.7mm. Among other versions of the "Spitfire" carbine offered was a "Police" model with a 12in barrel and folding wire stock. The author is not certain if Johnson Arms ever produced their own receivers, but production was low enough that it seems likely they purchased receivers from other manufacturers, along with any standard parts, or used surplus carbines as the basis for their "Spitfire" models.

Commercial production of the M1 Carbine continues today by Auto-Ordnance, which offers a reproduction of the standard M1 Carbine as well as the M1A1 Carbine. Dimensions are similar to those of the original carbine. For re-enactors who portray World War II US paratroopers the AOM150 Auto-Ordnance M1A1 paratrooper carbine is a good buy at US$1,084, as authentic M1A1 Carbines today sell for three to five times that figure, and many collector/re-enactors do not want to shoot their authentic M1A1s.

PISTOLS USING THE .30 CARBINE ROUND

It is ironical, since the M1 Carbine was developed to replace the handgun, that some manufacturers were interested in developing a pistol or revolver chambered for the .30 Carbine round. Generally, three factors contributed to this interest: the availability of inexpensive .30 Carbine surplus ammunition for many years; the flat shooting characteristics of the .30 Carbine round in a handgun, which made it useful for small game; and the desire of those who used the M1 Carbine for a companion handgun in the same caliber.

An AMT Automag III Self-Loading .30 Carbine pistol. (Author photo)

As early as 1944, Smith & Wesson had submitted a few M1917 revolvers modified to take the .30 Carbine round to the US Army for testing, but the revolver was never produced except in prototype form and it does not appear that adoption was ever seriously considered. The first of the .30 Carbine handguns to reach production was the Kimball, produced by the J. Kimball Arms Company. Initially, the company hoped to receive US Government contracts for the pistol as a replacement for the M1911 pistol. Beginning in 1956, somewhere between 200 and 250 Kimball pistols were produced, but the use of a delayed-blowback action with the high-velocity .30 Carbine round made the pistol unsafe, leading to its failure. It was never seriously considered for government adoption.

The most successful of the .30 handguns is the Sturm, Ruger Single Action Blackhawk revolver. With a 7.5in barrel, six-shot cylinder, and adjustable rear sight, the Ruger .30 Carbine Blackhawk is very similar to the .357 Magnum and other revolvers in the Ruger line. First introduced in 1968, the .30 Carbine Blackhawk is still in production as this is written, which would seem to indicate Ruger has enough of a market for it to keep it in the catalog.

Another .30 Carbine handgun produced in some quantity was the Irwindale Arms, Inc. AMT Automag III self-loading pistol. The pistol is a single-action automatic and takes an eight-round box magazine. Overall length is 10.75in, and weight is 45oz. The barrel is 6.5in in length. Functioning is reliable due to the use of the Colt/Browning dropping-barrel locking system. The Automag III is now out of production but was a good pistol for those who liked the .30 M1 Carbine round. The author owns one through which he has fired hundreds of rounds and considers it a good companion gun for someone who uses an M1 Carbine. He had a letter some years ago, in fact, from a deputy sheriff who carried an Automag III as his duty sidearm and also carried an M1 Carbine as his patrol rifle.

One other pistol in .30 Carbine chambering achieved some success. The Thompson Center Contender is a single-shot top-break pistol designed to take a wide array of barrels. The Contender is widely used by handgun hunters and one of the barrels available for it has been in .30 M1 Carbine chambering.

In addition to those designs discussed above various other prototype weapons or limited production examples have been chambered for the .30 Carbine round, an indication of its continued popularity long after World War II. Nevertheless, the .30 Carbine cartridge remains most popular among those who shoot the M1 .30 Carbine.

CONCLUSION

The M1 Carbine was developed and put into production fast due to the need to arm the United States' burgeoning armed forces quickly after Pearl Harbor. Initially intended primarily as a replacement for the pistol or submachine gun among officers, artillerymen, machine-gun and mortar crews, and support troops, the M1 Carbine proved popular with many front-line combat troops as well. That was not always the case, however, as many troops were not happy with the M1 Carbine's stopping or killing power. Much of the time, this dissatisfaction arose through comparing the M1 Carbine to the M1 Garand rifle rather than to the pistol, revolver, or submachine gun it was intended to replace.

As with virtually any weapon, the M1 Carbine was a compromise between power and portability. Designed for troops who would generally be operating crew-served weapons, transporting ammunition or other supplies, handling communications, or providing other combat support, the M1 Carbine's handiness and ease of carry made it popular. This handiness was not lost on infantrymen operating in jungle or forest where engagements were often sudden and at close range, where the M1 Carbine's 15-round capacity and handiness made it very effective.

More M1 Carbines were produced than M1 Garands, which makes sense since there were more support troops than infantrymen. In about three years of production, over six million M1 Carbines were produced, a number that took decades for the M16/M4 series to surpass. Converted to select-fire M2 configuration and upgraded with late-war features, the M1 Carbine saw service with the US armed forces for 20 years after World War II and with some foreign armies for much longer.

More than 65 years after the end of World War II, the M1 Carbine is still one of the US military weapons that generates the most interest among shooters, collectors, and those with a casual interest in military weaponry. The author has noticed when he attends World War II re-enactments that

in the weapons displays, the M1 Carbine – especially the M1A1 – generally attracts more attention than the M1 Garand. Partially, this is the handiness of the carbine, which appears to be, and is, easily handled even by those of small stature. Then, of course, there is the *Band of Brothers* effect. The popularity of the HBO series about a company serving with 101st Airborne Division in World War II created even more interest in World War II infantry weapons, especially those used by the paratroopers. The price of collectible M1A1 Carbines and M1 Garands has doubled since the TV series ran.

Collectors still covet other World War II infantry weapons, especially the M1 Garand and M1911A1 pistol, but there is something special about the M1 Carbine. For many years after World War II, veterans often wanted to own an M1 Carbine, M1 Garand, or M1911 of the type they had carried during the war. In one well-known case, a World War II infantryman – the serial number of his issue rifle ingrained in his memory – actually managed to find among surplus Garands the exact one he had carried in combat. Most could not find their exact rifle but were satisfied with one of the same type. However, later generations, such as the author's, grew up in the years after World War II listening to uncles and fathers talk about the war – when they were willing to do so – or watching television shows such as *Combat* about World War II. For many of that group, the M1 Carbine was more sought-after than the M1 Garand. The author, for example, owned a half-dozen M1 Carbines before he purchased his first Garand and had carried one of those carbines in his patrol car as a deputy sheriff.

For collectors, the M1 Carbine is a treasure trove as there were numerous manufacturers and variants. Additionally, there was a diverse group of accessories for the M1 Carbine. However, because of the popularity of the weapon, assembling a comprehensive collection today would be very expensive. For those who just wanted a carbine to shoot and as a link to World War II, the substantial number of M1 Carbines that came into the USA a few years ago as former Lend-Lease surplus was a windfall, and they were snapped up rapidly. Even these carbines that have generally been extensively overhauled and carry import marks have risen in price. To give some idea of the iconic status of the M1 Carbine and the M1 Garand, as this is being written US Secretary of State Hillary Clinton is under pressure from both Democratic and Republican senators and representatives to reverse a State Department decision not to allow surplus M1 Carbines and M1 Garands to come into the USA from South Korea for civilian sales.

The M1 Carbine was both a weapon for its time and in some ways a weapon ahead of its time, a forerunner to modern PDWs and assault rifles. Perhaps the best way to summarize the M1 Carbine's appeal for combat troops is to state that the best combat weapon in the world is no good if it is not close at hand when danger threatens. The M1 Carbine is very easy to keep close at hand.

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Note on terminology

During World War II, GIs generally referred to the M1 Garand rifle as the "M1" and to the M1 Carbine as the "carbine." In most cases, for clarity this book employs the terms "M1 Garand" and "M1 Carbine" when referring to the two weapons. However, note that in quotations from veterans the terms "M1" and "carbine" are normally used.

Artist's note

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Editor's note

Measurements in this book are provided in US customary units only. The following may help in converting measurements into metric:

1 mile = 1.6km
1 yard = 0.9m
1ft = 0.3m
1in = 2.54cm/25.4mm
1 grain = 64.8mg
1 foot-pound = 1.36 joules
1fps = 0.30m/s

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