

Colt Model 1911 Caliber .455 Webley Converted to .45 ACP

By: Captain Lior Nedivi, Israel National Police HQ, Division of Identification and Forensic Science, Weapons Identification Laboratory.

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Abstract

Colt model 1911, caliber .455 Webley Automatic, was converted to caliber .45 ACP due to rarity of original ammunition. This is a case of “mismatching of ammunition” where the firearm was converted to fit the ammunition, not vice versa as commonly performed. This firearm conversion led to the change of family and individual characteristics on the bullets and cartridge cases.

The phenomena of “mismatching of ammunition” has been described by Hatcher, Jury and Weller, in their book **Firearm Investigation, Identification and Evidence (pp 311-315)**, but more in the context of physically changing the ammunition to fit the firearm. The most common type of “mismatching of ammunition”, according to Hatcher et al. and cases received by our laboratory, is where the bullet caliber is the same but the cartridge case is wrong. The substitute cartridge case is simply loaded and fired. Other types of mismatching is done by simply filing or grinding off rims of revolver ammunition so it will function in an automatic pistol. Still another, a bit of copper wire or even a paper clip could be used on rimless cartridge cases to achieve a rim for use in revolvers; a much better method than having to elevate the barrel to aid in firing pin pressure to the primer. The list is long. This article gives an example of “mismatching of ammunition” by converting a firearm to fit ammunition of a different caliber and to the best of our knowledge it is the first time this kind of conversion is reported.

Our firearms laboratory received a Colt Model 1911, semi automatic pistol, chambered for caliber .455 Webley Automatic ammunition for examination; a case of illegal possession. See photograph 1. These pistols were made in small quantities, mainly for the British market. They are so rare in Israel, it is almost impossible to obtain one from an Israeli gun dealers. There is not even one pistol legally registered in the national computerized data base.

The owner of the pistol probably encountered the problem of obtaining original .455 Webley Automatic ammunition for his gun, therefore he made a small conversion to make it possible to fire the very popular .45 ACP ammunition.

From the firearm examiner's point of view, any conversion brings in some problems and raises questions:

1. Being aware that the conversion could be used to cover up a misuse of the firearm.
2. Identifying the fact that there has been “a change” and how it affects the firearms functioning.
3. Finding a way to restore the firearm to its original condition, if necessary.
4. A change in the class and individual characteristics of the bullets and cartridge cases.

Previous to test firing the pistol, an attempt to chamber .455 Webley Automatic ammunition from the laboratory supply was made. It was unsuccessful due to an altered extractor hook. This "gunsmith" simply replaced the original extractor with a home made one which has a longer extraction hook. An alteration necessary to reach the smaller diameter rim of the .45 ACP. See photograph 2 for the comparison of extractor hook lengths.

This simple conversion was possible due to the small differences in the dimensions of the two calibers, .455 Webley Automatic and .45 ACP. See photograph 3 and table 1 for technical data of both calibers. The pistol was then test fired with .45 ACP ammunition.

Later, an original .45 ACP Colt Model 1911A1 extractor was disassembled from our laboratory collection and assembled on the subject pistol. This enabled loading and test firing with .455 Webley Automatic ammunition. It was assumed that the original extractor hook of the Colt 1911 caliber .455 Webley has the same dimensions as the Colt 1911A1 caliber .45 ACP.

The test fired cartridges and bullets, from both calibers, could now be compared to the collection of spent bullets and cartridges from unsolved crime cases. The test bullets of caliber .455 Webley Automatic had six "normal" distinctive land impressions with a left hand twist. The width of the land impressions of the test bullets of caliber .45 ACP were not clear, characteristic of an oversized bore or undersized bullet or a barrel with eroded land impressions. Only one land impression had what appeared to be distinctive driving and leading edges. However the land impression width measured 0.094 inch (2.4 mm) as compared to the .455 Webley test bullet and pistol barrel which measured 0.075 inch (1.9 mm).

In our bullet collection of unsolved crime cases we have no .455 Webley bullets; an easy search. Our .45 ACP bullet collection contains seven unsolved cases; a rather small collection. Since the .45 ACP test bullets has family characteristics of an undersized bullet, etc. and all the bullets in the unsolved crime collection has distinctive land impressions this search was also easy.

On the cartridges, another interesting phenomena was observed. All the .45 ACP cartridges have a distinctive firing pin drag mark on them but weak vertical breechface traces, the .455 cartridges have no firing pin drag mark and have clear distinct vertical breechface traces. Reasons could be attributed due to the differences in materials, dimensions and pressures. In addition the .455 Webley test ammunition headstamp is "...41..."; dated to approximately fifty five years ago. In our cartridge case collection of unsolved crime cases we have no .455 Webley cartridges; an easy search. Our .45 ACP cartridge collection contains eleven unsolved cases, a rather small collection and none compared to the test shots.

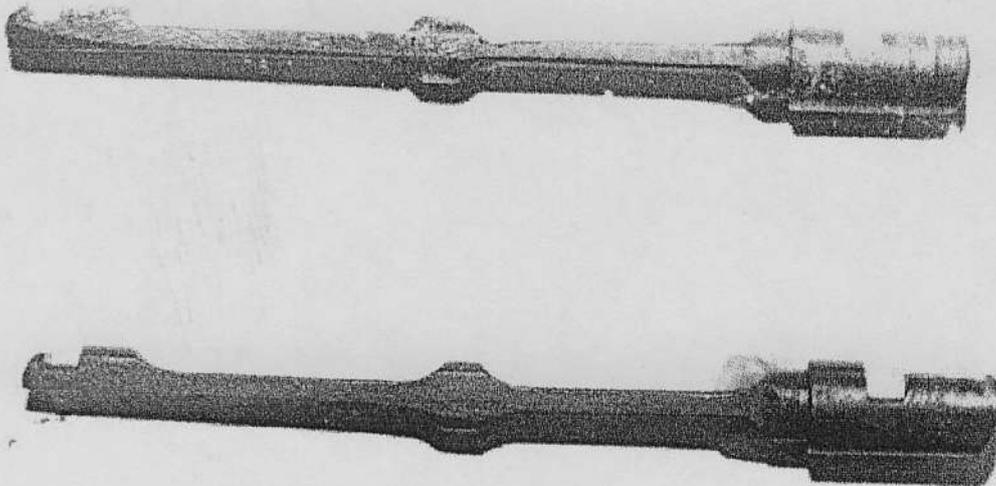
Summary:

All possible types of firearm and ammunition alterations exist in the world of forensic science, and every examiner should be aware of it. This case report shares our methodology in handling such a case.

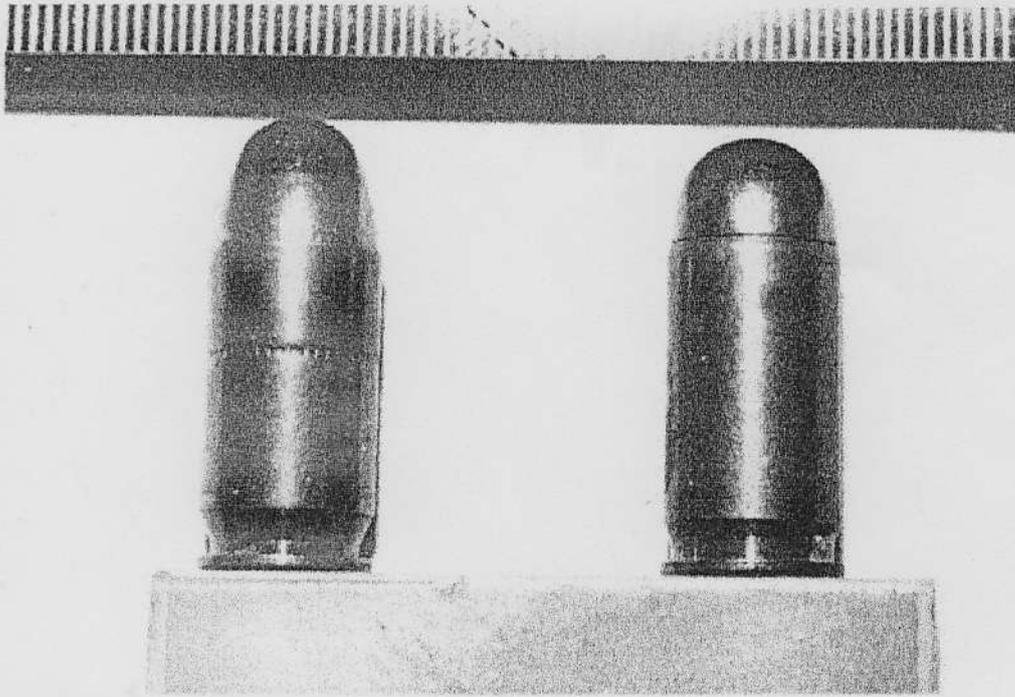
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Photograph no. 1: Colt Model 1911, semi automatic pistol, chambered for caliber .455 Webley Automatic, the serial number could not be restored.



Photograph no. 2: Homemade extractor with longer extractor hook (*top*) .
Original extractor from .45 ACP Colt Model 1911A1 (*bottom*).



Photograph no. 3: .455 Webley Automatic cartridge (*right*) .
 .45 ACP cartridge (*left*).

Table no. 1: Technical and Ballistic Data

	Caliber .455 Webley Automatic	Caliber .45 ACP
Bullet Diameter	0.452" - 0.455" (11.48-11.56)	0.438" - 0.451" (11.12-11.45)
Case diameter - neck	0.471" - 0.476" (11.96-12.09)	0.466" - 0.474" (11.83-12.04)
- head	0.470" - 0.477" (11.94-12.11)	0.468" - 0.476" (11.88-12.09)
- rim	0.499" - 0.504" (12.67-12.80)	0.466" - 0.480" (11.83-12.19)
Case length	0.908" - 0.930" (23.06-23.62)	0.884" - 0.906" (22.45-23.01)
Muzzle velocity (5" barrel)	740 ft. per sec. (225 meter per sec.) 222 - 226 gr. bullet	850 ft. per sec. (259 meter per sec.) 230 gr. bullet