

The new U. S. Army Rifle M14, known as the T44 during development, it fires the 7.62 mm. NATO cartridge, and weighs 8.7 lbs. unloaded against 9.6 lbs. for the M1 (Garand) rifle. Balance and handling qualities are excellent. Magazine capacity is 20 rounds instead of 8 in the M1. A change lever (A) gives choice between semi- and full-automatic fire. Under current plans the regularly issued rifles will be equipped for semi-automatic fire only. Barrel length is 22". The slotted flash hider (B) resulted from fundamental investigations which revealed that flash is best suppressed by extending rods before the muzzle to break up the compression wave of the emerging gas.

New Service Rifle

By Col. E. H. Harrison, USA (Ret'd)

NRA Technical Staff

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U.S. Army adopts new infantry arm firing the 7.62 NATO cartridge

THE Secretary of the Army announced on May 1, 1957, the institution of a new small arms weapons system for Army combat forces, and approval of plans to adopt a new standard rifle. Following are pertinent paragraphs from the announcement.

"Adoption of this new rifle, which replaces four current U. S. Army shoulder weapons, rounds out a program for a new weapons system, long planned and partly consummated recently with the adoption of the M60 General Purpose Machine Gun. Both

the new rifle and the new machine gun fire the 7.62 mm. NATO cartridge, which will be common to our NATO allies.

"The new system offers many advantages. It gives the modern Army a better and lighter rifle and a lighter machine gun to give forward infantry units greater firepower, while cutting the number of weapons in the small arms system from seven to two (one machine gun and a rifle in two barrel versions).

"It cuts field logistics loads by reducing the types of small arms ammunition, and, significantly, adopts a cartridge that will be standard also for our allies. It simplifies handling and maintenance problems and reduces training time for the combat soldier.

"Known during the period of its consideration by the Army as the T44, the new rifle will eventually replace the standard M1 (Garand); the Browning automatic rifle, familiarly

known since World War I as the BAR; the caliber .30 carbine; and the M3 submachine gun. The new rifle was developed by U. S. Army Ordnance at Springfield, Massachusetts, Armory, which also produced its predecessor, the M1 rifle. The M1, or Garand, has been the basic infantry weapon since early 1936.

"As funds are made available, a pilot line quantity will be produced, followed with volume production and issue of the new rifle to troops beginning in 1960.

"The T44 rifle has been under test

1. There was no emergency need. The existing standard rifle and other shoulder arms had withstood the test of battle and were still first-class. By contrast, before the adoption of the M1 rifle the Army was equipped with a bolt-action rifle of pre-World War I vintage, and the need for a modern semi-automatic rifle was acute.

2. Not merely a rifle was now wanted. Study and experiment showed the possibility of a single rifle to replace the conventional rifle, carbine, submachine gun, and automatic rifle; and that became the goal.

The British .303 cartridge, adopted in 1887, was like our Krag service cartridge in being of the rimmed type. The advantages of the rimless round for magazine arms were well known, and before World War I the British had decided that .276 was the best caliber for their requirements. Only the outbreak of that war prevented their going through with its adoption.

Between the wars, however, they did not pursue the matter with the old seriousness. The stock of rifles left on hand necessarily had something to do with this, but possibly by that time they



The M14 rifle is field stripped without tools. Action parts resemble those of the M1 rifle, but are markedly fewer and simpler in design. Gas cylinder mechanism (a) is of the expansion type, giving a longer and smoother push than the simple blow of the usual gas piston. Operating rod (b) is short, and gas cylinder remains attached to barrel when the rifle is dismantled

since 1952 in comparison with a rifle of similar characteristics and performance produced by the Belgian munitions firm, Fabrique Nationale. The Belgian rifle has been known here as the 'FN', popularly, and the 'T48', officially.

"The performance of both weapons throughout the tests was superior to that of the M1 rifle, and between the two, there were only marginal differences. The major factors favoring the T44 are that it is one pound lighter than either the M1 or the T48 and is considered better suited for American transition to both mass production and training than the Belgian design."

The new weapon is not simply another rifle. It was developed under the influence of three factors new in our military small arms history:

3. Our country could no longer develop its rifle for its own requirements alone, disregarding all else. The pointlessness of the existence among allies of rifle cartridges of about the same size and power, yet noninterchangeable, had been realized. The result was the adoption of a standard 7.62 mm. NATO cartridge, which any new rifle had to use. There would be also some advantage in having the same rifle made and used by allies, and this was a consideration along with the necessarily paramount one of performance.

The new rifle can be understood only in light of the above considerations.

The beginnings

Developments leading toward post-World War II rifles took different courses among the Western countries.

felt doubts as to whether they really had the answer. In 1945 they had the whole matter examined by a "Small Arms Ideal Caliber Panel" under a General Staff statement of what the cartridge had to do. Again the .276 (later called .280) was recommended. However, it was a radically different cartridge from the one dropped in 1914. That had been a powerful one, used in a rifle weighing about 10 pounds. The cartridge recommended by the panel in 1947 was comparatively short and low-powered. As first designed it gave a 140-grain bullet a muzzle velocity of about 2300 feet per second (f.p.s.).

Another major part in the rifle development was taken by the Belgians. They had no cartridge, and no systematic idea for the operational use of the rifle and what it had to accomplish. What they offered was a rifle action. It

was developed in the Fabrique Nationale d'Armes de Guerre, the small arms establishment of the Belgian government which produces both military and sporting arms. The design dates from the early 1930's.

FN did not succeed in making any great use of this action before World War II, and Belgium was an occupied country until the last year of that war. After the war, FN made up both a rifle of conventional military power and an "assault carbine" for the German 7.92 mm. short cartridge. The action was thus available and in a good state of development when the adoption of new rifles began to be seriously considered.

The third country making a major effort toward a new-style rifle was the United States. Its course was different from that of Great Britain or Belgium.

A rifle was produced during World War II to meet a demand by combat troops for a full-automatic form of M1 rifle. It was the T20, based on the M1 but with a 20-round detachable box magazine and a selective switch for full-automatic or semi-automatic fire. A muzzle brake was used to decrease recoil and the strong climbing tendency in full-automatic fire. The T20 performed as intended, and very well, and certainly would have been made and used in quantity had not the war ended when it did. The T20 was however not the desired new type of rifle, the characteristics of which were then emerging. It was carried through the successive sub-types T20, T20E1, and T20E2 before work on it ceased in 1947.

The cartridge first

Even while the war was still going on, thought was being given to the rifle required in the future. To put the development on a sound basis, the beginning was made in the cartridge. The purpose was to eliminate unnecessary weight and especially unnecessary length which has a great effect on the design and dimensions of automatic guns, while retaining about the power of the military .30-'06 cartridge. Based on the .300 Savage cartridge, a new .30 caliber round was designed and manufactured at Frankford Arsenal in 1945. It was designated T65, and thereafter all rifle caliber developments used this cartridge. Under Ordnance research and development contract, ball powder was adapted to it by Olin Industries, with great benefit in the problem of meeting required ballistics. It was then loaded commercially as a sporting cartridge, with the name .308 Winchester. In 1953 it became the standard cartridge of the NATO nations.

The first rifle based on a reasonably

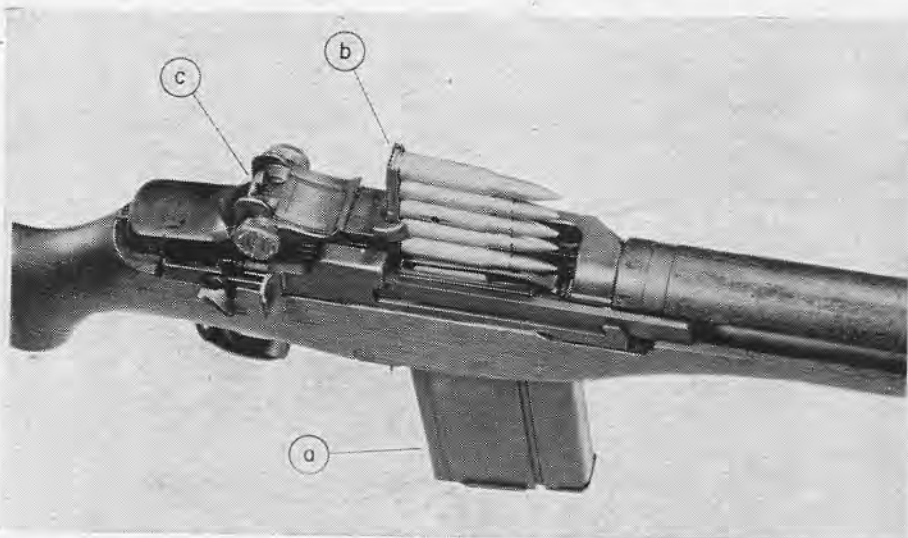
full realization of what would be required was the T25. It was developed at Springfield Armory, from a design laid down in the Office of the Chief of Ordnance in 1945. The action had a non-rotating bolt linked to the gas piston and operating rod. Other mechanical features were a 20-round box magazine, a selective firing switch, and a muzzle brake. To minimize climbing in full-automatic fire the stock was extremely straight, with the high sights that such a stock entails; but the rifle was also available with conventional stock. It was a true light rifle, weighing 7½ pounds. It fired the T65 cartridge.

First comparative trials

In 1947, on receiving the formal recommendations of their caliber panel for a short .280 caliber cartridge, the

British offered their results to the United States. The proposed British cartridge was rejected in the United States as being of inadequate power. There was as yet no British rifle.

The British then began the crash development of a cartridge and rifle. Working with great energy and enthusiasm, one team produced the cartridge and another the rifle. The characteristics of the rifle were determined quite objectively from the qualities desired—minimum weight and length, high rate of fire, ease of handling under difficult conditions, and simplicity in troop training. The result, the EM 2, was a highly unconventional military rifle. The design gave a short overall length with great handling ease, much like the 'bull-pup' rifles which in bolt-action types have been stocked and tried by individuals in this country (though in



The magazine (a) of the M14 can be loaded from clips (b) when in the rifle. It is a detachable box, a supply of which can be carried loaded. Aperture rear sight (c) is provided with strong 1-minute clicks in both elevation and windage, as in M1 rifle



Heavy-barrel form is the Automatic Rifle M15. Its special features are a heavy barrel, muzzle bipod, butt hook, and heavier stock. The M15 will always be fitted with the change lever permitting full-automatic fire. Its weight is 14.1 lbs., or 6.7 lbs. less than the Browning automatic rifle (BAR) which it replaces

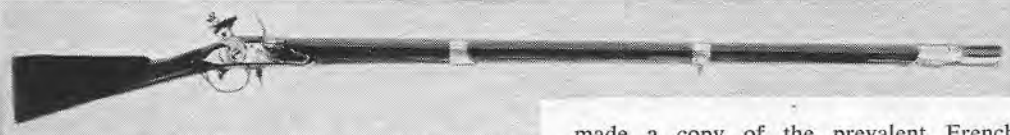
Epochal Types of U.S. Military Long Arms



FRENCH MODEL 1763 .69 CAL. FLINTLOCK MUSKET SURCHARGED "US"—The Revolutionary War found the 13 Colonies without any military arms manufactory. They turned to the French for military arms. All existing models of serviceable French military arms found

their way to the Continental forces, but none in greater quantity than the Model 1763. Usually referred to as the "Charleville" musket after the Royal Manufactory at Charleville, France, where most were made, this model was also produced by the Royal Manufactories at Maubeuge and St.

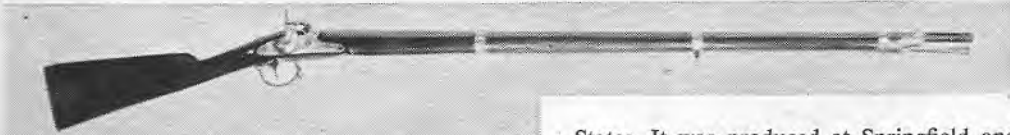
Etienne. These Model 1763 muskets had been produced in France before the Revolutionary War, in the period 1763 to 1770, but they were stamped "US" beginning in 1777 and saw service throughout the Revolutionary War (1775 to 1783). New American-made muskets began to displace them after manufacture started in 1795. They saw service as late as the War of 1812. The Model 1763 measures 60" overall, has a 44 $\frac{3}{4}$ " barrel, and weighs about 9 lbs. (Note: Musket pictured has a Model 1842 muzzle band and ramrod)



U. S. MODEL 1795 .69 CAL. FLINTLOCK MUSKET—When Springfield Armory began producing the first standard U. S. military shoulder arms in 1795, it

made a copy of the prevalent French Model 1763 .69 cal. musket left over from the Revolutionary War. The first of these Model 1795 muskets were not dated, but in 1799 the practice of showing the year

of manufacture was started and continued through the Civil War. The U. S. Model 1795 musket was produced at Springfield from 1795 to 1808, and at Harpers Ferry beginning in 1800. It was continued, practically without change, as the U. S. Model 1808 musket into 1812 at Springfield and into 1816 at Harpers Ferry. These muskets measure 59" to 60" overall, have a 44" to 45" barrel, and weigh about 9 lbs.



U. S. MODEL 1842 .69 CAL. PERCUSSION MUSKET—This is the only smooth-bore percussion musket made by the United

States. It was produced at Springfield and Harpers Ferry Armories from 1843 through 1855. It was rendered obsolete soon after it was last produced by the introduction

of .58 cal. rifled arms of the Model 1855. It measures 57 $\frac{3}{4}$ " overall, has a 42" barrel, and weighs 9 lbs. 3 ozs. The urgent need for arms during the Civil War continued these muskets in service either as smooth-bores or rifled for the .69 cal. Minie bullet



U. S. MODEL 1873 .45 CAL. RIFLE—This breech-loading, single-shot .45 cal. rifle was made as several models with minor modifications at Springfield Armory

from 1873 through 1893, when its manufacture was discontinued in favor of the U. S. Model 1892 Krag. Its hinged breechblock, which has been nicknamed 'trapdoor', was invented by E. S. Allin, Spring-

field Master Armorer, at the end of the Civil War as a method for converting great supplies of muzzle-loading rifle-muskets to breech-loaders. This action had been first employed in .58 cal. rimfire and .50-70 cal. center-fire rifles from 1865 into 1872. This rifle measures 51 $\frac{3}{4}$ " overall, has a 32 $\frac{3}{8}$ " barrel, and weighs slightly over 9 lbs.



U. S. .30 CAL. MODEL 1892 MAGAZINE RIFLE—The first smokeless powder repeating rifle adopted by the United States, in 1892, was the Krag-Jorgensen. It was

chambered for the rimmed .30 U. S. Army or .30-40 Krag-Jorgensen cartridge, which developed a muzzle velocity of 2000 f.p.s. using a 220-gr. full-jacket round-nose bullet. The Krag was manufactured at Springfield Armory from 1892 until 1902, in both

rifle and carbine styles with 30" and 22" barrels. The original 1892 pattern was modified successively in 1896, 1898, and 1899, with myriad minor changes in design. Conspicuous features were its unique side-loading magazine and extremely smooth bolt operation. It could not practically be clip-loaded, however, and was superseded in 1903 by the Model 1903 Springfield rifle



U. S. .30 CAL. MODEL 1903 MAGAZINE RIFLE—Of basic Mauser design, the U. S. Model 1903 rifle was the first clip-loaded smokeless powder rifle adopted by the U. S. Army. The rifle was initially chambered for the rimless U. S. Cartridge,

Caliber .30 Model 1903 with 220-gr. round-nose bullet, but this cartridge was superseded in 1906 by U. S. Cartridge, Caliber .30, Model 1906, which featured 150-gr. sharp-pointed 'spitzer' bullet at 2700 f.p.s.—a distinct ballistic improvement over the original 1903 round. Manufactured in 24" barrel length only in lieu of separate car-

bine and rifle lengths, it measures 43.2" overall and weighs approximately 8.6 lbs. The principal U. S. rifle of World War I, it was produced at Springfield Armory and Rock Island Arsenal until obsoleted in 1936 upon adoption of U. S. Rifle, Caliber .30 M1. Production of Model 1903A1, 1903A3, and 1903A4 versions was resumed for a short period during World War II by Remington Arms Co., and L. C. Smith-Corona Typewriters, Inc.



U. S. .30 CAL. M1 RIFLE—Known to millions of World War II GI's as the 'Garand', the U. S. Rifle, Caliber .30, M1 invented by John C. Garand, was adopted in 1936 with initial manufacture at Spring-

field Armory supplemented by later wartime manufacture by Winchester Repeating Arms Co. It has been manufactured in recent years by International Harvester Corp. and Harrington & Richardson. Chambered for a ballistically improved version of the 1906 cartridge, it is a semi-

automatic charged with an 8-round-capacity monobloc clip which remains in the magazine well until the last cartridge is fired and then is ejected. It measures 43" overall, has a 24" barrel, and weighs about 9.6 lbs. With the institution in 1957 of a new small arms weapons system in the U. S. Army, the M1 (as well as other weapons) will be replaced by the Rifle M14 chambered for the 7.62 mm. cal. NATO cartridge



The T48, final form of the contending rifle submitted by Fabrique Nationale of Belgium and adopted by several nations. It weighs 9.7 lbs. unloaded, slightly more than the M1 rifle. Barrel length is 21". Caliber, magazine capacity, provision for semi-automatic and full-automatic fire, and flash hider are like those of M14 rifle. Gas cylinder is on top of barrel. Unusual feature is hinged action like double-barrel shotgun, permitting ready removal of action parts. Rear sight is quickly adjustable in elevation; in windage only a zeroing adjustment is provided. A heavy-barrel model with bipod was also tested

the EM 2 the chamber is forward of the firer's head). The sight, a one-power telescope used also as a carrying handle for the rifle, was a notable departure. The gas-operated mechanism appears to have been very good. It was a remarkable accomplishment in the time available.

In 1950 the development of the U. S. T25 rifle was so far advanced that a procurement of 5000 was about to be made. (As a result of international involvements this procurement was never carried out.) The British at that time stated they had the EM 2, and asked for competitive trials before substantial quantities of the T25 were procured.

The trials were held at Fort Benning, Georgia. In addition to the EM 2, the British submitted an FN rifle of the type which has been mentioned above in connection with the original Belgian development. Both rifles used the British .280 cartridge. Result was a U. S. decision to stick with the .30 caliber T65 cartridge, and to intensify efforts to correct deficiencies found in the T25 rifle.

Choice of caliber and power

This was the second U. S. refusal of the light British cartridge. The underlying reasons are important.

The first is that in the United States the cartridge was not required for a rifle alone, but for an arm occupying the place of all shoulder weapons—conventional rifle, carbine, sub-machine gun, and automatic rifle—and necessarily for all rifle-caliber machine guns as well (unless a different cartridge were to be used for such machine guns). For uses of the rifle where the carbine and submachine gun have been employed, the low-powered British cartridge would be of some advantage. For

a rifle proper and for machine guns, it was entirely inadequate according to the United States concept of those weapons. For that the T65 cartridge was designed.

The second is indicated in the following from an official statement released in 1951: "The Army is firmly opposed to the adoption of any less effective smaller caliber cartridge for use in either its present rifle, or in the new weapons being developed. Any new rifle cartridge must have wounding power, penetration performance, and ballistics at least equal to that in use today. Battle experience has proven beyond question the effectiveness of the present rifle and ammunition, and

there have been no changes in combat tactics which would justify a reduction of rifle caliber and power."

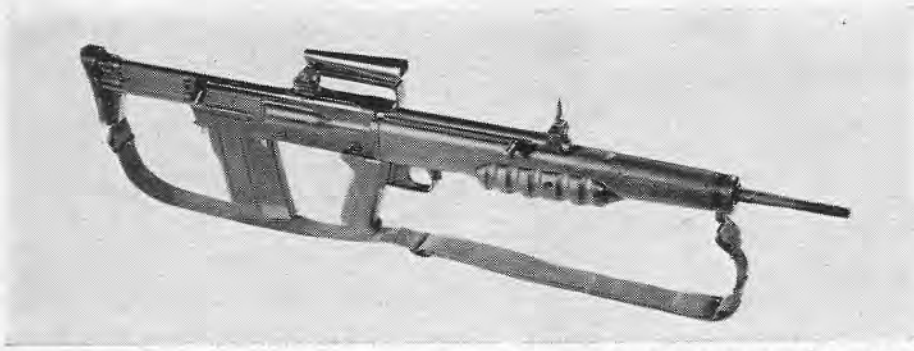
In 1951, the British government adopted the EM 2 rifle and .280 cartridge as the standard infantry weapon. Continued development had brought the velocity up to 2500 f.p.s. Following that, however, there was a change of government and the incoming Prime Minister, Winston Churchill, insisted on steps to remove any differences between the U. S. and the U. K., and to come out with a common cartridge. Tests were conducted at Pendine, Wales, and certain additional ones in the United States, which resulted in favor of the T65. This put the British government in the position of having to countermand the adoption of the EM 2 rifle and .280 cartridge, an action of understandable difficulty involving acrimonious debate in Parliament, but it was done.

NATO adopts T65

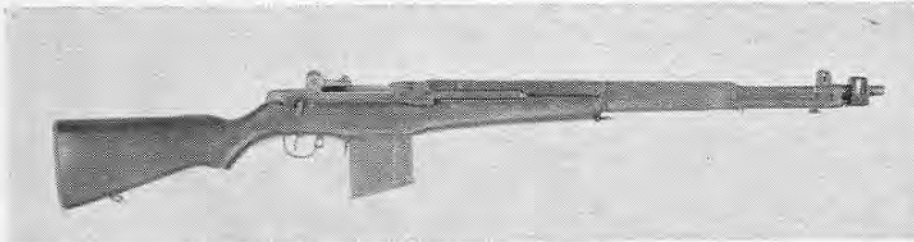
The T65 cartridge was subsequently adopted by the North Atlantic Treaty Organization in accordance with military characteristics which it had prepared for a rifle and machine gun cartridge. The NATO announcement of the T65 as the common cartridge was made December 15, 1953. The five NATO powers agreed on detailed specifications in February 1954. The Ordnance Committee action formally standardizing the T65 in the United States, with detailed specifications, took place in August 1954. Its official name there-



Close-up of T48 (top) and M14 rifle actions. Length of T48 receiver makes necessary a pistol grip under the action, to keep overall length of rifle within desirable limits



British EM 2 rifle. This is one of last models, being chambered for .30 cal. (7.62 mm.) cartridge and equipped with peep rear and open folding front sight in addition to fixed 1-power scope



Final form of T20 rifle development initiated during World War II for increased magazine capacity and optional full-automatic fire. Its performance was good, but a more radical and comprehensive solution to the problem of a new rifle was desired

after was Caliber 7.62 mm. NATO Cartridge.

It should be noted that the United Kingdom, Belgium, and Canada standardized lead-cored ball ammunition. The United States standardized steel-cored ball, primarily because of the lead shortage which occurs in the United States in time of war. While lead-cored ball may be produced in limited quantities when desired, there was no point seen in adopting as the formal standard an ammunition type which will not be made in time of war.

Springfield and FN rifles

We now return to the rifles.

No NATO requirement was ever established for a common rifle. However, it was recognized that adoption of a common rifle would simplify training problems in the various countries (though not fully so, since these countries have different organizations reflecting differences in how they use the rifle and to what extent other weapons would be replaced).

To make use of the points brought out during the competitive trials in 1950, Ordnance replaced the T25 rifle with two new development models. One, the T47, was a continuation of the T25 though without the special straight stock. The other, the T44, was based largely on the M1 design though with some marked differences as will be noted below. Other development rifles which provided valuable information were the T28, T31, T33, and T37.

At the same time, Fabrique Na-

tionale was asked to make up some rifles for the T65 cartridge. FN did so, and the rifles were designated T48. As stated in an Army reply to an inquirer: "Fabrique Nationale did not obtain classified military characteristics from the United States, but used initiative and imagination in developing a rifle which, when first presented to this government, came close to meeting most of the U. S. military characteristics. On their own initiative and sometimes at the suggestion of the Army, FN has continued to make modifications at their own expense, such as adapting the rifle to fire the T65 cartridge. FN has been paid only for prototypes purchased for U. S. Army use. No contract for development of the FN rifle has existed between the United States and FN. FN has given to the United States without cost the rights to produce the FN rifle in the U. S. for U. S. troop use anywhere in the world".

In 1952, the T47 was dropped. This left only the T44 and T48 in the field. Following are their weights in comparison with those of the M1 rifle and Browning Automatic Rifle M1918A2, respectively:

<i>Light-barrel</i>	
M1	—9.6 lbs.
T44 (M14)	—8.7 lbs.
T48	—9.7 lbs.
<i>Heavy-barrel</i>	
M1918A2 (BAR)	—20.8 lbs.
T44 (M15)	—14.1 lbs.
T48	—13.4 lbs.

The "light rifle" aimed at when the development began in 1945 has here al-

most disappeared. Extraordinary performance demands have resulted in about conventional gun weights. It is to be noted that not only the requirement for bayonet use, but especially for firing anti-tank and other rifle grenades, calls for strength much beyond that of a sporting rifle. The T48 weighs as much as the M1. The T44, however, shows a weight saving of about one pound. In the heavy-barrel division a saving of about seven pounds has been attained.

Results of final tests

In early 1954, the FN rifle using the 7.62 mm. NATO cartridge was adopted by the United Kingdom, Belgium, Canada, and Australia.

During the winter of 1953-54, the T44 and the FN-made T48 were subjected to Arctic tests. The T44 did very well, with only some minor defects. The T48 did not perform at all well.

The Chief of Ordnance was thereupon directed to correct all deficiencies found and to submit models of both rifles for test the following winter. It was also required that the T48 manufacturing drawings, which had been furnished by FN, be translated from metric dimensioning and Belgian manufacturing practice to inch and U. S. practice. Springfield Armory was made responsible for the overall supervision of this work. The Mathewson Tool Company, North Haven, Connecticut made the 13 T44 rifles, divided between standard and heavy-barrel types, required for the next winter's test. The High Standard Manufacturing Corporation, Hamden, Connecticut, made the 13 T48 rifles required. High Standard, greatly helped by generous Canadian cooperation, also converted the Belgian drawings, a colossal job.

At the same time but as a separate action, Ordnance was directed to have 500 rifles of each model built to determine whether they would perform satisfactorily when made by mass-production methods. The 500 T44's were manufactured by Springfield Armory. The 500 T48's (under the supervision of the Boston Ordnance District, not Springfield Armory) were manufactured by Harrington & Richardson, Inc., Worcester, Massachusetts. Springfield Armory was able to give invaluable help to H&R. Advantage was taken of the FN Rifle Steering Committee which had been set up between the ABC nations to agree on definitive drawings and specifications for the FN rifle. The work included the preparation of a production study by the producer of each rifle. Each finished his work and delivered manufactured rifles and produc-

tion study about June 30, 1956. Test showed that these rifles made by production methods performed as well as development models.

Meanwhile the Department of the Army purchased 3000 of Fabrique Nationale's Model 1953 rifle in light-barrel and 200 in heavy-barrel style, for an operational research test of the practicability of a single infantry rifle replacing the conventional rifle, carbine, submachine gun, and Browning automatic rifle. This was not a test of the FN rifle, but of the basic single-rifle concept. Deliveries began in the summer of 1954. With the help of this large number of rifles, the concept was thoroughly examined by a variety of combat units and all the Service schools, at locations in the Arctic, the tropics, and most sections of the United States. The new system was expected to show advantage in:

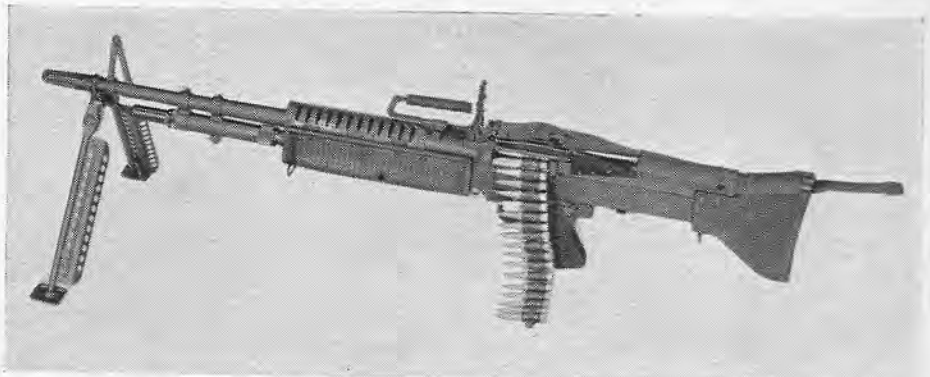
- a. Greater fire power for the Infantry.
- b. A better individual rifle and automatic rifle for the Infantry.
- c. Reduction in training time.
- d. Simplification in maintenance.
- e. Simplification and reduction of logistical problems.

Results were definitely favorable to the single-rifle concept.

The Arctic test in the winter of 1954-55 was held on schedule, using the new rifles made for that purpose after the 1953-54 test. Both rifles were found suitable for Arctic use.

The same test rifles were then taken to Fort Benning for trial by Army Field Forces Board No. 3. Special attention was given to a newly devised "Combat Course Test" intended to establish the worth of a rifle under very severe combat conditions. The T48 did badly. The Board stopped the test before completion. The British, the Canadians, and FN were somewhat shocked at this result. They were invited to submit their latest rifles for test, and the British and FN did so. The T48 rifles used in the test were modified at Springfield Armory, on the basis of British results obtained in the Sudan, and British and FN recommendations for correction. In addition, some T48's were added from the above-mentioned Harrington & Richardson production, with latest FN suggestions incorporated. No substantial change was made in the T44 rifles.

At the direction of the Army Deputy Chief of Staff for Research and Development, the test at Fort Benning was resumed on April 1, 1956, and carried to completion. The Board found both rifles suitable for Army use. The T44 was preferred, because of its one-pound weight saving over the T48 and because



Army's general purpose machine gun M60, standardized early in 1957. It will replace all types of Browning .30 cal. ground machine guns. It weighs 23 lbs., and feeds the 7.62 mm. NATO cartridge from a disintegrating link belt. Barrel and gas cylinder can be changed in a few seconds. Bipod legs fold against barrel when not in use. Gun is adapted to continuous fire from either bipod or hip, or from ground machine gun tripod. The M14 and M15 rifles and M60 machine gun will now constitute the whole family of .30 cal. (7.62 mm.) infantry weapons

of being better suited for U. S. mass production and training. The official decision followed.

Two considerations in particular appear fundamental if the new development is to be appreciated.

The first is pointed out by General Hatcher in *The Book of the Garand*: "Almost every system for making a semi-automatic rifle that was ever brought in and submitted by an inventor, was one that had already been invented, patented, and experimented with at great length, by one of the early pioneers such as Maxim, Browning, Mauser, von Mannlicher, and others. The difficulty of making a practicable military semi-automatic shoulder rifle did not lie in inventing a system of operation; the difficulty was in taking such a system

and then making from it a gun that was simple, rugged, durable within the weight limit, and which would function under all kinds of adverse conditions and would fire rapidly without heating up too much." This remains true. The new rifle was adopted only after tests which were in their total more extensive and severe than any rifle has had to meet in our country before.

The second is that the new rifle is part of a weapons system. The day has passed when a rifle, or any other important weapon, could be considered in isolation. For this reason the announcement of the Secretary of the Army mentioned first the institution of a new small arms weapons system for the Army, then approval of plans to adopt a new standard rifle.



Members of THE AMERICAN RIFLEMAN Staff examine the new M14 rifle. (l. to r.) Walter J. Howe, RIFLEMAN Editor; Maj. Gen. Julian S. Hatcher, USA (Ret'd), Technical Editor; and Col. E. H. Harrison, USA (Ret'd), Technical Staff