Garand vs. Pedersen

The adoption of the "U.S. Rifle, Caliber .30, M1" in 1936 was an important milestone that gave U.S. troops the most advanced infantry rifle of its day—and one of the best of all time. But the Garand's adoption was far from a sure thing. A gun designed by John D. Pedersen gave John C. Garand more than a run for his money.

BY BRUCE N. CANFIELD, Field Editor

Rifles courtesy of National Firearms Museum. T3E2 gift of Maj.-Gen Julian S. Hatcher. Photos by Hannele Lahti

Springfield Armory Garand Semi-Automatic Rifle "T3E2" .276 Pedersen

The M1 Garand rifle has long been recognized as one of the premier battle rifles of World War II and is one of the best-known military firearms of all time. Given the fame and respect the M1 has rightfully garnered through the years, it may be surprising to some that its development and subsequent adoption was far from a foregone conclusion. While John Garand was working on his rifle, another talented inventor, John D. Pedersen, was developing a competing design. Both inventors had their supporters and detractors and, for a number of years, there were some questions and controversies about which gun the U.S. military should select as its new semi-automatic service rifle.

The U.S. Ordnance Dept. tried to develop a semi-automatic service rifle as early as 1909, when Springfield Armory was directed to formulate guidelines for the desired specifications for such an arm. Several designs were submitted over the next few years, some of which centered around the conversion of the Model 1903 Springfield from bolt-action to autoloading operation. None of the proposals was sufficient to merit much interest, although a Danish inventor named R.M.H. Bang developed the most promising design. The Bang rifle (named after the inventor, not the sound it made) was a gas-operated, turning-bolt model tested by the Ordnance Dept. in 1912. Although it fared well, officials still had some misgivings about its questionable functioning and excessive manufacturing costs. Even so, Ordnance continued to test improved versions as late as 1914.

Pedersen Semi-Automatic, Vickers-Armstrong, Ltd., .276 Pedersen

John Garand's semi-automatic rifle design, here a T3E2, accepted an en-bloc clip that could be fed either way.

During this same period, Mexico adopted a rather rudimentary semi-automatic military rifle, the Mondragon. Manufactured in Switzerland, the operation of this gas-operated rifle left a lot to be desired. In 1914, the Germans tested the Mondragon and determined that it was unsuitable for further consideration, given its functioning problems, and that the nation should continue equipping its troops with the bolt-action Mauser.

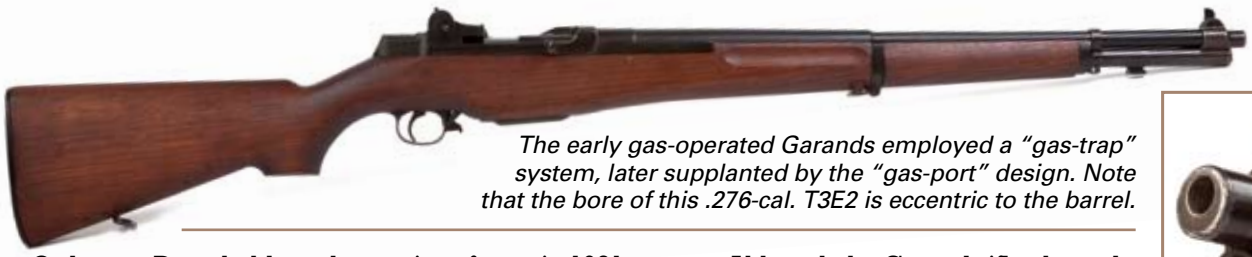
World War I conclusively demonstrated the superiority of full-automatic arms over the bolt-action service rifles fielded by all of the belligerent nations. Each nation developed heavy machine guns, and some also fielded lighter full-automatic rifles that performed with varying degrees of effectiveness. Although full-automatic arms were widely used during the war, no military adopted a semi-automatic rifle. There were several semi-automatic civilian sporting rifles on the market before the war; however, none could manage the powerful service cartridges of the day, such as the American .30 Springfield (.30-'06 Sprg.). The U.S. military was aware of the advantages of a semi-automatic rifle chambered in a standard service cartridge, and even before the conclusion of the war the U.S. Army Ordnance Dept. was charged with developing a suitable rifle of this type.

Some of the preliminary work in designing a semi-automatic rifle for the U.S. military had been in progress since the summer of 1918 by a civilian employee of the Bureau of Standards, John Cantius Garand. Born in St. Remi, Canada, on January 1, 1888, Garand trained as a tool and gauge maker after immigrating to the United States. Garand was interested in firearms, and soon after the outbreak of World War I he began to formulate methods to improve the functioning of full-automatic arms. The Bureau of Standards eventually hired him to work on his concept for an improved light machine gun. In June 1918, Garand finalized the prototype of his "machine rifle." The design impressed the Bureau of Standards, and Garand was promoted on Aug. 16, 1918, to "master gauge and gun experimenter." On Nov. 4, 1919, Garand was transferred to Springfield Armory as a civilian employee with an annual salary of $3,500.

Garand shifted the emphasis of his work from an automatic "machine rifle" to the development of a semi-automatic rifle. He fabricated a prototype in 1919, and further development continued at Springfield Armory in 1920. Garand's rifle, designated the "T1920," utilized a novel "primer-actuated" mechanism teamed with an efficient "turning bolt" design.

The Ordnance Dept. appointed a board of officers to assess the feasibility of a semi-automatic rifle and evaluate various designs to determine their respective capabilities. The board convened in May 1920 and evaluated several rifles, including the T1920 Garand. Other entries included a rifle from Colt Patent Firearms Mfg. Co., a design developed by a French inventor (Berthier) and an improved Bang rifle (modified by U.S. Army Officer James L. Hatcher). All four were subjected to rather grueling tests and, ultimately, the board judged all to be unsatisfactory. It asked the designers to refine their rifles to improve on the problems encountered during the testing. The

The Pedersen design was a delayed blowback with a toggle-joint action. Cartridges had to be waxed, and the 10-round-capacity clip could only be inserted one way.



The early gas-operated Garands employed a "gas-trap" system, later supplanted by the "gas-port" design. Note that the bore of this .276-cal. T3E2 is eccentric to the barrel.

Ordnance Dept. held another series of tests in 1921, and the rifles submitted included two from Colt and a slightly modified Berthier rifle developed by the U.S. Machine Gun Co. Garand did not submit another rifle since the tests were convened before he was able to complete the desired modifications. This was also the case with the Hatcher-modified Bang rifle. None of the rifles in the 1921 tests was acceptable to the board. Even though a suitable design had still not been found, the military continued its quest for acquisition of a serviceable semi-automatic, and both Garand and Hatcher were encouraged to complete the redesign of their rifles.

Garand's improved design was designated the Model 1921. The rifle differed substantially from his original design (T1920), but it still featured the unusual primer-actuated mechanism. Subsequent testing in July 1924 confirmed that the redesigned Garand rifle was a definite improvement over its predecessor. This was not the case with the modified Bang rifle, and further development of it was dropped. This left the Garand as the leading contender for the first U.S. military semi-automatic service rifle. The Ordnance Dept. requested several relatively minor changes to the Model 1921, however, including reconfiguration of the stock. This slightly modified design was designated as the Model 1924, and Springfield Armory was ordered to fabricate 24 rifles in early 1925 for further testing and evaluation.

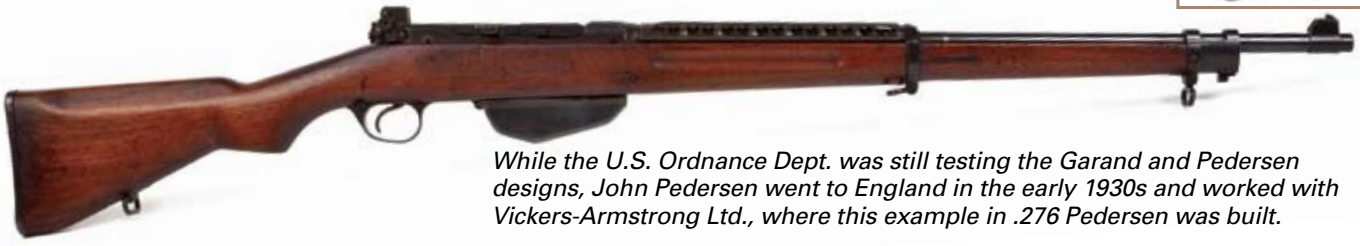
Even while Garand developed the improved rifle, the U.S. Army tested some commercial .25-cal. Remington autoloading rifles and became interested in the potential advantages of a military cartridge smaller than the standard .30-cal. round. Those rifles chambered lighter ammunition, had less recoil and less heat from rapid-fire operation. A noted small-arms designer, John D. Pedersen, approached the Ordnance Dept. with a proposal to develop a semi-automatic rifle along with a new .276-cal. cartridge. Pedersen was well known in ordnance circles since he had been instrumental in developing some of Remington's most popular guns. He was also the inventor of the then-top-secret Pedersen Device, which converted the bolt-action .30-'06 M1903 Springfield rifle to semi-automatic by means of a removable "automatic bolt" that fired a .30-cal. pistol-size cartridge.

Although the Garand rifle showed significant promise, the government hedged its bets by engaging Pedersen's services so as to have two rifles in more or less parallel development. Pedersen worked on his rifle design from 1923 until 1928. In marked contrast to Garand's rather modest annual civil service salary of $3,500, the government paid John Pedersen $10,000 per year and a $1.25 royalty for each rifle of his design that might be manufactured (up to 400,000 rifles). As a government employee, Garand was not entitled to any royalty payments should his rifle go into production.

The .276-cal. Pedersen rifle was tested by the Ordnance Dept. between December 1925 and May 1926. The results were favorable enough to result in an order for 20 Pedersen rifles, designated as the T1. Pedersen's design differed from Garand's in many respects. The mechanism was a delayed-blowback type, and the toggle breech action was reminiscent of the German Luger pistol. One drawback was that the mechanism required lubricated cartridges. The military had always taken a dim view of lubricated cartridges, but Pedersen sought to overcome the problem by applying a thin wax coating to the cartridge cases. Another subject of some criticism was that the 10-round "en bloc" clip could only be inserted into the receiver with the flat end down, whereas Garand's clip was reversible and could be inserted from either end.

During this period, John Garand was forced to totally redesign his rifle since the recent adoption of the new "M1" .30-cal. service cartridge resulted in a round that was incompatible with the operation of his primer-actuated mechanism. In 1926, he literally went back to the drawing board and designed a rifle using a gas-operated mechanism chambered for the standard .30-'06 Sprg. cartridge. The resulting rifle was designated the T3.

As Garand finalized the design of his new gas-operated rifle in December 1927, the Ordnance Dept. determined that the .276-cal. cartridge would be adopted as a replacement for the .30-'06. Garand once again



While the U.S. Ordnance Dept. was still testing the Garand and Pedersen designs, John Pedersen went to England in the early 1930s and worked with Vickers-Armstrong Ltd., where this example in .276 Pedersen was built.

found it necessary to redesign his rifle, this time to modify it from .30 to .276 caliber.

A new "Semiautomatic Rifle Board" was appointed in early 1929, and tests were scheduled for July 1, 1929, to evaluate several .276 rifles. Other nations submitted a number of designs along with the T1 Pedersen rifle and redesigned T3 Garand rifle. The field was soon narrowed to these last two entrants, however, and both rifles were thoroughly examined and evaluated. Although there were positive and negative aspects to both, the Garand was deemed easier to manufacture and had a greater ability to utilize interchangeable parts. The Garand's non-lubricated cartridges and reversible clip were two distinctions cited as important advantages over the Pedersen.

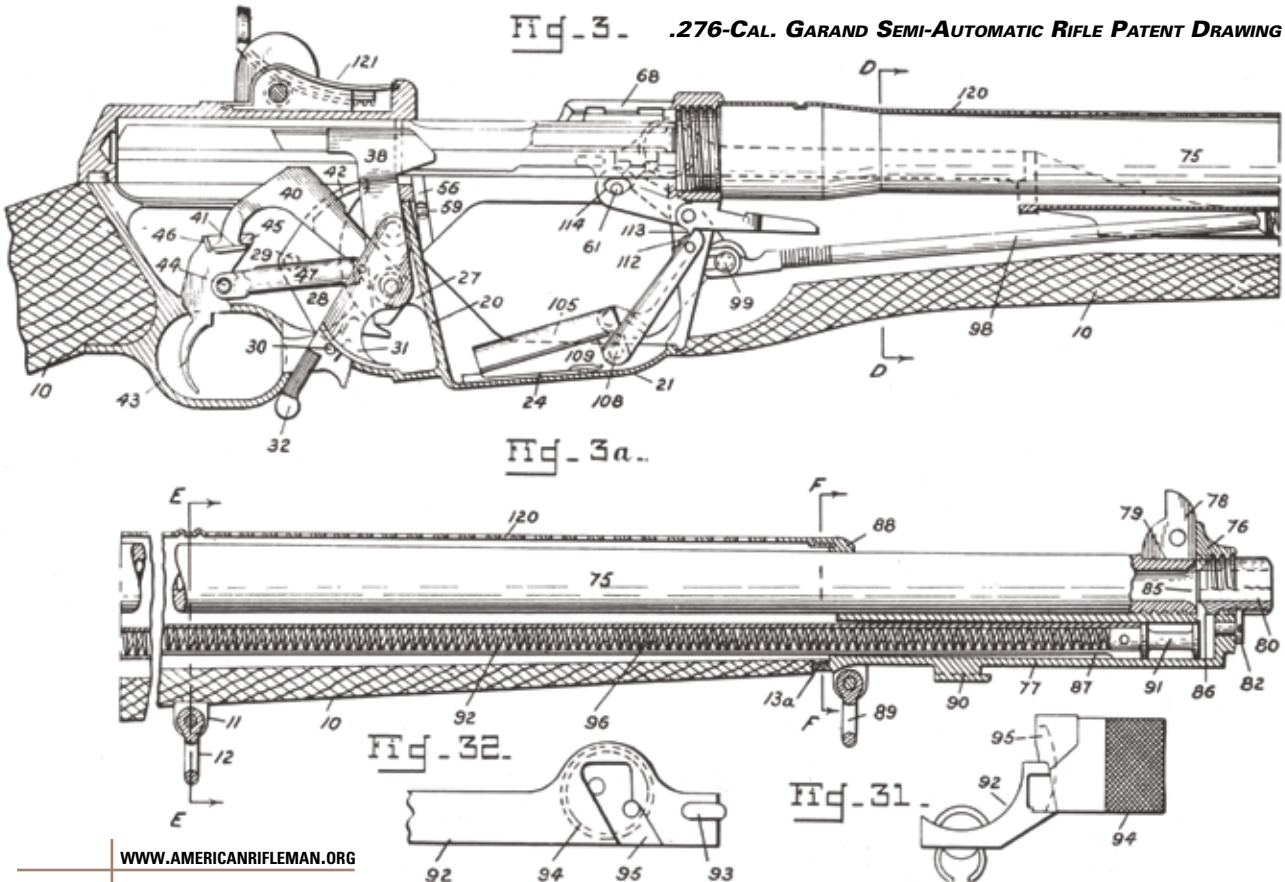
Even though most ordnance officers involved in the service rifle development preferred the .276-cal. cartridge, there was still some reluctance to completely abandon the proven .30-'06. The Ordnance Board requested that Springfield Armory fabricate 20 T3 Garand rifles in .276 cal. and incorporate some of the suggestions made during previous testing. Interestingly, the board also ordered a single rifle of this same type but in .30-'06. The improved .276 Garand rifle was designated as the T3E1. A slightly modified version was developed as the T3E2. The new .30-cal. version of Garand's newest rifle was designated as T1 (not to be confused with the .276-cal. Pedersen T1 rifle).

On the T3E2, the safety was in the front of the trigger guard, but not of the shape as finally adopted in 1936.

The U.S. Army Infantry Board tested the improved .276-cal. rifle at Fort Benning, and the results were compared with the previous tests of the Pedersen .276-cal. T1 rifle. The final test report stated that the Garand rifle was "… the best semiautomatic rifle … tested to date." The report also opined that "… a rifle of caliber .276 is preferable to one of caliber .30 for use as the basic Infantry weapon."

Given the clear preference of the Garand over the Pedersen rifle after the 1929 tests, Pedersen's contract with the government was cancelled pursuant to its terms. Pedersen was undoubtedly disappointed that his rifle didn't fare very well in the extensive testing. Nonetheless, he felt the rifle still possessed a great deal of merit and explored the possibility of its adoption by several European nations, including Great Britain. Although limited numbers of the Pedersen rifle were manufactured by Vickers, and a few were fabricated for tests in China and Portugal, no government accepted the rifle as a standard military arm.

With the Ordnance Dept.'s selection of the .276-cal. T3E2 Garand rifle over the Pedersen rifle, plans were made to proceed with its further development as the



.276-Cal. Garand Semi-Automatic Rifle Patent Drawing

next U.S. military service rifle. Funds were appropriated for the fabrication of 125 T3E2 .276 rifles for "limited procurement." It seemed only a matter of time before the American military had a new semiautomatic service rifle and a new .276 cartridge.

Before this could be accomplished, however, fate soon intervened in the personage of Army Chief of Staff General Douglas MacArthur. MacArthur was uninterested in the new .276-cal. cartridge, and he expressed his feelings in an early 1932 letter to the adjutant general. His letter read, in part: "… approval of the action recommended in this case would seem to definitely commit the American Army to Caliber .276. It is not considered that this is wise or desirable. We have already in our war accumulations, as well as our current affairs, committed ourselves to the larger caliber .30. To make this change will introduce an element of chaos, confusion and uncertainty which, magnified under war conditions, would more than counteract the beneficial effect of any semiautomatic rifle."

General MacArthur went on to question the actual advantages of the .276-cal. cartridge over the .30-'06. He further "suggested" that the idea of chambering the new Garand rifle for the new .276-cal. cartridge be scrapped and a .30-cal. version of the rifle be developed instead. The dire financial conditions of the early 1930s undoubtedly played a part in MacArthur's decision as the government would have been loathe to expend precious funds on new ammunition when there was a large supply of perfectly serviceable .30-cal. ammunition on hand. As might be expected, a "suggestion" from the chief of staff resulted in conformance to his wishes, and any further development of the .276 cartridge was soon dropped.

Since he had originally designed his rifle as a .30 caliber, and a .30-cal. version had already been

Inventor John C. Garand fires his primer-actuated semi-automatic rifle at Springfield Armory in 1920.

The .276 Pedersen cartridge (r.) made a lot of sense, but Army Chief of Staff General Douglas MacArthur "suggested" the .30-'06 Sprg. (far r.) remain as the standard U.S. cartridge.

fabricated, this last-minute change in plans didn't cause undue problems for Garand. A slightly improved version of the .30-cal. Garand T1 rifle, the T1E1, was manufactured and thoroughly tested at the Aberdeen Proving Ground in early 1932, and it performed in "… a highly satisfactory manner."

A few minor changes resulted in the development of the .30-cal. T1E2 rifle, and $80,000 was appropriated for the procurement of 80 of them from Springfield Armory. Termed "Model Shop" rifles, they were intended for extensive testing and evaluation before going into mass production.

On January 6, 1936, the government adopted the "U.S. Rifle, Caliber .30, M1" as the new U.S. military service rifle. Production began slowly as Springfield Armory tooled up for manufacture, and the first 40 M1s were assembled in August 1937. Refinements, including an improved gas system adopted in 1939, were made throughout the production run, but Garand's basic design remained remarkably intact. By World War II, the M1 rifle was firmly entrenched as the standard American service rifle, and Springfield Armory and Winchester Repeating Firearms Co. made many during the war. Later, Springfield Armory, Harrington & Richardson Arms Co., and International Harvester Co. put the rifle back into production in the early 1950s during the Korean conflict. It remained the standard U.S. military rifle until the adoption of the M14 in 1957.

Even after the adoption of the M14, the M1 continued to see widespread use for a number of years. Almost 6 million M1 rifles were eventually manufactured, and it is one of the most iconic and best-known rifles in the world. The M1 rifle has been referred to as the "Garand" rifle from the time of its inception through today. Although this term was never an official designation, it is nevertheless fitting that the M1 rifle be synonymous with the name of its inventor.

Its one-time rival, the Pedersen rifle, is now but a footnote to ordnance history and is virtually unknown to many people today. It has been suggested that perhaps the Garand rifle was selected over the Pedersen rifle because John Garand worked for a lot less than John Pedersen, and the government would not have to pay a royalty on the manufacture of Garand rifles. Such considerations likely played little or no role in the decision, as the Garand was clearly superior to the Pedersen as a military service rifle. Its subsequent performance on countless battlefields over several decades makes it abundantly clear that the U.S. military made the right decision.