FROM JOKERS TO ACES – THE M1911 GALLERY PRACTICE PISTOL STORY

by Nicholas E. Combs

Arms collecting is not just possessing an artifact, it provides us with an opportunity to explore aspects of history which might otherwise be overlooked. It is a popular idea that each artifact has a story to tell and in many instances that is true. When two or more artifacts get together, well, the story becomes very interesting as you will see. This is their story and they are sticking to it.

Introduction

This article follows the story of four Model of 1911 (M1911) .22 caliber gallery practice pistols that spent over 25 years in development, from 1913 to 1941. The four models are: the Springfield Armory First Type, the Springfield Armory Second Type, the Colt Ace and the Colt Service Model Ace. Requirements for M1911 gallery pistols were issued shortly after the adoption of the M1911. The objectives for the development of the gallery practice firearm were to reduce training ammunition costs and improve marksmanship training. Acceptance of the M1911 Gallery Practice Pistol was difficult both culturally within the military and mechanically in modifying the .45 caliber format into a sub-caliber semi-automatic pistol. Beginning with service rifles in the late 19th century, the gallery practice concept proved successful enough that gallery practice firearms were in use through the 1970s. The enormity of the effort to emulate the M1911 in a .22 caliber gallery pistol is implied by the talent involved. The influencers behind the Gallery Practice Pistols were the major firearms experts of the day including: Browning, Thompson, Williams, Hatcher and Garand.

Background

The gallery practice concept was first developed for the United States Military in the late 1880s. This concept had three basic tenants; 1) provide less expensive training (cost of ammunition for subcaliber, i.e., .22 was 1/7 of typical standard caliber ammunition), 2) permit the use of compact ranges without potential over penetration, and 3) permit the training of new recruits in manual of arms and marksmanship without the recoil and noise of standard ammunition. As noted by Lt. Col. Julian Hatcher in one of his many articles,

> *"Now there are good and bad ways of teaching anything, and the bad way to teach pistol shooting is to place a high-power loaded gun in the novice's hand and a target in front of him and let him go ahead as though he were entirely familiar with what he is doing. ... his anticipation of the explosion and disturbance which he knows will come when the trigger is pulled will cause a nervous strain which is very likely to result in flinching. ...Experience has shown that the way to overcome these difficulties and lay a solid foundation for good pistol marksmanship is to progress from "dry shooting" or snapping practice with the empty gun, to actual target practice with .22 caliber cartridges."*[1]

The first military employment of .22 caliber training arms was initiated by the Navy in 1889 with the conversion of 100 Remington rolling block Model 1870. The conversion rifles were produced by Springfield under license from Remington and modified to .22 caliber by Winchester Repeating Arms.[2] While the Remington conversion was not widely accepted, a much more ambitious effort was initiated by the Army in 1905 to convert Model of 1898 Krag rifles to .22 caliber; approximately 840 rifles were converted.[3] These conversions proved to be problematic with accuracy and were discontinued after a short service life due to the adoption of the Springfield U. S. Rifle, Caliber .30, M1903 as the standard arm of the Army. With the new Springfield '03, came the desire of the Ordnance Department for a gallery practice rifle, a .22 caliber conversion for the new rifle.

Shortly after the adoption of the Springfield Model 1903, the Army developed a .22 conversion based on the design by Majors Hoffer and Thompson. The conversion is conventionally known as the 'Hoffer-Thompson' of which about 15,000 were produced.[4] This conversion differed from previously developed gallery arms in that it utilized a cartridge adapter in the shape of a .30-06 cartridge fitted to accept a .22 cartridge. The adapter cartridge was sized slightly smaller and the chamber slightly smaller to preclude the insertion of a standard .30-06 cartridge into the .22 caliber gallery rifle. All other aspects of rifle operation and function of the rifle were identical to the service issued model.

Development of the Model of 1911 Gallery Pistols

The Army acceptance of the Colt Model of 1911 started the process of developing gallery practice pistols to emulate the Model of 1911. There were several ambitious attempts to provide a suitable training device. Five firearms industry leaders added their expertise in the gallery pistol development:

- John Browning (M1911 developer)
- John T. Thompson (Chief Ordinance Board for M1911)
- DM 'Carbine" Williams (floating chamber development)
- Julian Hatcher (promoter for the gallery pistol concept)
- John C. Garand (consultant for development issues)

This article presents four Model of 1911 .22 caliber gallery pistols contenders. The four models here are the Springfield Armory First and Second Type, the Colt Ace and the Colt Service Model Ace (Figure 1).

The development of the gallery pistol was proposed by Maj. John T. Thompson Ordinance Department, in June 1913.

> *...As the automatic pistol, caliber .45, model of 1911, is now being issued to the service, the Chief of Ordnance directs that an effort now be made to design or procure a pistol firing the .22 caliber gallery practice cartridge, and having the same weight and balance as the service pistol...*[5]

By August 1913 Springfield Armory had responded that such a pistol had been designed and was being manufactured. Examples would be ready for testing in September 1913. Thus, the Springfield Armory Gallery Practice Pistol, First Type made its debut, Figure 2.

Figure 1. The Gallery Practice Pistols. Left to right: the Springfield Armory First and Second Type, the Colt Ace and Service Model Ace.

Figure 2. Springfield Armory First Type

Subsequent to the First Type, a second type was developed, based on a design from Mr. J. H. Carl, and manufactured at Springfield as the Springfield Armory Gallery Pistol Second Type as shown in Figure 3.

Figure 3. Springfield Armory Second Type.

As Springfield Armory was producing the First and Second Type models, there were other entrants into the 'competition'. Seven interesting concepts and ideas were proposed:[6]

- Springfield Armory had a "Flashlight Pistol". A tube with a small bulb and a lens was placed in the barrel and when the trigger completed the electrical circuit, it projected a light dot onto the target. It presented a good likeness to a M1911.
- Lt. H.J. Knerr submitted a proposal similar to the Springfield First Type but with some operational differences. The barrel had an eccentric bore, located at the 3 o'clock position. Although not adopted by the military it later was manufactured and sold on the civilian market by Sedgley. This proposal had good similarity to the M1911.
- Experimental Gallery Pistol. The source of this pistol is unknown. It very much resembles the Springfield Armory Second Type.
- A variation of the Hollifield Dotter was proposed. The Hollifield Dotter is a spring-loaded rod placed in the barrel of a rifle or pistol. A paper target is placed in front of the muzzle. When the hammer strikes the firing pin, the rod is projected out of the muzzle and a mark is recorded on the target. Over 2,000 were procured by the military. It was similar to the M1911 as it used the standard pistol.
- A Photo Cell Trainer made an attempt to sway the Army, similar to the Flashlight Pistol. It really did not have much resemblance to the M1911.
- A Browning design that resembles a mating of a M1911 and the Savage 1907. Browning produced one example and moved on to other projects.
- A Colt Pre-Woodsman design. This had little resemblance to the M1911, but it was a winner in other regards. Approximately 170 pistols were procured by the Marines and the Ordnance Department in 1918. It was officially named the Model S (aka Target Model) and later became the Colt Woodsman.

Further explanation of these designs can be found in Edward S. Meadows book titled *US Military Automatic Pistols* 1894-1920. None of these attempts to meet Army requirements proved acceptable for a variety of reasons and no models were chosen for further evaluation or development. It is appropriate to note that the Colt Model S (later Woodsman) was utilized during World War II by the military for training.

By January 1924 the Army became interested in the development of a gallery pistol by the Colt Patent Firearms Company.

Army examination of the test articles supplied by Colt resulted in favorable recommendations. This would lead to the development of the Colt Ace and subsequently the Colt Service Model Ace (Figure 1, right two examples).

The Chase Begins -

Springfield Armory Gallery Practice Pistol, First Type

Figure 4. Springfield Armory First Type.

In June 1913, the Ordinance Department directed Springfield Armory to develop a gallery practice pistol to emulate the new Model of 1911 pistol. Figure 4 shows the First Type. By September 1913 a test model was provided to the Army. The design is described as follows (Figure 5):

- The barrel is consistent with the .45 barrel with an eccentric bore of .22 caliber. Chamber is slightly smaller to preclude insertion of normal .45 cartridge.
- Use of cartridge adapter will permit use of regular magazines.
- Barrel will have same weight and balance as regular.
- Automatic eject and feeding will not function. Each round must be manually cycled.
- All other components and aspects of the Model of 1911 remain intact.

The approach of using a cartridge adapter was first demonstrated with the Hoffer-Thompson conversion of the M1903 rifle.[7] Note that the slide is a standard M1911 slide. The excentric bore of the barrel is seen in Figure 5 (bottom, center and right).

In October 1913 test samples were sent to the School of Musketry, Ft. Sill, Oklahoma. "*With this pistol it would simply require the furnishing of a .22 cal. barrel, extractor and the necessary cartridge holders to change any pistol in the service into a .22 cal. pistol.*"[8] By December 1913 favorable results were reported to the Ordinance Department.

1. The ... gallery pistol presents the following advantages:

a.) The absence of recoil, will, to a great extent, do away with flinching on the part of the recruit and will make it much easier to determine the exact nature of errors in aiming and trigger squeezing.

b.) The reduced cost of ammunition will permit a greater amount of firing.

It is recommended that the gallery practice pistol ...be issued to the service.[8]

Staying on what appears to be a fast track, the Ordinance Department ordered 25 prototypes to be supplied for field testing in January 1914.[9] These prototypes were ready in April 1914 and issued to the following field units in May 1914: Ft. Meyer, Ft. Ethen Allen, Ft. Ogelthorpe, Hawaiian Dept., Vancouver Barracks, and Frankford Arsenal.

...There has been devised by this department a method of converting the automatic pistol, caliber .45, into a gallery practice pistol. ...25 automatic pistols have been converted... and issued to the regular service for test and report. These pistols cannot be fired (semi-) automatically.[9]

Figure 5. First Type magazine and cartridge adapter; the adapter is the silver object between the standard .45 and .22 cartridge (left); barrel and slide (top right); barrel, adapter and bullets (bottom right) and muzzle configuration (center bottom).

Figure 6. First Type components.

By November 1914 the test results were analyzed and comments were not favorable. Complaints included: not (semi-) automatic firing (each firing required the slide to be manually cycled), the pistol lacked accuracy, there were failures to feed, occasional failures to fire, a failure to extract (resulting in jams) and failure to eject. Additionally, operation of the slide was 'hard' and lack of 'automatic' cycling was noted as a major detractor. Figure 6 illustrates the major components of the First Type, only the barrel and the cartridge adaptor are unique, all other components are M1911.

Figure 7. Springfield Armory Second Type.

In January 1915 the Ordinance Department directed Springfield Armory to discontinue the First Type project based on the development at Springfield Armory of a semi-automatic gallery practice pistol, the Second Type. *"...In view of the fact that a semi-automatic .22 caliber pistol is being experimented with at the Springfield Armory, no change will be made in the construction of the gallery practice pistol equipment reported upon*."[9] In other words – stop work on the First Type! Although this initial attempt to utilize the maximum amount of the service model components was not successful, the approach will be revisited in coming years.

Springfield Armory Gallery Practice Pistol, Second Type

The Second Type, seen in Figure 7, is a semi-automatic gallery pistol based on a design submitted in January 1914 by J. H. Carl to Springfield Armory.[10,11] Testing of the prototype submitted by Mr. Carl proved satisfactory in meeting the objectives of a gallery pistol of the Model of 1911. Major features of the design, shown in Figure 8, are:

– A unique 'slide' configuration, breech casing containing the barrel, breech bolt and recoil spring. Barrel is integrated into the non-reciprocating 'slide'.

– A unique magazine.

The distinctive sculpting of the slide shown in Figure 8 (bottom) was done to reduce the weight and help maintain the balance to emulate the M1911 in .45 caliber. "*The* (semi-*) automatic pistol, caliber .45, Model of 1911, modified so as to use cal. .22 ammunition... has been received at this Armory and tested. This pistol appears to function very satisfactorily*..."[10]

In May 1914, the pistol was sent to the School of Musketry for additional testing. Some mechanical issues were identified and attributed to the prototypical nature of the pistol. It was the opinion of the School of Musketry that these issues could be easily remedied. A favorable recommendation was forwarded to the Ordinance Department.[12] Although there was some concern by the Ordnance Department concerning Mr. Carl's design patent, it was concluded that there were no specific new functions in Mr. Carl's design that would be patentable. Therefore, the Ordinance Department proceeded to use the design and instructed Springfield Armory in August 1914 to manufacture 20 units: "*...inaugurate*

Figure 8. Second Type M1911 reciprocating bolt, recoil spring, ejector and non-reciprocating slide (top), muzzle configuration bottom left) and receiver, modified magazine, and slide.

the manufacture of 20 gallery practice pistols after the design of the pistol submitted…"[12]

On the forward end of the bolt shown in Figure 8 (bottom right), there is a small 'A'. This A is also found inside the slide (top image). A total of 30 units were produced, all having the caliber (five with .22 short or twenty-five with .22 long rifle) and a serial number marked on the right side of the slide. This pistol in Figure 7 has no such markings. Potentially, this example of the Springfield Armory Second Type is one of the un-numbered prototypes.

The August 1914 order was amended in October 1914 to reduce the order from 20 to 5 units. By May 1915 five pistols had been completed. The letter from Springfield Armory to the Ordnance Department stated; "*…have been completed…. The design of Mr. Carl was not followed in the design of these pistols, and they are designed to operate with cal. .22 short, whereas Mr. Carl's pistol operated with the .22 long rifle cartridge only*."[13]

In August 1915, five units in .22 short were sent to the School of Musketry, Ft. Sill, Oklahoma for testing. The results of testing were favorable. Testing revealed some minor mechanical and ammunition issues that were addressed.

Subsequent to the successful testing, the Ordinance Department ordered 25 units for field testing by "*organizations under service conditions*." A recommended change to the cartridge from .22 short to .22 long rifle was ordered in August 1916.[14] Work on the 25 units in .22 long rifle continued until May 1918. Springfield Armory was directed to cease work on the gallery practice pistols and concentrate on production of Model 1903 rifles due to the requirement for rifles to support troops in World War I. After the conclusion of World War I, LtCol. Julian Hatcher requested that Springfield Armory resume the gallery pistol project. By July 1919, the 25 units had been completed.[15] Test units were shipped to the Infantry School, Camp Benning, Georgia, and to Ft. Riley, Kansas. The following four years witnessed numerous design improvements and modifications.

The major malfunctions reported as of early 1923 included: failure to eject, failure to feed, magazine and recoil spring malfunctions. Despite the modifications made by Springfield Armory to correct the reported deficiencies, the Second Type was found not to be suitable in field conditions. With these results, Springfield Armory initiated a re-examination of the gallery pistol design. A report completed in November 1923 indicated that the Second Type design was not viable. The re-evaluation report outlined an approach that closely resembled the initial Springfield Armory First Type gallery practice pistol. Basically, the new design should have a standard Model of 1911 receiver, slide (modified spring for blow-back), and reduced length of recoil for the smaller cartridge.[16] This design was similar to the developing Colt design of a .22 caliber pistol. The Second Type project was officially "held in abeyance" in January 1924 in favor of the determining the suitability of the Colt design (the Ace).

Figure 9. Colt Ace Gallery pistol.

The Chase Ends (or 'missed it by that much')

Model of 1911 Gallery Practice Pistol Colt Ace

Colt's development of the Ace (Figure 9), was officially set by patent in December 1925 (Figure 10). Although demonstrated to the Army in 1924, there were no prototypes ready for Army testing or examination. The Army would have to wait for Colt's patent to be granted before having their own units to test. After the patent was secured, two units were provided to the Springfield Armory for examination and testing. "*The model pistol constructed by the Colt Co. has been demonstrated…and appears to be very successful."*[17] Over the next two years the demonstration articles were modified based on Army comments and operational recommendations. Ongoing collaboration between the Ordinance Department and Colt resulted in the 1926 modified model being submitted for testing. This model was the basis for the Ordinance Department

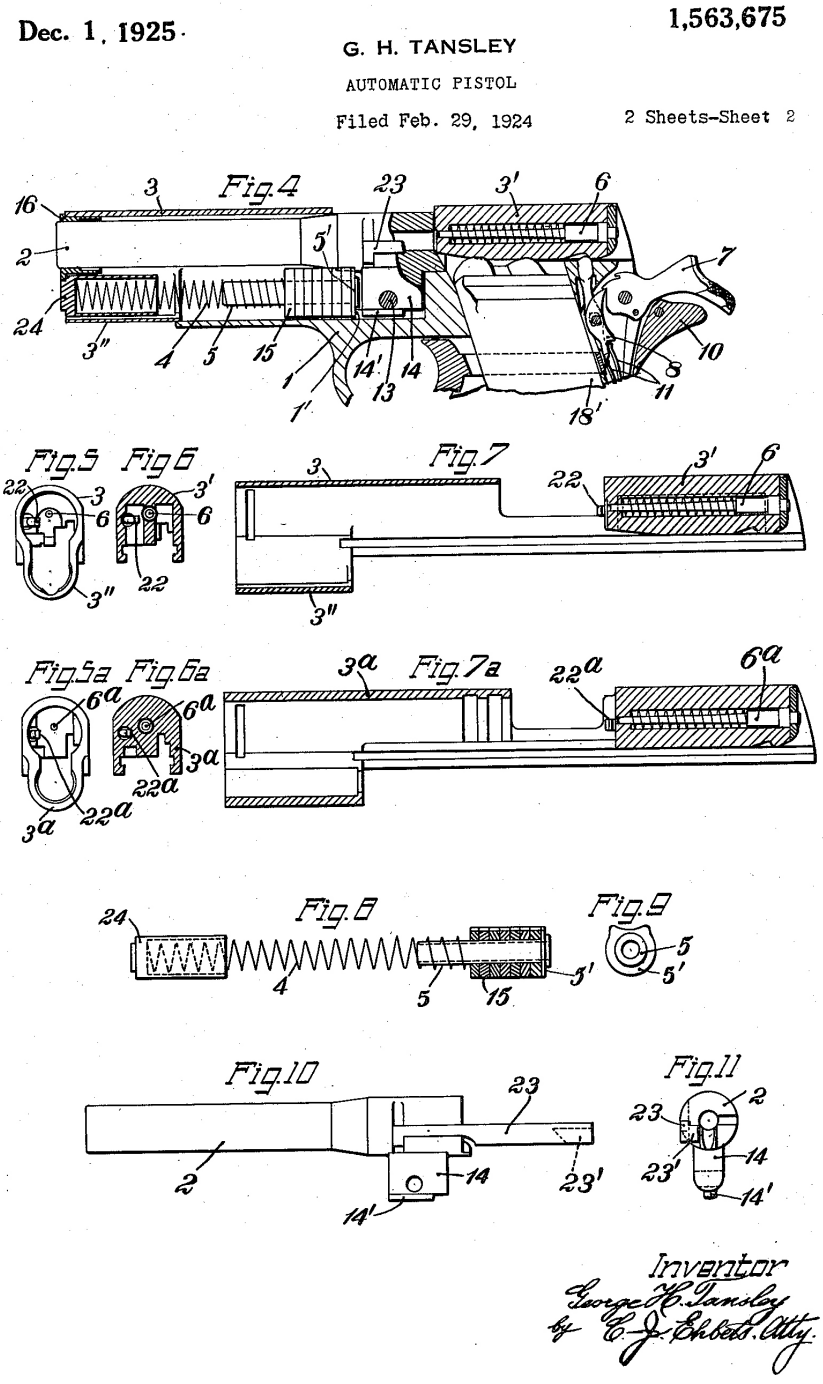

Figure 10. Tansley Patent number 1,563,675 for the Colt Ace Gallery pistol.

Fig 11. Colt Ace components.

Figure 12. Component variations from M1911 to Ace.

ordering 10 units for testing by the Infantry Board, Ft. Benning, Georgia; Field Artillery Board, Ft. Bragg, North Carolina.; and the Cavalry Board, Ft. Riley, Kansas for 1927.[18]

The 10 units underwent testing by the various units with some familiar problems. The report of March 1930 documented the problems encountered.[19] An issue that had occurred with all versions of the gallery pistols involved the manufacturer of the ammunition. Several brands worked sufficiently well, however, there were clearly some brands that would not perform in the gallery pistols. The Ace magazines were faulty in their ability to hold the seven rounds, feeding was better with only five rounds. The report stated that some parts were too fragile, "frequent breakages occurred". Despite these issues, the Ordinance Department sub-committee on small arms recommended that 15 example pistols for trials be shipped to the Cavalry, Infantry and Artillery Boards in March 1932. The Cavalry Board reported positive results, "*…first phases of instruction practice on the range is of great value in improving marksmanship…"*[20] Results from Artillery Board were not positive and they in turn did not recommend adoption of the pistol for service use.[21] The Artillery Board did not perceive any advantage of the .22 caliber pistol in training and found the additional cost of procurement of the pistols and ammunition unjustified. The Infantry Board supported the adoption of the pistol for service use.

After years of testing and modifications, in late 1932 the Army declined to adopt the Ace for service use. Although not "adopted" there was continued government interest by the Army, the Navy and the Coast Guard in procuring the Ace.[22] Originally conceived by Colt as

a government contract firearm, only 864 Ace units were procured by the government between 1931 and 1938. The main consumer was the civilian market with 10,935 units produced.[23,24,25] Figure 11 shows the standard configuration for a civilian model Ace. The significant differences between the M1911 and the Ace are the slide, the recoil spring, the magazine, the barrel and the ejector. These components can be seen in Fig 12. Note the absence of barrel locking lugs on the barrel and cutouts in the slide. The Ace barrel and slide are approximately ¼ inch shorter than the M1911.

Figure 13. Fixed chamber for the Colt Ace (top) and floating chamber for the Service Model Ace (bottom).

There are two distinctive Ace models. These are mainly characterized by the chamber; fixed or floating. Fixed, as the name suggests, the chamber is integral to the barrel whereas the floating chamber is a design that has the chamber separate from the barrel to allow a delayed reaction creating an impulse/recoil to simulate a heavier charge such as the .45 ACP. Ace models are usually found with the fixed chamber (Figure 13, top), whereas, later models, e.g., the Service Model Ace (Figure 13, Bottom), incorporated the floating chamber. An example of an advertisement extolling the virtues of this pistol may be found in Figure 14.

And the Winner is - Model of 1911 Gallery Practice Pistol Colt Service Model Ace

The decision by the Army to forgo the adoption of the Colt Ace was not the end of the gallery pistol story. Colt incorporated the "floating chamber" that had been developed by D.M. Williams (aka Carbine Williams). A prototype was tested by the Cavalry Board in mid-1932.[26] The opinion of the Cavalry Board was they were not interested. Despite the cool reception of the Cavalry Board, the Ordinance Department urged Colt to continue development of the "Williams" pistol.[27] It was in late 1933 that Colt submitted an improved pistol for Army testing. More testing was needed and the Army asked for additional pistols however Colt was hesitant

Figure 14. Colt Ace Gallery pistol advertisement.

unless some commercial or military contract and sales were assured. The Ordinance persistence paid off in early 1934 when Colt committed to production of the "Williams Pistol" (Figure 15).

Figure 15. Colt Service Model Ace.

The authority to procure 15 Service Model Ace with the Williams floating chamber was given in December 1935. Figure 16 shows the location of the floating chamber as removed from the barrel. Figure 17 is a copy of the Williams patent drawing to show some of the internal mechanical design. The pistols were delivered in March and issued to the Cavalry, Artillery and Infantry Boards for testing. The Cavalry Board had an interesting conclusion in their report.

"…the caliber .22 automatic is not only desirable but is a necessity to instruct properly…within the present limited ammunition allowances…(and) by the fact that almost all organizations own .22 automatic pistols…purchased from organizational funds, due to failure of the government to supply them." (emphasis added)[28]

The Artillery Board once again rejected the gallery pistol concept on the aspect that the pistol does not have sufficient value in training to warrant its adoption.[28] The Infantry Board reported that the pistol with Williams Floating Chamber be considered suitable for Infantry training purpose and that it be adopted as standard.[28,] The Chief of Ordinance requested permission to procure the Colt Service Model Ace based on the positive recommendations of the Cavalry and Infantry Boards and received approval from the Assistant Secretary of War in late December 1937.[28] The official designation of the pistol was to have been *U.S. Pistol, Caliber .22-.45, M1*.[28]

But wait! The Ordinance Department request for 3,500 pistols was not favorably considered by the Adjutant General as a required type or standard for military issue. Permission was not granted to procure the pistols. A second attempt to get the Adjutant General's approval was also rebuffed in April 1940.[29] Without formal adoption it was left to individual units to procure the Service Model Ace. Production at Colt continued until January 1943 when production of .45 caliber pistols took priority.

All told, the military ordered thousands of pistols known as *Pistol, Colt, Caliber .22 Ace* as it was described in TM 9-2200, '*Small Arms Material and Associated Equipment'*.[30] The manual went on to list the parts of the Gallery Pistol which are not interchangeable with the standard M1911A1. These parts include the: slide assembly, barrel, recoil chamber, barrel ejector, extractor, hammer, firing pin assembly, rear sight, front sight, magazine and recoil spring. Basically, every component in the slide was tailored to the .22 cartridge performance. Most all Service Model Ace were procured under a contract dated December 1944, with about 13,500 being ordered but fewer, approximately 12,000, eventually delivered by the end of production in 1945. Procurement of the Service Model Ace was accomplished using organizational funds (unit funds) through standard logistic procedures citing the TM 9-2200 as authority to procure the Service Model Ace and parts.

Figure 16. Service Model Ace components also referred to as the 'Williams Pistol'. Note the floating chamber at barrel breech.

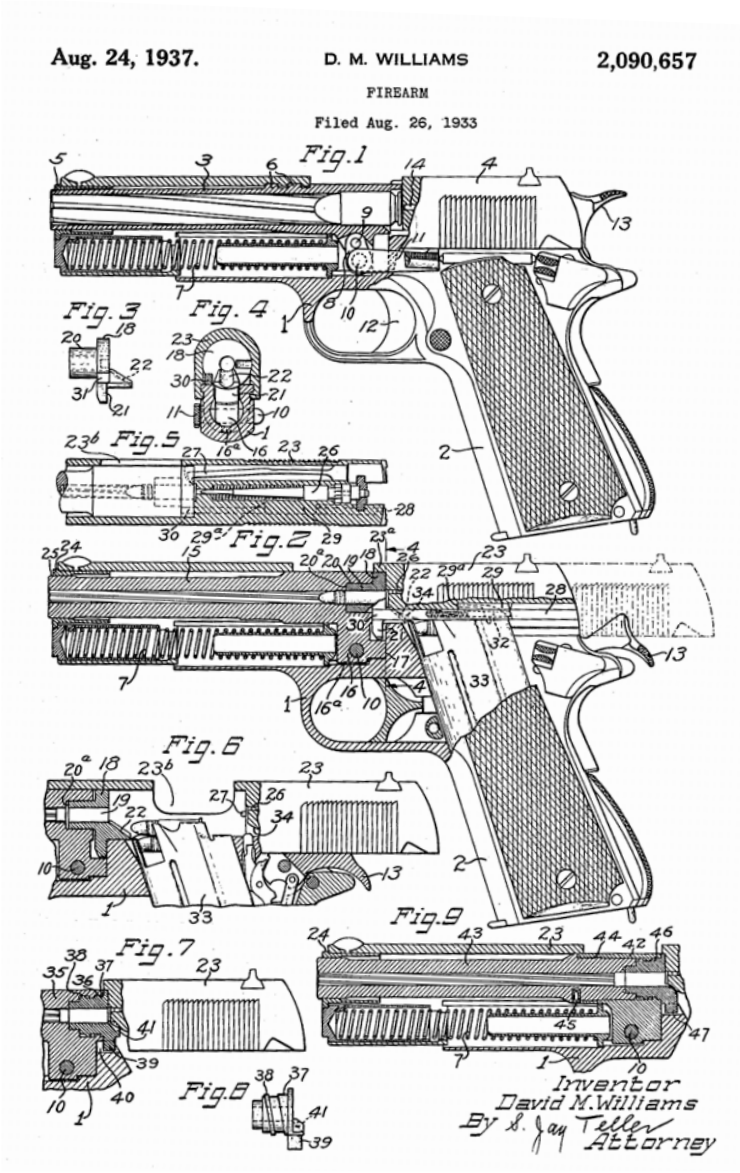

Figure 17. William's patent number 2,090,657 for the Service Model Ace.

Figure 18. Admiral Chester Nimitz at Pearl Harbor 1945 with a Colt Service Model Ace.

Figure 19. Colt Service Model Ace advertisement. Full page width, caption side

Conclusion

The stories these four artifacts tell is an interesting saga of how difficult it was to emulate the M1911 in a sub-caliber. The story also illustrates how the problems were overcome to produce the desired results. Calling on the talents of the industry, the Gallery Practice Pistol moved from the realm of Jokers to becoming Aces. Beginning in the 1890s the Gallery Practice Concept has proven to be valuable in training military personnel. New recruits with no firearms experience were introduced to firearms operation and marksmanship without the harsh recoil or report of standard ammunition. Gallery Practice firearms were widely used in World War I with service and civilian rifles and in World War II with both rifles and pistols. During World War II the Colt M1911 Gallery Practice Pistol was supplemented by High Standard pistols and the Colt Woodsman. Figure 18 is Admiral Nimitz with his Service Model Ace.

Although the Springfield Armory development effort was not successful in its entirety, there were significant contributions. The design team included notable firearms designers and military experts and provided early demonstration to major military units the practically of the M1911 Gallery Practice Pistol. Colt's success likely benefitted from the Springfield Armory efforts. Post-war, Colt assembled remaining leftover parts into Ace pistols for commercial sales. In the late 1970s, Colt had a short production run of the Ace. An old Colt advertisement is in Figure 19. Today there are several manufacturers producing Ace like 1911 pattern .22 pistols and conversion units.

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