SUPERIMPOSED-LOAD FLINTLOCK PISTOLS:
Three Examples of 18th Century Technology

By Matthew Schneiderman and John Burgoyne

We have collected and studied early [1] English firearms for decades, but we continue to be amazed by the surprises that world presents. In this piece, we offer you a group of highly unusual 18th century pistols. As always, we hope to entertain, but also to remind you of the remarkable feats of design and construction the firearms trade of that era was capable of.

For centuries, gunmakers and their customers had sought more than one shot from a gun without reloading. Pairs of guns or pistols, multiple chambers, or multiple barrels can provide this, but at the cost of more material and more weight. Superimposed loads provided a different path: two or more shots fired in turn from a single barrel. [2] Examples date from the 14th century, and clever gunmakers continued to explore this possibility well into the 19th.

Such firearms are very rare. Their costly and detailed manufacturing, and the need for careful and slow loading and cleaning, limited their appeal. There was also the ever-present danger of multiple discharges. [3] However, they do appear on the market occasionally, and we have three to show you, with three different designs.

Turn-off firearms, with barrels that unscrew for loading, are probably the most commonly found early breechloading system. Turning-off started in the 17th century, but flourished in the 18th. [4] This system lent itself well to superimposed loading, and our pistols all have turn-off barrels, though there were many other ways of constructing superimposed loads. [5]

Figure 1 - The pair of Louis Barbar pistols. Note the long breeches; the lug for the turn-off barrel key; and, on the upper pistol, the lever for rotating the pan.

We'll present photos and instructions for our three examples.

A PAIR OF FLINTLOCK, SUPERIMPOSED-LOAD, SIDE-HAMMER QUEEN ANNE PISTOLS BY LOUIS BARBAR, LONDON, THE 1720S. (FIGURE 1.)

First we unscrew the barrel. In a conventional single-shot turnoff pistol, the breech presents a premeasured cavity for the powder (without the need for a measure or a ramrod) and a cupped surface to seat the ball at the verge of the breech, not inside. (Figure 2.) The Barbar superimposed-load breech is larger and totally open (Figure 3.), allowing the insertion of the rear ball for the second shot inside. The breech is precisely constructed to seat the ball in exactly the right spot, leaving room for powder behind it—but that powder comes later. We follow the ball with a wad (to help protect the rear charge from flashback ignition), a measured powder charge for the front (first) shot, and then the front ball. We screw the barrel back on. In all turn-off firearms, the ball is slightly bigger than the bore, giving a tight seal and requiring a key around the barrel or into the muzzle to turn the barrel on. Because of heating and fowling, the key was also used to turn off.

Figure 2 - The breech opening of a conventional turn-off pistol (also by Louis Barbar). The cavity is filled with powder, and the base of the ball rests on the concave opening. The barrel will screw on tightly over the ball.

Figure 3 - The breech opening of the Barbar superimposed load pistol: larger, open, and much different from Figure 2.

But where's the powder for the second (rear) shot? To load this, we must unscrew the trigger guard, providing access to the breech chamber behind that second ball. (Figure 4.) We load the powder (the space

Figure 4 - The Barbar's trigger guard unscrewed, showing the cavity for the powder charge behind the rear (second) ball. Note "Barbar" below the frizzen spring; the maker's mark (LB) and London proof and view marks; and the lug for turning off the barrel with a key.

measures just the right amount), and then screw the trigger guard back into the breech. The threaded end of the trigger guard seals the chamber and prevents blow-out. The pistol must be loaded in this order—loading this rear chamber first would let powder track forward and risk a double discharge. The weapon is thus readied to fire.

The shots are chosen by a levered/rotating pan. The first position shows the standard touch hole open leading to the second (rear) shot. We add priming powder, and rotate the pan using the lever. (Figure 5.) How does the priming stay in the pan when it's turned? The pan in Figure 5 is on the outer surface of a cylindrical drum that rotates within a cylindrical space. As it rotates, the priming is held in place against the wall of that space. Figure 6 shows the rotation of the lever and pan in progress. The second position covers the standard touch hole and leads the flash forward to the first (front) shot via a forward ignition channel. We add more priming powder to this part of

Figure 5 - The pan in position for the second (rear) shot, with its touch hole in standard position. Priming this pan would be the first step.

Figure - 6 The pan in the midst of rotating, the next step. The lever is more clearly visible.

Figure 7 - The pan in position for the first (front) shot . The small trough leads forward to the front touch hole. Priming this pan would be the next step. One could then fire the first shot

the pan (Figure 7.), which is formed from a different part of the outside surface of the drum. Once the first shot is fired, the drum is rotated back to expose the rear touch hole, with the initial priming still in place.

Though not broken or messed-with, the Barbars are clearly worn and show significant use, reassuring us (and presumably their original owner) their superimposed load system was reliable and safe in practice.

A Flintlock, Superimposed-Load, Boxlock Queen Anne Pistol By John Waters, Birmingham, 1777 (dated by silver hallmark). (Figure 8.)[6]

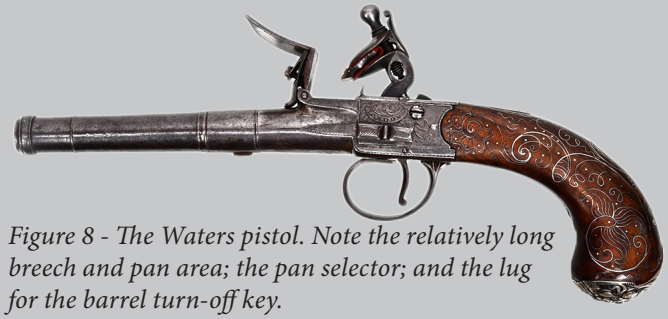

Figure 8 - The Waters pistol. Note the relatively long breech and pan area; the pan selector; and the lug for the barrel turn-off key.

Like the Barbar pistols, the Waters has an unusually long and deep breech.

When the barrel is unscrewed, two balls can be placed inside. (Figure 9.) The order is: powder (measured), rear ball, patch (to protect the rear charge

from flashback),powder, and front ball. The front ball would protrude from the breech, and the barrel would be turned on tightly over it with a barrel key.

The action requires two pans. Both are primed initially. Moving the left-side selector forward covers the rear pan (Figure 10.) The flash path of the front touchhole angles forward and runs a remarkable distance through the wall of the breech, entering the breech above the front powder charge.

Figure 9 - The Waters' larger breech opening, into which two balls and powder charges are placed.

Figure 10 - The Waters' oval front pan for the front (first) shot is ready. The rear pan is covered. Note that the pan selector has been moved forward.

Think of the skill required to create that channel. After the first shot, moving the selector backwards uncovers the primed rear pan, with the touchhole pointing straight down to ignite the second (rear) charge. (Figure 11.) (No priming remains in the front pan.) Between shots, we cock, move the selector backwards, and then close the frizzen, but we don't have to reprime or reload. Note that the frizzen covers both pans.

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Figure 11 - The Waters' pan selector has been moved rearward. The square-bordered circular rear pan is now revealed, ready for the rear (second) shot.

Flintlock, Superimposed-Load, Boxlock Turn-Off Pistol Marked Jarvis (Probably Charles Of Birmingham), The 1780s. (Figure 12.)

Figure 12 - TThe Jarvis pistol. Note the two-part barrel, with the lug for turning off the rear section.

This particularly odd pistol has a barrel that turns off in two parts. It is the only turn-off design requiring both a muzzle key (to remove the front half of the barrel) and a barrel key (to remove the rear half). (Figures 13, 14, and 15 give different views of this.)

Figure 13 - Both barrel sections off. Note the front section is notched for a muzzle key. Both types of keys are shown

Figure 14 - In a standard turn-off pistol, the threads are part of the breech. Here, they're part of the barrel sections. Note the hole in the rear threads which lines up with the front touch hole.

Figure 15 - The barrel assembled.

To begin, we load a measured powder charge for the rear (second) shot into the breech (open like the others), followed by the rear ball. We then screw on the rear half of the barrel (using the barrel key). The ball is the diameter of that barrel segment (and smaller than the breech it screws into), so the act of screwing that barrel on seats the rear ball tightly and prevents any flashback to the rear charge. We then repeat, loading a measured powder charge for the first (front) shot into

the rear half of the barrel, followed by the front (first-shot) ball. Screwing on the front half of the barrel, and tightening it with the muzzle key, seats the front ball tightly in similar fashion.

The tap lever on the left side rotates the pan. (Figure 16.) Other "tap action" pistols of this era [7] used a tap lever to select among two or more barrels in various configurations.[8] In the Jarvis pistol, it's used to select the first or second shot. With the handle facing back, the front touch hole flashes forward to the front (first) charge. (Figure 17.)With the handle facing down, the rear touch hole flashes straight down to the rear (second) charge. (Figure 18.) Note that we would not have to reprime for the second shot, as the revolving breech contains two charges in the same fashion as either the Barbar pistols or a conventional over/under tap action pistol. Part of the second shot priming flash goes down the still-exposed front touch hole, but only one powder charge remains. [9]

Figure 16 - The tap lever on the left side of the Jarvis pistol.

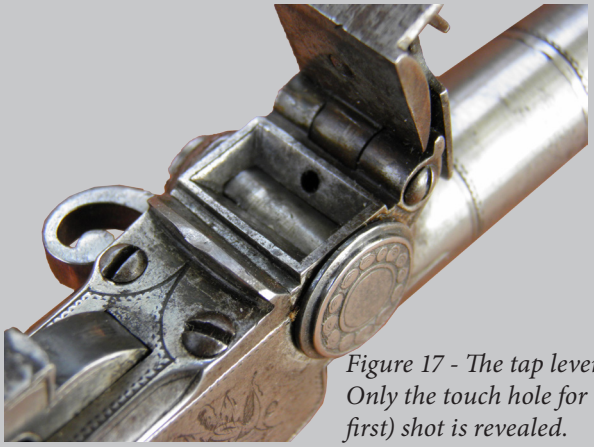

Figure 17 - The tap lever rearward. Only the touch hole for the front (first) shot is revealed.

Figure 18 -The tap lever downward. The touch hole for the rear (second) shot is revealed. Some flash will enter the forward touch hole again, but with no effect.

Conclusion.

Clearly there were many ways of designing a superimposed-load pistol.

We've shown and described three, but there are certainly others. Whilst very rare, there are enough such firearms around to whet a collector's appetite.

Overall we've seen about a dozen examples like the Barbars, most by James Freeman of London in Barbar's era. They definitely worked, and enough were made for some to survive almost 300 years.

Boxlocks like the Waters and the Jarvis are even less frequently encountered. Difficulty of manufacture, and perhaps the greater ease with which two single shot pocket pistols could be carried, might explain this. The Jarvis and its cousins (see note 9 below) in particular were probably trickier to load and fire without mishap.

Current collectors tend to view superimposed-load firearms only as bizarre oddities. However, they were part of a very broad range of products manufactured, marketed, and sold to willing customers over centuries in numerous countries, in a highly creative and fiercely competitive industry.

Thanks to Dan Retting for the photos of the Waters pistol, and to Dana Williams (http://www.weaponscollector.com) and Brian Godwin for research help. John took the photos of the Barbar and Jarvis pistols, plus Figure 2.

As always, we welcome and encourage questions and comments, at mms615@yahoo.com and burgoyne@telus.net

Notes And References

1. In defining "early", we think of EARLY FIREARMS OF GREAT BRITAIN AND IRELAND, the great 1971 Metropolitan Museum of Art catalogue presenting part of the Clay P. Bedford collection. It focuses almost completely on flintlock and fulminate (mostly copper cap) ignition until about 1860, before the full ascendency of rimfire and centerfire.

2. The main book in this area is SUPERIMPOSED LOAD FIREARMS 1360-1860 by D. R. Baxter, South China Morning Post, Hong Kong, 1966. This work will fill you with wonder, and is well worth a look.

3. In the foreword to Baxter's book, Keith Neal describes a psychologically traumatic, three-shot simultaneous discharge from a superimposed load percussion rifle: "a roar like thunder, and the rifle almost flew out of my hands." (Rifle and shooter survived.) In the 1860s, ads and instructions for the Lindsay two-shot, double-hammer, superimposed load

percussion pistol reassured buyers that an accidental firing of the rear charge first (hence of both loads at once) was safe.

4. An essential book about turn-off firearms is John Burgoyne's THE QUEEN ANNE PISTOL 1660-1780, Museum Restoration Service, Bloomfield, Ontario, 2002. Queen Anne pistols featured the breech and frame fashioned from a single piece of iron, with the action integral with the frame. However, standard-sidelock firearms could also have turn-off barrels, and boxlock turnoff pocket pistols, flint and percussion, continued well into the 19th century.

5. All superimposed load weapons fire sequentially from one barrel, i.e. they do not fire a volley. Some, like our pistols, require maneuvering between shots: covering, uncovering, or rotating a pan; cocking; closing the frizzen. The others fire in "Roman Candle" fashion, needing only one initial ignition (and using special balls with holes through the center), with the flame from each shot moving backwards to the next shot behind it. The key feature of both types is no reloading required between shots.

6. The Waters pistol was described and discussed by John Burgoyne in "A Queen Anne Style Pistol Firing Superimposed Loads", Arms Collecting, Volume 36 #2 (May 1998), pages 39-45.

7. Why is this type of lever called "tap", and such pistols called "tap-action" (both now and also during their period of use)? The best suggestion: it's a metaphor from the then-omnipresent taps draining kegs holding beer and other liquids. (Stuart Mowbray, email of 9/17/2010.) The details of tap action construction and action, as used for both superimposed-load and multi-barrel firearms, are discussed in "A Pair of Egg Pistols Belonging to the Duke of York and a Note on the Tap-Action" by R. and P.A. Bedford, Journal of the Arms & Armour Society Volume VI #2 (June 1968), pages 31-37 plus Plates. In addition, see Stuart Mowbray, "How a Tap-Action Flintlock Pistol Works", Man at Arms Volume 32 #3(June 2010), pages 38-39. Matthew can supply scans of these on request.

8. Vertical, horizontal, triangle, square, diamond, and more!

9. A friend recently found a pistol just like the Jarvis, retailed by Love of Rugby (the English town, not the sport). Also, at the 2017 Baltimore Show, Matthew examined a remarkable superimposed-load turnoff carbine marked J. Benson London. It works exactly like the Jarvis, with a tap lever and a two-part barrel. However, there is no provision for a barrel key. Both the short barrel segment at the breech and the carbine- length second segment that includes the slightly belled muzzle are turned off with a (missing) octagonal key that clamps over each segment.