

of thinking is all too often conservative, unimaginative, and ultimately ineffective training. Thus, the two types of risk need to be clearly defined in regulations and in practice. Then foolish risk-taking must be consistently punished, while prudent risk-taking must never be punished, regardless of the results.

The Army should also initiate a program of research on training realism to identify which risks really contribute to effectiveness. As an example, AR 385-63 currently establishes five meters over the heads of troops as the lower limit for overhead fire. It is reported, however, that one commander signed a waiver so that fire could be placed four feet above the ground. In this case, a standing soldier obviously could be hit — if he jumped up to avoid a rattlesnake, for example.

The key point is this: How high

over a soldier's head does a bullet have to pass for him to get the "snap" of the round and the realistic experience of being under fire? Can he hear or see the difference between a bullet fired four feet above the ground and one at, say, seven feet? If not, why assume the greatly increased risk of firing at four feet when firing at seven is just as realistic? The Army should conduct tests to determine this "realism threshold" and then make its risk decision accordingly.

There are literally hundreds of similar evaluations that should be made — and could be made fairly simply — that would enable a commander to know for sure, instead of having to guess, which risks are foolish and which are prudent.

Somewhere along the line, occasional losses arising from unnecessary risk-taking have caused us to drift into thinking that *all* losses must be

regarded as unacceptable. As a result, we have reached the point where training is one of our safest activities. But if that training does not satisfactorily prepare our soldiers for actual combat, then what good is it?

Many of our safety restrictions can be modified or eliminated with substantial benefit to realistic training but with little or no increase in risk to the soldiers.

The Army can achieve its combat readiness mission with reasonable safety to the public and its own personnel. Unfortunately, this won't just happen; the necessary actions must be taken *now* by the people responsible.

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Death of an Old Friend: The M1911A1 Pistol

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The search for a service pistol for the military forces of the United States began in the late 1890s. The subsequent adoption of the Model 1911 pistol was the result of 13 years of research and testing. It, along with its 1926 modification, the Model 1911A1, has faithfully served millions of U.S. servicemen during the past 74 years.

Its reign has not gone unchallenged, however. In fact, during the past 37 years there were many attempts to replace it or to change its caliber. These attempts, until recently, all failed.

But the justification for a change was never as strong as it became in 1984 — what with NATO standardization requirements, Congressional

debate, and a Joint Service Operational Requirement for a personal defense weapon. Today, as we now know, a new weapon has been adopted — the 9mm Beretta 92SB-F — and our old friend the 1911A1 is on its way out.

As it passes, though, it is only natural (because of the importance of a sidearm to an infantryman) to eulogize the 1911A1 by reflecting on its rich heritage.

From 1898 to 1900, a board of Army officers convened to consider the suitability of a .38 caliber Colt weapon for adoption as a new Army revolver and to consider, at the same time, the possible adoption of an automatic pistol. During the first year

the board concentrated on the overall improvements needed in the Army's revolvers. Then, a year later, the board members stated that Colt's Browning .38 caliber automatic pistol appeared to perform so satisfactorily that it should be considered suitable for adoption.

First, though, endurance tests were needed to determine any weaknesses in construction and what effects continued firing might have on the actual life of the pistol. Accordingly, on 19 February 1900, the board began tests in which the pistol was fired 5,800 times. The weapon was simply constructed, easy to operate, and more accurate than a revolver, and only minor mechanical problems showed up on

the test. Its bullet was found to be too light, however, and the board recommended a reduction in the bullet's velocity, an increase in its weight, and a change in the caliber of the weapon — from .38 to .41. The board did conclude that the weapon was still suitable, even without these changes, and that it had numerous advantages over the revolver.

The board also suggested that, before adopting the Colt Browning, the Army buy 100 of them for field trials. This suggestion was adopted, and the weapons were bought and shipped to units in Puerto Rico, Cuba, and the Philippine Islands, and then issued to serving officers in those units. (In the Philippines, the new pistols were used in active combat against the Moro insurgents.) The weapon was also evaluated by cavalry officers in the western United States.

The pistol was praised for its accuracy, its simplicity of construction, and the rapidity with which it could be fired. Many officers remarked posi-

tively on its ability to fire eight shots without having to be reloaded, two more than with the revolver. The main criticism echoed a familiar complaint about automatic pistols in general: It required both hands to pull the slide back for loading.

Other negative comments referred to the pistol's poor balance, failure to eject empty cartridge cases when it was dirty, inadequate caliber, shortness and smoothness of the grip, and overall awkwardness. The officers also said that the front sight was too high and that it was impossible to tell at a glance whether the chamber was loaded.

Colt's engineers and John Browning himself reworked the pistol and modified the slide lock to hold the slide open after the last shot had been fired as an indication that the weapon was empty. Following a number of other modifications, the weapon, in .38 caliber, became known as the Model 1902 Colt Browning.

Colt tried to sell the weapon to the

British, but it was unacceptable to them because the caliber was smaller than .40. Colt considered developing a .41 caliber Model 1902 to satisfy both British and U.S. complaints about the inadequacy of the .38 caliber (9mm) cartridge. But this project was never started because the U.S. Army was concurrently conducting wound ballistics tests that eventually signalled requirements for a .45 caliber cartridge.

In 1904, the Army's Ordnance Office established a board to conduct a series of tests with bullets of different sizes and weights and to recommend a bullet that had greater shock effect and short-range stopping power than the .38 caliber bullet. The board experimented with 10 different projectiles from 7.65mm to 12.09mm.

On the basis of wound data, x-ray photography, and shock effect, the data from the tests tended to favor large unjacketed projectiles as man-stoppers. As a result the board concluded that a bullet should have a caliber of not less than .45 to produce



The M1911A1 and its replacement, the 9mm Beretta.

the shock effect and the stopping power at short ranges that a military pistol or revolver should have.

On 31 January 1906 the Ordnance Department sent form letters to inventors, manufacturers, and firearms representatives informing them of the Army's plans to test .45 caliber (11.43mm) revolvers and automatic pistols. The object of the test would be to determine which weapon was best suited for use principally by cavalry and light artillery units. Eighteen parties expressed interest in submitting handguns for trial, but only nine pistols were actually delivered. The trials in 1907 narrowed the field of competing handguns to a Colt .45 caliber pistol and a candidate weapon submitted by the Savage Company. The board stated:

Among the most desirable features of the Savage pistol are its simplicity and small number of parts and their accessibility, the lack of screws or flat springs, the number of cartridges (eight) held by the magazine, the position of the center of gravity and the way the pistol lies in the hand, the expulsion of the magazine by the pistol hand, and the ease with which the breech mechanism may be withdrawn. Among the most desirable features of the Colt pistol are its flatness, compactness, neatness, and ease of carrying, the comparatively short total length, and the ease with which the breech mechanism may be withdrawn.

The testing officers noted that both weapons required significant changes and cited inadequate safety mechanisms as one of their major faults: The Savage could be improved with wooden rather than metal grips, and its front sight could be improved and more securely fastened; the Colt's trigger and hammer spur also needed improvement; and the pistol needed a more convenient magazine release. The board recommended field trials in 1908 for both pistols because the tests, which had been conducted at the Springfield Armory, could not duplicate the punishment the pistols would receive at the hands of the troops. The Chief of Ordnance endorsed the

board's recommendations and ordered the purchase of 200 improved versions of each candidate weapon.

Unfortunately, the Savage Company lacked the technical and financial resources to compete with the Colt organization. Savage was plagued with basic design problems and had difficulty in getting its weapons to function satisfactorily with the test ammunition, made by the Union Metallic Cartridge Company of Bridgeport, Connecticut. The Savage Company also lost important documents that were required to complete the contract negotiations and discovered that it could not produce weapons with interchangeable parts in time to meet the delivery date. The company did obtain a waiver that allowed it to submit pistols without interchangeable parts. Difficulties with those pistols continued, however, during 1908: Magazines came unlatched during fire, and the pistols would not readily feed ammunition. The bolt hold-open device was often activated while the magazine still had cartridges in it, and the magazine was difficult to remove and insert.

Colt had also agreed to deliver 200 .45 caliber pistols for field trials. Its prototype 1907 pistol had a spurhammer, a rigid lanyard loop, a grip safety, a modified ejection port and ejector, and a frame cut for the attachment of a shoulder stock-holster. Ordnance officials agreed with the basic design elements but suggested that the shoulder stock was unnecessary. Although the 200 Colt pistols were delivered three months late, they were issued and tested in the fall of 1908.

The initial test reports on the Colt were discouraging. The pistols broke sears and firing pins and jammed repeatedly. The sear problem was corrected and John Browning and Colt employees reworked the .45 caliber pistol. They also corrected four other major defects: The two-link locking system was replaced by a one-link system; the grip safety was improved and simplified; the magazine release was repositioned to allow release of the feed device with the shooting hand; and the ejector was improved.

This pistol, similar in design to the 1911 model later adopted, is usually known as the Model 1909.

Tests of this model were conducted at Fort Myer and Frankfort Arsenal, and Browning gave a demonstration at the School of Musketry. Both the Arsenal and the School recommended further consideration of the weapon.

By the spring of 1910 the School of Musketry and the Field Artillery Board were convinced that a self-loading pistol of the Colt-Browning type would be desirable, but the Cavalry and Infantry Boards remained unconvinced. To resolve the opposition to the 1909 model, Browning developed a new prototype and called it the Model 1910.

When the Model 1910 experienced several initial failures at Fort Myer in February 1910, Browning reworked a number of the design aspects. Subsequently, the Model 1910 received praise from both ordnance officials and the Infantry Board, but the Cavalry Board continued to oppose the adoption of an automatic pistol.

The Colt 1910 and an improved Savage pistol were tested on 10 November 1910, beginning with an examination of the weapons and their safety devices. Field stripping and complete disassembly were performed and timed. Velocity, penetration, accuracy, and endurance were measured. Both weapons experienced malfunctions and broken parts during the test but were rated superior to the Army's revolver. The test board stated that neither automatic pistol "in its present design" was satisfactory for adoption in the service "because of insufficient strength of parts and in the case of the Savage of insufficient reliability of action," but went on to say that the Colt automatic pistol was believed to be much the better gun.

As a result of these findings, both Colt and Savage further modified their pistols. Colt designated its new design the Model 1911.

On 3 March 1911 the test board was reconvened to examine the modified Colt and Savage pistols. The board found that the performance of the Model 1911 Colt was "almost fault-

less," but that the Savage experienced 32 malfunctions and a number of broken or damaged parts. The board clearly favored the Colt-Browning Model 1911 and submitted its report to the Secretary of War who, on 29 March 1911, approved the selection of the model. (Colt, Remington Arms, and the Springfield Armory produced a total of 723,275 of these pistols between 1912 and 1919.)

After World War I, the Cavalry Board and the Springfield Armory recommended that the Model 1911 be modified to reduce the width and the length of the hammer spur, to lengthen the grip safety tang, and to provide an arched mainspring housing. Colt prepared five weapons with these modifications and submitted them to the Ordnance Department, which directed that the changes be incorporated into all future weapons.

A continuing need for personal defense weapons in World War II led to the mass production of 1,878,742 pistols. Even with this tremendous number of weapons on hand at the end of the war, a replacement for the Model 1911 was soon being considered.

Following World War II, and as early as 1948, the Army began testing potential replacements for the M1911A1. The Smith and Wesson Company, for example, developed a double-action 9mm automatic pistol and submitted prototypes of it to the Springfield Armory for testing. After testing the weapons, the government requested a single-action version, and Smith and Wesson submitted five such weapons to the Army. Although the test results were exchanged between the factory and the Armory, the project was not continued, because NATO standardization requirements began to affect the search for a replacement weapon.

In 1962, NATO developed its STANAG 4090, which called for standardizing handguns and submachineguns in the 9mm caliber. Twelve NATO countries ratified the STANAG, but the United States did not. Instead, during the late 1960s and 1970s, various agencies in the U.S.

continued to develop requirements documents, conduct surveys, and evaluate replacement weapons.

Finally, in 1974, the U.S. Air Force began a detailed evaluation of a 9mm handgun as a possible replacement for both the M1911A1 pistol and the .38 caliber revolver. Its preliminary report in 1980 concluded that the Beretta 925-1 9mm pistol was "superior to all other 9mm pistols evaluated (S&W M459, FN HP, Colt SSP, FNFA, H&K PS, Star M28, FNDA, H&K VP 70)" and to the M15 .38 revolver and M1911A1 as well. Both the Air Force and the U.S. Secret Service agreed that the Beretta pistol satisfied their requirements.

During the 1970s, too, the Army's Combat Developments Command developed a requirements document for a new handgun and hosted numerous conferences within the research and development community. Both the Army's Infantry Board and the Infantry Agency of the Combat Developments Command participated in these early studies, none of which resulted in any conclusive action.

The most significant of all the studies during the 1970s was one conducted by the Joint Service Small Arms Program Office and the Army, along with all the other services. The results of the study, published on 5 June 1980, recommended that all services "adopt a 9mm handgun to meet NATO standardization requirements and that they develop a single family of handguns and ammunition."

Accordingly, *Joint Service Operational Requirement (JSOR) for a Personal Defense Weapon (PDW)*, published on 17 June 1981, contained this statement:

A need has been identified for a Personal Defense Weapon/Standard Service Sidearm which is no heavier than the current caliber .45 M1911A1 pistol with ammunition but which has a combination of greater firepower, accuracy, and a higher probability of hit and increased RAM than either the M1911A1 pistol or any of the numerous caliber .38 revolvers currently in use. The standard NATO sidearm cartridge, as adopted by all NATO

countries, and most other free world countries, with the exception of the U.S., is the 9mm cartridge. This sidearm must utilize the 9mm NATO cartridge to provide for interoperability with these countries.

When the Army received this requirement, it submitted requests for proposals to handgun manufacturers and, at Fort Dix, New Jersey, in February 1982, tested four different weapons. The weapons failed the Army's test, and procurement plans were cancelled.

Finally, the latest tests in the effort to acquire a new handgun were held in February 1984 at three Army posts: Aberdeen Proving Ground, Maryland; Fort Dix, New Jersey; and Fort Benning, Georgia. Each manufacturer was required to submit 40 pistols — 30 for testing and 10 for training purposes. The candidate pistols were to be off-the-shelf items rather than new research and development efforts.

Specifications for the test guns included requirements for a chamber designed for the 9mm NATO round, a magazine with a capacity of at least 10 rounds, an overall length of at least 8.7 inches, a barrel no shorter than four inches, a weight of less than 2.7 pounds, and an ambidextrous safety. These criteria eliminated the M1911A1 from the competition and precluded its conversion to a 9mm caliber.

The trials in February 1984 and other considerations sealed the fate of our "old friend." Nevertheless, the controversy as to whether it or its replacement is the better weapon will undoubtedly continue as long as soldiers recall the M1911A1's reliability and service to the country. It may be dead — but it is far from buried.

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