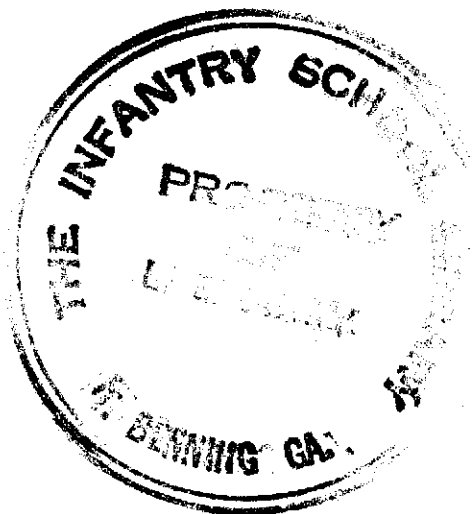


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STUDY ON THE REPLACEMENT POTENTIAL OF THE  
9mm PISTOL AS COMPARED TO THE PISTOL  
CALIBER .45, M1911A1 AS THE COMBAT SIDEARM  
OF THE U.S. ARMY

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April 1968



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5 April 1968

SUBJECT: Study on Replacement Potential of the 9 mm  
Pistol as Compared to the Pistol Caliber .45  
M 1911A1 as the Standard U.S. Army Sidearm

1. PROBLEM: To determine if a 9 mm (Luger Parabellum) model pistol should replace the Pistol Caliber .45 Automatic, M1911A1 as the combat sidearm of the U.S. Army.
2. ASSUMPTIONS.
  - a. The U.S. Army will retain a hand gun as a close-in self-defense weapon for selected individuals.
  - b. The increased overall capabilities of a replacement weapon would warrant the additional expenditure of funds.
  - c. Individuals armed with either caliber weapon could be trained to an acceptable standard without a drastic change in the existing Marksmanship Training Program.
3. FACTS BEARING ON THE PROBLEM.
  - a. The pistol is required as a self-defense weapon by such personnel as aviators, staff officers, Military Police and crew-served weapons operators. The light weight and reduced size of the pistol make it possible to be carried on the person while the individual is performing his primary mission. The pistol provides compact minimum self-defense on a readily available basis to the above mentioned personnel.
  - b. The ammunition used in the 9 mm pistol is inherently more accurate, has a higher velocity and is lighter in weight than the ammunition used in the present service automatic. (Annex A)
  - c. The 9 mm pistols that are presently being produced throughout the whole world are generally lighter in weight, smaller in size and have a larger magazine capacity than that of the pistol caliber .45 M1911A1. (Annex B)
  - d. One of our NATO agreements was to standardize all ammunition throughout the NATO countries. Six of our Allies have converted from the caliber .45 to the 9mm cartridge and four other Allied countries had been using the 9 mm cartridge prior to the standardization agreement. (Annex C)
  - e. In all of the currently produced service type pistols there have been only minor technical improvements in their overall characteristics since the adoption of the pistol caliber .45 M1911A1 by the U.S. Army. There are weapons in existence designed and produced by U.S. firearms manufacturers that incorporate these improvements in design. If a replacement is to be considered it would be considered in

in keeping with U.S. Army trends to adopt a weapon that is both designed and manufactured in the United States. (Annex B)

- f. The cost of a replacement weapon should be comparable to the current cost of the pistol caliber .45 M1911A1. (Annex B)

#### 4. DISCUSSION.

- a. The advantages of retaining the Pistol Caliber .45 Automatic M1911A1 are:

- (1) The M1911A1 has proven itself to be a reliable weapon with adequate accuracy and power in numerous wars and conflicts.
- (2) There have been no drastic technical improvements in the art of pistol design since the adoption of the M1911A1.
- (3) The United States Army has stockpiled an almost inexhaustible supply of both caliber .45 M1911A1 pistols and ammunition as indicated by the sale of these weapons as surplus.

- b. The advantages of replacing the caliber .45 automatics are:

- (1) The caliber .45 cartridge is not compatible with the majority of our allies.
- (2) The 9 mm (Luger Parabellum) cartridge is an inherently more accurate cartridge which produces an adequate amount of killing energy.
- (3) The compactness and lighter weight of both the weapon and the ammunition would reduce the load of the individual and decrease logistical burden to a great extent.
- (4) This study indicates that there would be an approximate increase of fifty percent in effective range and an increase in magazine capacity from 20 to 70 percent depending on the replacement weapon selected.

#### 5. CONCLUSIONS.

- a. The pistol caliber .45 M1911A1 is an adequate weapon to meet the present combat demand for a weapon of this type.
- b. There are pistols being designed and manufactured throughout the world at the present time that possess desirable characteristics over the present pistol.

6. ACTION RECOMMENDED.

- a. Due to the present stockpile level of the M1911A1 pistol that the Army has on hand, the pistol should not be replaced at this time. Also since there have been no significant improvements in the art of pistol design since the inception of the M1911A1, the cost of a replacement is not warranted at this time.
- b. The pistol caliber .45 M1911A1 should be replaced only when the existing stockpile of weapons diminishes to the point that the demand can not be meant.
- c. A Qualitative Material Requirement (QMR) should be developed to the point to provide for a future replacement of the M1911A1.

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ANNEXES:

- A-Comparison of Cartridge Characteristics
- B-Comparison of the Characteristics of Pistols
- C-The Caliber .45 Pistol Cartridge is not Compatible with Standard Ammunition Used by Allies
- D-Bibliography

CONCURRENCES: (Omitted)  
NONCONCURRENCES: (Omitted)  
CONSIDERATION OF NONCONCURRENCES: (Omitted)  
ANNEXES ADDED: (Omitted)  
ACTION BY APPROVING AUTHORITY:

Date:

Approved (disapproved), including  
(excluding) exceptions.

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Signature

ANNEX A--Comparison of Cartridge Characteristics.

	Bullet Weight Grams	Muzzle Velocity f.p.s.	Muzzle Energy ft. lbs.	Penetration 7/8in. Soft pine boards
9mm (Luger Parabellum) Caliber .45	124	1120	345	10
Automatic	230	850	369	6

	Drop in inches:				
	25 yds.	50 yds.	100 yds.	150 yds.	200 yds.
9mm (Luger Parabellum) Caliber .45	1.0"	4.2"	17.8"	43"	77.5"
Automatic	1.7"	6.9"	24"	54"	111"

ANNEX B--Comparison of the Characteristics of Pistols.

	Caliber	Magazine	Barrel Length	Overall Length	Weight
Cal .45 M1911A1 German Walther (Luger Auto.P38 Italian Beretta Auto.1934 Belgian Browning Hipower Smith & Wesson 9mmAuto. Model 39	.45 9mm	Box type Cap.7 rds. Box type Cap.8 rds. Box type Cap.8 rds. Box type Cap.13 rds. Box type Cap.8 rds.	5" 43/4" 4 1/2" 4.64" 4"	8 1/2" 8 1/2" 8" 7.34" 77/16"	39ozs. 33.6ozs. 31ozs. 32.96ozs. 26 1/2ozs.

	Maximum Effective Range	Sights	Commercial Cost *
Cal .45 M1911A1 German Walther Auto.P38 Italian Beretta Auto.1934 Belgian Browning Hipower Smith & Wesson 9mmAuto. Model 39	50 m. 75 yds. " " "	Fixed front Fixed rear Fixed front Fixed rear** Fixed front Fixed rear Fixed front Lateral Adj. rear Fixed front Lateral Adj. rear**	\$94.00 \$99.50 \$99.00 \$104.50 \$92.00

\* The cost figures are for comparison only. Some of these weapons are not mass produced for military use. If mass production were undertaken on any one of the weapons, a considerable cost reduction would result.

\*\* This weapon is double action indicating that a round may be carried in the chamber of the weapon with the hammer in the forward position and fired by pressing the trigger without manually cocking the weapon. After the first round is fired, the weapon operates as a conventional automatic pistol.

ANNEX C--The Caliber .45 Pistol Cartridge is not Compatible with Standard Pistol Ammunition Used by Our Allies.

COUNTRIES ARMED WITH CALIBER .45

Argentina  
Brazil  
Mexico  
Thailand  
United States

COUNTRIES CONVERTED FROM CALIBER .45 TO 9mm

England  
Canada  
France  
Norway  
China  
Spain

9mm COUNTRIES

Germany  
Denmark  
Italy  
Netherlands

ANNEX D--BIBLIOGRAPHY

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