

With the decision in 1840 to go to a percussion system of ignition for U.S. muskets, it became imperative to assay the situation as it existed at that time. In order to facilitate this, as you all know, muskets were broken down into four classes: the first class being those made since 1831, the second class being those from '21 to '31, the third class being those made from '12 to '20, and the fourth class being those made prior to 1812 and all unserviceable arms since then. Without going into detail with this inspection, it became obvious that the Federal Government had on hand in its armories in 1848, 586,513 muskets. Of these, 50% were the first class, 20% were the second class, and approximately 20% were third class, and approximately 10% were fourth class. On hand in private armories of contractors at that time were approximately 120,000 with the same percentages. It therefore becomes obvious when you review this situation, that the Federal Government was confronted with having approximately 300,000 first class completely serviceable flintlock muskets. This then is the background that militated for some system of converting these flintlock muskets to percussion.

These conversions may be grouped for discussion into two major categories, those being: (1) standard percussion cap conversions, and (2) mechanical primer systems. Of the standard percussion cap conversions, we see today three standard basic types. The first type conversion, which is seen on muskets, but more commonly on pistols, is the so-called "first method" or the French style in which a drum is inserted into the previous vent hole and a cone seat drilled into the drum with a new hammer fixed to the stripped off outside of the lock (Fig. 2). The "second method" or so-called Belgian type exhibits the same type external lock conversion, but the previous vent hole is filled with a brass plug and a new cone seat drilled into the top of the barrel with

a cone inserted (Fig. 3,4). The third type percussion cap conversion encountered is the application of a bolster to the side of the barrel above the lock plate (Fig. 5). This is seen in two types, either the flintlock barrel is removed in its lower portion and a new breech threaded into the barrel or in rarer instances, the bolster is brazed, or welded, onto the barrel covering the previous vent hole. The first and second methods of alteration were used primarily during the 1840's and early '50's. With the advent of the idea of rifling the barrel in these muskets and applying long range sites, the first and second methods became unserviceable due to the increased level of gas pressure and also due to the position of the cone on the barrel. These problems lead to the wide use of the third method or rebottomed barrels.

It should be pointed out that large numbers of class one and class two arms were converted by these several methods and proved to be very serviceable arms during the 1850's and the hostilities of the 1860's. There were many contractors for these conversions. It appears that a lot of this work was done in National Armories both at Harper's Ferry and Springfield, probably with Springfield leading in the volume produced. No exact figures of the numbers of muskets converted by the contractors or either the National Armories are available to me. It would appear that the most prodigious converter on a contract basis would be Mr. Hewes and Phillips who apparently converted something in the range of 20,000 class one 1816 muskets to the percussion system using the new breech method. There will be seen as you look over these muskets, many types of bolsters. Some of the bolsters have clean-out screws which probably indicate their confirmation to the types 1855-61. Others without the clean-out screw would lead us to believe that these conversions were accomplished during the early part of the Civil War probably prior to 1863.



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The U.S. Flintlock Musket as It Is Converted for Use of the Percussion System

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Figure 3
Cone conversion of
an 1816 musket

Figure 5
H & P conversion of
an 1816 musket

Figure 1
Flint hammer striker conversion
of an 1808 Musket



Figure 2
Colt conversion Drum type
of an 1816 musket

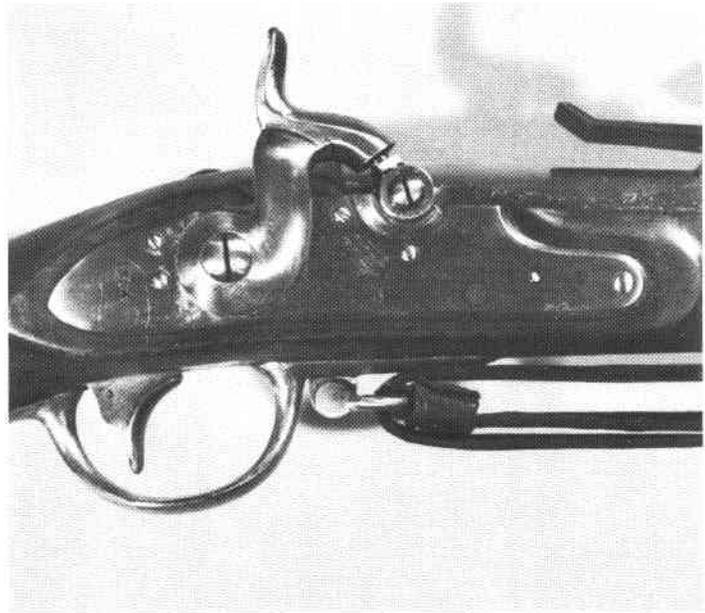


Figure 4
Cone alteration of
an 1816 musket

Figure 6
Butterfield alteration of
an 1816 musket

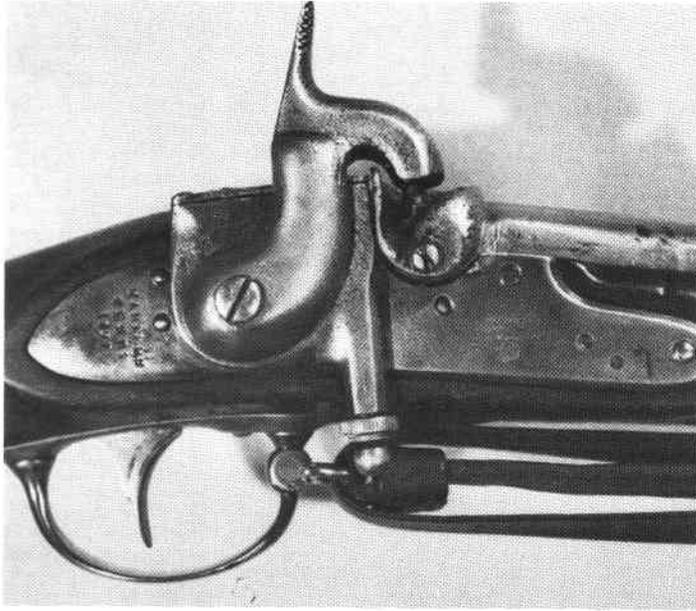


Figure 7
First Maynard alteration of
an 1840 musket

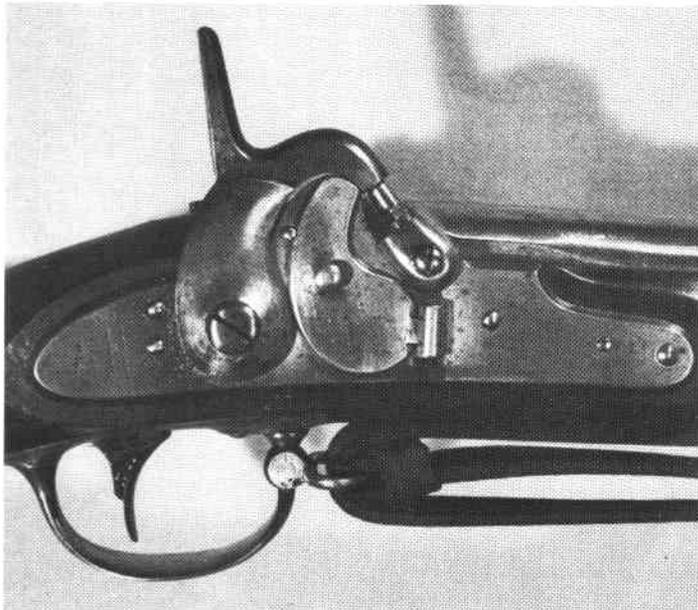
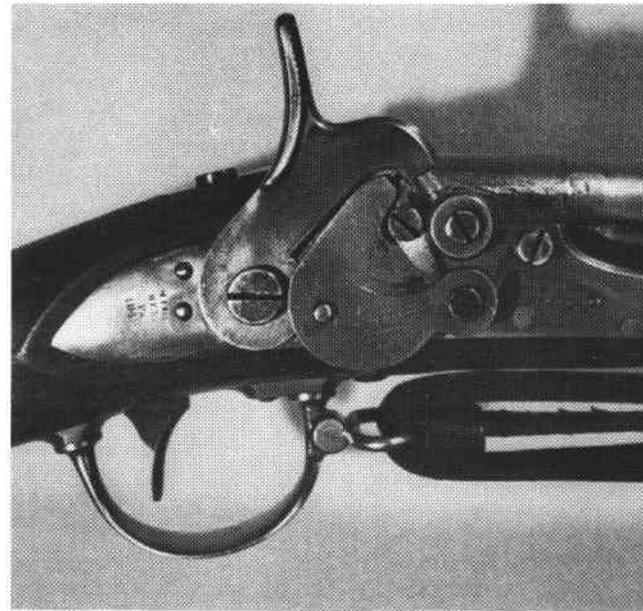


Figure 8
Remington Maynard conversion
(second type) of an 1816 musket.



Figure 9
Ward Primer alteration of
an 1816 musket

Most of these conversions, particularly the first two types, were reissued during the 50's and early 60's to troops with their original bayonets. There were, however, new bayonets made on the contract with H&P and with the mechanical primer systems, you will occasionally see a new bayonet. There is no doubt but what the standard percussion cap conversions were widely used during the hostilities of 1860 as evidenced by original parts for these muskets being among the battle field relics that are seen today.

As previously pointed out, a number of these

muskets during the middle 50's were also rifled and fixed with long range rear sites. Their performance left a little to be desired and since the new smaller caliber rifle muskets out perform them, this process was discontinued in the middle 1850's.

I'd like to now bring up the second major category of percussion alterations; this being the alteration to some form of a mechanical priming system. These arms are basically the Butterfield Pellet Primer (Fig. 6), the Edward Maynard alteration, type I (Fig. 7) and type II, the Ward Mechanical Primer (Fig. 9), and the Morse Conversion System.

Butterfield had at least two patents on his pellet priming system and was granted in January of 1859, a government contract to convert 5,000 muskets. It is extremely doubtful going on survival rates today that he ever fulfilled this contract and as a general rule, these conversions are seen on class II arms and sometimes on class III arms. It would appear to me from what I see that most of the mechanical priming conversions are seen on arms in class II or less. Butterfield conversions are seen today with the complete Butterfield primer unit on the outer side of the lock plate. There are a few conversions seen with a Butterfield numbering system throughout the musket, but exhibiting no Butterfield primer on the lock and never having had one. I have seen a couple of these muskets both of which exhibited a clean-out screw on the opposite side of the barrel from the previous vent hole. It is possible that Butterfield's mechanical priming system proved unserviceable for Infantry use and some of the later portion of his contract was filled out by including simply a new breech and a standard percussion cap cone.

The second type of mechanical primer conversions encountered are the conversions of Dr. Edward Maynard, the Washington dentist. Dr. Maynard's patent dated 22, Sept., 1845, based on a principle that small quantities of fulminate equally spaced on a narrow tape could be fed to the cone seat by cocking the hammer. The conversions to the first Maynard system seen by me have been on the U.S. Musket model 1840 which was a class I arm. Later in the 1850's, Remington obtained a contract to convert U.S. Muskets from flintlock to percussion using the pusher accuator Maynard system. These muskets were apparently very serviceable and Remington apparently did fulfill the 20,000 stand contract and these arms were widely used during the Civil War. A new bay-

onet was furnished by Remington with these muskets.

The third type mechanical primer system encountered today is the work of J. N. Ward, patented 1856, by Lt. J. N. Ward, U.S. Army. This musket conversion in essence was a mechanical accuator or feed lever in the hammer of the musket which fed an equally spaced fulminate primer over the cone where the hammer fell. This conversion is seen on both 1812 and 1816 muskets. These arms are rare. It is rather doubtful that over 150 were altered in this manner.

One final mechanical alteration, also involving alteration to breech loader, is the Morse system. In the year 1859-60, approximately 55 muskets were altered at the Springfield Armory to the Morse system using a metallic breech loading rim fire cartridge. These muskets had previously been rifled and sighted and converted to percussion apparently by the cone seat method. This type of system saw only very limited application and I know of no instance in which it was used. The Morse system was, however, applied to Confederate Carbines as you all know. These conversions are extremely rare and I have only seen, in the past fifteen years, one specimen and heard that one other exists. One final type of alteration from flint to percussion is seen rather infrequently today. There is considerable reservation in my mind that this is in any way a Military conversion, but this system involves the insertion of a striking device between the jaws of the flint hammer and insertion of a cone and a drum into the vent hole in the barrel. This striking device comes two ways. It comes the standard female striking type device or it comes as a male striking device into some form of fulminate place in the small hole in the drum. These would appear to be rather early conversions from flint to percussion and may well represent civilian alteration during the 1830's and 40's.

In closing, let me say this: let us remember that neither the U.S. Government, at either of its Armories, nor any of its contractors have ever made a reconversion. When you are dealing with a converted flintlock musket, you are dealing with a historical item that has been considered serviceable on at least two occasions. When you are dealing with a reconversion, you are dealing with an item whose historical significance has been greatly reduced. In closing, let me ask you all to help stamp out "reconversion".

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Figure 10
Morse conversion system.
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