BASIC TRAINING: THE ITALIAN (AND JAPANESE) 6.5MM MANNLICHER-CARCANO

DATELINE:OKLAHOMA

By Craig Roberts

After the ambush in Dealey Plaza on November 22nd, 1963, a solitary rifle--the alleged murder weapon--was found on the 6th floor of the Texas School Book Depository. Much has been written about this weapon in post assassination years, but with few exceptions, many basic items of interest concerning the weapon's history and basic functions have been left out of books and research papers. A limited number of researchers have written of the weapon in detail and their works should be studied for relevant information beyond this article. One particular book that is a "must read" concerning the 6.5mm Carcano is George Michael Evica's And We Are All Mortal (available through the JFK Resource Group). A superior research paper titled "The Gun That Didn't Smoke" by Walter F. Graf and Richard Bartholomew, is also of great interest.

BACKGROUND: In the late 19th Century metallic cartridges with internal primers replaced the breech-loaded single shot black power rifles of the armies of the world. Because the cartridges were single unit disposable items that contained the casing, the primer, the bullet, and the powder, firearms designers quickly capitalized on that fact. Several "rounds" of ammunition could be contained within a firearm and could be quickly utilized by the shooter by means of various mechanical actions within the firearm. Of concern in this article is the "bolt action" type of manual reloading mechanism.

To understand the proper nomenclature used when describing firearms' mechanisms and cartridges, we must establish a glossary of terms. This glossary will not only familiarize the reader with the language of this article but also serve as a reference for new researchers as they read through the various books, articles, and government documents in the future.

TERMINOLOGY:

RIFLE: a shoulder-fired weapon, normally fitted with a barrel longer than 24".

CARBINE: A shoulder-fired weapon, normally fitted with a barrel (and sometimes a stock) smaller than a rifle.

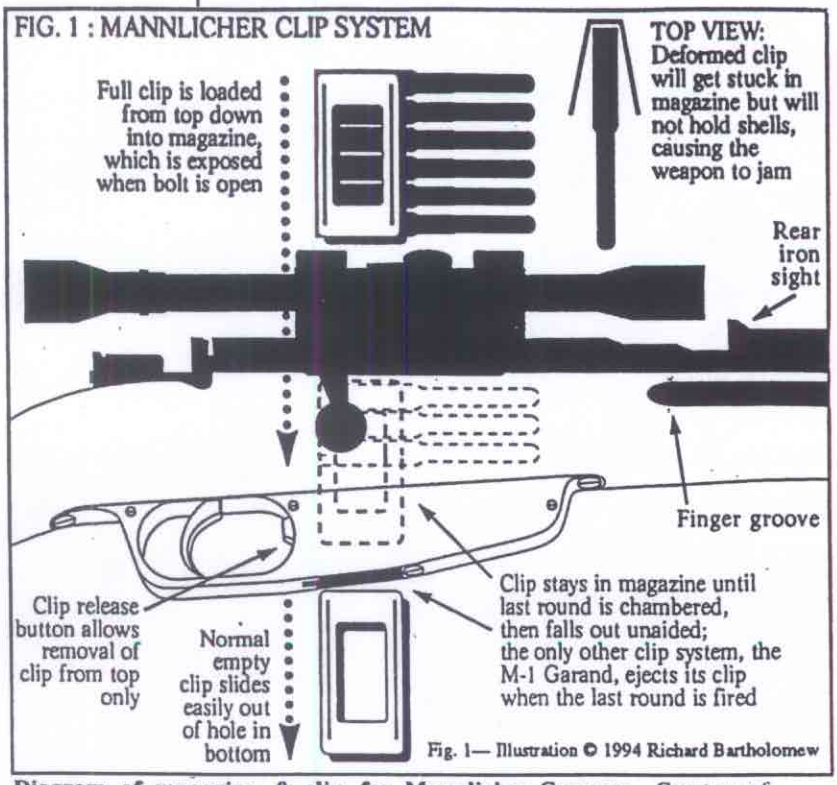
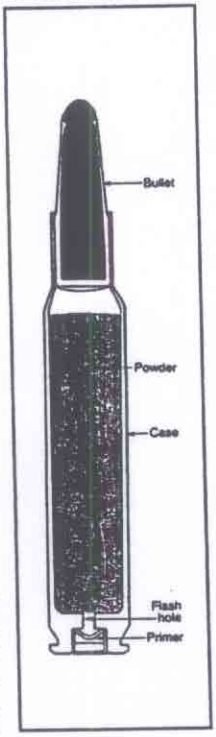


Diagram of magazine & clip for Mannlicher-Carcano. Courtesy of Walter F. Graf & Richard Bartholomew, from "The Gun That Didn't Smoke"

CARTRIDGE: Counted as a "round" of ammunition, a cartridge contains a casing, bullet, primer, and propellant (gun powder or cordite). It is measured by its bullet diameter (sometimes with the cartridge case length added to differentiate between rounds of the same caliber bullet but with different case length). This diameter is measured in "caliber" (inches) or "millimeter" (mm). American

military ammunition, after 1960, is measured in the metric system; prior to that year it was measured in the caliber (inch) system. For example, the ammunition for the M-14 rifle (1960) is 7.62mm, whereas the ammunition for the earlier M- 1 rifle (1942), which the M-14 replaced, was .30 caliber--or .30" bullet diameter). The Carcano (we'll drop Mannlicher to save space) found in the TSBD was 6.5mm Italian. This fact will become quite significant later.



MAGAZINE: Either integral/internal, or detachable, the "magazine" contains the cartridges that are stored below the breach or bolt. They are positioned to feed one at a time into the chamber of the barrel when the "action" is activated. Simply put, the magazine contains unfired rounds of ammunition and is attached to or part of the weapon.

CLIP: Unlike the magazine, a clip is usually not integral to the functioning of the weapon. A "clip" in actual fact is normally a "stripper" clip or "charger" clip. It is normally a small strip of sheet metal that holds a given number of cartridges by the base, normally in a line or a staggered stack. The stripper/charger clip is used to feed the magazine when the weapon is empty. With the bolt of the rifle or carbine to the rear, exposing the empty magazine well, a stripper or charger clip containing live rounds is inserted part-way into the open well by means of a guide slot by the shooter. The shooter then pushes down on the top cartridge, forcing the line of cartridges downward into the magazine well (or detached box magazine) until all have fed into the magazine to be retained by the "lips" or side rails of the magazine. The empty stripper clip or charger clip is then pulled out of the guide slot and discarded. However, there are at least three rifles in the world that utilize a stripper clip in a much different manner. They will be one of the subjects of discussion in this article.

BOLT: The round steel locking mechanism used to "cycle" the cartridges through the feed and firing cycle. The bolt normally contains the following items: Bolt Housing, Bolt Handle, Extractor, Ejector, Firing Pin, Firing Pin Spring, Safety, and Firing Pin Sear.

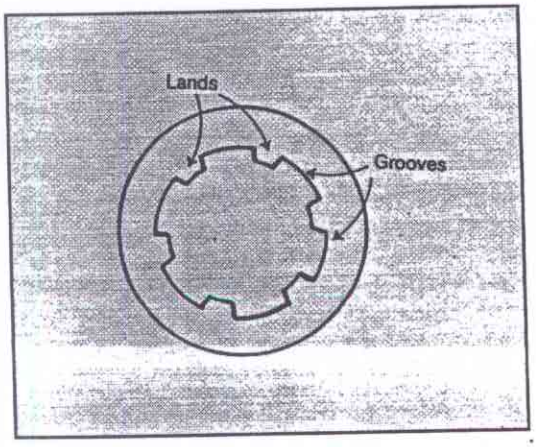
LANDS AND GROOVES: To increase the accuracy of a bullet, grooves are cut into the inside of a barrel in a twist fashion. These grooves are cut so that to produce raised surfaces on the round known as "lands." These lands are cut at a smaller diameter than the bullet so that as the bullet is propelled down the barrel, the lands grip into the sides of the bullet jacket and force the bullet to revolve as it travels the length of the barrel. When the bullet exits the barrel, it spins. This factor creates a gyroscopic stabilizing effect that increases bullet accuracy at longer ranges. Like finger prints, no two barrels leave the same markings, called striations, on the bullet. The individual lands and groove markings are the product of different tool marks. With the use of a comparison microscope, using a suspect bullet and a test-fired bullet, can be compared so that the suspect bullet can be matched to a given rifle.

MECHANICAL OPERATION OF A BOLT-ACTION RIFLE

A typical bolt-action weapon is operated in the following manner:

(1) Bolt, if open, is pushed forward, stripping off the top round of ammunition from the magazine and sliding it into the chamber of the barrel.

(2) Bolt handle is rotated down, locking the locking lugs of the bolt face into the breach locking recesses of the receiver/barrel. Depending on the rifle's design, the firing



Cross section of barrel lands and grooves.

pin is either cocked by engaging the trigger "sear" as the bolt moves forward, or has already been cocked by means of a cam surface when the bolt handle was originally raised after the previous expended cartridge was fired and extracted from the chamber.

(3) Trigger is depressed, releasing the sear, which in turn releases the spring-loaded firing pin to strike the cartridge primer. The cartridge then fires.

(4) Bolt handle is raised, unlocking the breach lugs, then pulled to the rear. The empty cartridge, gripped at the base by the extractor on the bolt face, is pulled from the chamber.

(5) When the bolt is pulled far enough to the rear, the base of the cartridge strikes the ejector and is ejected from the open action of the weapon.

"In fact, the first round single-fed into the chamber by the shooter invariably jammed. This would kill the 'three rounds in 5.6 seconds' contention."

(6) The open bolt is now in position to move forward again, strip the next cartridge from the magazine (which was pushed into position by a spring below the bottom cartridge), and repeat the firing cycle.

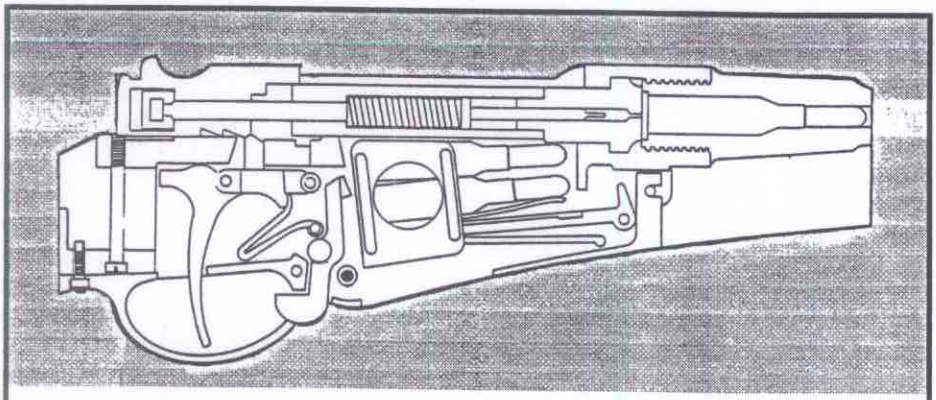
With the basic operating functions and proper terminology now covered, we will proceed to a bit of history that will assist the researcher in understanding the Mannlicher-Carcano's lineage.

HISTORY:

One of the first countries to adopt a rifle with a box magazine was Austria-Hungary. Austria had long been known in Europe for its arms works and fine firearms at Steyr, with its chief designer a well-known arms maker named Ferdinand Mannlicher. In 1885, a Mannlicher design, known as the Model 86 (for the year it would be released) was quite unusual in its design. Replacing the older single action breach loaders, the M-86 contained an integral magazine forward of the trigger guard similar to the later Carcano, but had an unusual "straight-pull" bolt that utilized a camming action instead of a manual bolt handle to lock the breach.

What is little known in the JFK research community is that the Carcano is not the only weapon that utilized a stripper clip that remained inside the magazine well during the firing sequence instead of being discarded after loading the rifle. The M-86 also utilized a stripper clip to hold the cartridges (five), which fell out of the bottom of the magazine well through an ejection hole when the last live round was fed into the chamber. As long as rounds remained in the clip, it could be removed by means of a release button in the front part of the trigger guard. This was done by opening the bolt, pressing the release button, and pulling the stripper clip with its unfired rounds up through the open breach.

In 1888, the Model 86 was replaced by the Model 88, a similar design with reduced caliber, which in turn was replaced in 1890 by a variant designed to utilize the new "smokeless" powder. What is interesting is that the final version, released in 1895, had a rear sight with ranges marked off in "Austrian paces," estimated to average 29.52", instead of meters. About this same time France adopted the Mannlicher-type, charger-loaded carbine for her cavalry. The weapon, which was 37.2" long and weighed in at 6.8 lbs., was chambered for its earlier Lebel rifle cartridge (8 mm). Known as the Berthier after its designer, the carbine held three rounds in a stripper clip inside the magazine well that fell out of the ejection hole in the bottom of the stock after the last round was chambered. The limited magazine capacity was



The Berthier carbine exhibiting the three round internal clip in place.

intentional, since the weapon was issued to unreliable native and colonial troops whose firepower, should they ever rebel, would be inferior to their Legionnaire counterparts. In 1890, Italy replaced her four-shot Vetterli with the newly adopted six-shot Mannlicher-Carcano, a design that utilized the Mauser-type bolt action and the Mannlicher-type magazine and feeding mechanism that was melded by Lieutenant-Colonel Carcano of the Government arsenal at Turin. The new design, manufactured under the direction of General Parravicino (whose name is sometimes used in Italy when speaking of the "Paravicino rifle" instead of the Mannlicher-Carcano), fired a rimless, smokeless cartridge of 6.5mm bullet diameter. This bullet, which was unusually long and round-nosed, was not a stable design at all. Compared to the German Mauser "Spitzer" pointed-nose bullet, the round-nosed bullets could only be counted on to strike targets with a semblance of accuracy at relatively short ranges.

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The clip design for the Mannlicher-Carcano Model 1891 was a six-round, in-line, brass stripper clip that remained in the magazine well until the last round was chambered. This clip design would later become a item of contention among researchers when evidence reports and photographs, plus witness statements, did not verify a clip had been found on the Texas School Book Depository 6th floor: the weapon could not function in a timely manner without it. In fact, for the majority of 6.5mm Mannlicher-Carcanos, the first round single-fed into the chamber by the shooter invariably jammed because of the extractor design, a flaw which would eliminate the crucial "three rounds in 5.6 seconds" contention of the Warren Commission.

Now for something new...even for our esteemed "old timers" in the research community...

THE JAPANESE CARCANO

Ten years before the Carcano entered Italian service, the Japanese were busily playing catch-up with their own military forces. Just emerging from centuries of seclusion and feudalism, they found themselves far behind the powers of Europe in military technology. In 1887 the Japanese Imperial Army adopted a Mauser- type rifle with a tube magazine (which is a long tube that permits the rounds to line up in a row, nose to base, below the barrel). In 1897, because of the shortcomings of the poor design in the Sino-Japanese War, this weapon was replaced by a more modern rifle developed by Japanese Colonel Nariake Arisaka.

Arisaka, the superintendent of the Tokyo Arsenal, was impressed with the Mauser-type bolt action and integral box magazine, and chose this design for his new "Type 30" infantry rifle. Interestingly, he picked the 6.5mm bullet for the rifle. However, the design of the cartridge case did not incorporate the same dimensions as the Italian 6.5mm; therefore it became known as the 6.5 JAP or 6.5 Arisaka. The rifle itself, known as the "Meiji Type 30," became the standard weapon of the Japanese Army in the years leading up to World War II. At this point the reader should take special note: The Japanese realized that the Arisaka's 6.5mm bullet had stability problems in flight and in an effort to improve its characteristics, incorporated a six groove barrel in the Type 30 and its follow-on WWII variant, the Type 38. The importance of this fact will become apparent to JFK researchers in a moment.

To the untrained eye, several other rifles of the period resemble the 6.5mm (and 7.35 mm) Carcano in appearance (protruding box magazine in front of trigger guard). Recall Roger Craig's description of the "7.65 mm Mauser" that Craig maintained Weitzman and Boone found among the boxes on the 6th floor. The look-alikes are:

- ⇒ Argentine M1891 Mauser (7.65 mm)
- ⇒ Turkish M1890 Mauser (7.65 mm)
- ⇒ German Model 1888 GEW (7.92 mm)
- ⇒ Russian Mosin-Nagant 1891 (7.62 mm)
- ⇒ Austrian Mannlicher Model 1895 (8 mm)
- ⇒ Belgian Fusil FN-Mauser Model 1889 (7.65 mm

Both the Carcano and Arisaka went through modification stages during and after WWI, and by WWII the main service weapons of the Japanese and Italians were, respectively, the Arisaka Type 38 in 6.5mm (with some 7.7mm models produced) and the Mannlicher-Carcano M1938, also in 6.5mm (with a few produced in 7.35 mm Mauser for Mussolini's Elite Guard and Carabineri). Notably, because of wartime build-ups prior to WWII, the Japanese contracted with the Italians to provide 6.5mm Mannlicher-Carcanos to Japan to supplement the quantities of Arisakas being produced!

(Note: D. Donald and C. Bishop, Combat Guns, Charwell House, 1987 p110)

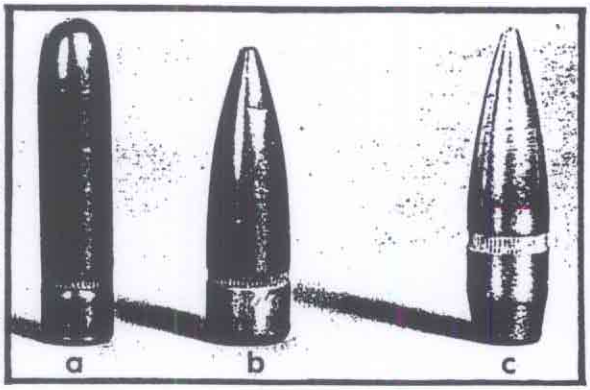
SCENE OF THE CRIME:

What was really found in the way of weapons and ammunition on the 6th floor on the 22nd of November, 1963? According to the best sources, the searchers found two (not three) empty cartridge cases next to the 6th floor window in the southeast corner of the building, and a rifle (described as a "Mauser" by some and "an Italian rifle" by others. See And We Are All Mortal: Mauser bolt-action) which contained one live 6.5mm round in the chamber. Those familiar with what was available in the war surplus stores and gunshops at the time will recall that many WWII service rifles could be obtained relatively cheaply. For those who shopped these stores and tinkered with guns, at first glance a Carcano might be mistaken for one of the external box magazine Mausers named above, both of which were quite common in the army surplus stores and gun shops. By comparing their photographs, the reader can easily see that a mistake can be made even by the relatively knowledgeable. The identification error can quickly be resolved by reading the stamping on the barrel and/or receiver. (This explanation, however, does not account for the fact that the rifle found on the roof had no external box magazine and appeared to be a legitimate Mauser magazine design, remember Roger Craig's determined description of Weitzman reading "7.65 Mauser" on the barrel of the 6th floor weapon--and therefore not the same as that shown in footage taken by Tom Alyea).

Texas Department of Public Safety evidence lists show only two spent cartridges **and no clip**, turned in that day. The same document, appearing in the Warren Report, has been altered to show 3 spent cartridges found--obviously to support the fiction of the lone gunman story. Still, the "investigators" had not noted the error of the missing clip from the evidence documents.

"...we must address the issue of the possibility of two "magic bullets."

"...one photograph of CE99 showed four groove markings and another with six grooves."



a.) 6.5mm Mannlicher-Carcano b.) 7.65 Mauser c.) U.S. Caliber

(See J. Gary Shaw and Larry Ray Harris, Coverup, for reproductions of these two documents pp. 159-160).

Next, we must address the issue of the possibility of not one nearly-pristine "Magic Bullet", but two. Brought to light by Mr. Walt Cakebread, who studied various photographs of CE399. Cakebread noted a discrepancy of the number of lands and groove markings in two reputed CE 399 photos, he proceeded to do measurements and mathematical calculations to prove his discovery. By measuring the distance between the groove markings and the width of the grooves, he determined that one photograph of CE399 showed a bullet with four groove markings (consistent with a 6.5mm Mannlicher-Carcano) and another with six grooves! This six groove bullet, in 6.5mm, could only match the barrel pattern of the Japanese Arisaka--or maybe a Carcano made under contract to the Japanese who may have specified a six groove barrel for the contract. It is also possible that the Japanese may have rebarrelled the Carcanos for six grooves after they arrived in Japan, but it is not likely. It would make more sense to specify the barrel construction prior to manufacture.

Logically, that the Japanese would not want two types of 6.5mm ammunition in their supply system, as their order specified the weapons to be chambered for the 6.5 Arisaka cartridge. Japanese practices of standardization required all ammunition for service rifles be compatible.

Is it possible that the Japanese indeed did utilize Carcanos with six groove barrels? If so, could one have found its way into the conspirators inventory? What else might explain the six groove exhibit of CE399 discovered by Walt Cakebread?

This may open up a few new doors to the research community. It would be interesting, to say the least, to find an example of a Japanese 6.5mm Carcano and count the lands and grooves. Maybe we would find six!

The intent of this article was two-fold: to introduce the new researcher with the operating principles of the Carcano (and other bolt-action rifles), and to present new information concerning the Japanese Carcano to assassination old hands.

If anyone should discover a Japanese Carcano, give it careful inspection. We need to know how many lands and grooves it contains. My efforts to research this so far have produced no results since this particular weapon--the Japanese Carcano--is little known in the firearms community.

ABOUT THE AUTHOR...

Craig Roberts was a Marine sniper in Vietnam, and now serves as a police officer with the Tulsa Police Department. During his 25 years of service he has participated in both rifle and pistol competition on a national level with both the police and military. A recognized authority on weapons and marksmanship, he is also a lieutenant colonel in the Army Reserve, working in the tactical intelligence field--which includes identification of weapons and equipment of military forces world-wide.

His books include: The Walking Dead; A Marine's Story of Vietnam (1989); One Shot--One Kill; America's Combat Snipers (1990); Combat Medic--Vietnam (1991); Desert Storm (1992); Police Sniper (1994); Kill Zone: A Sniper Looks at Dealey Plaza (1994); Hellhound (fiction) (1994); JFK: The Dead Witnesses (1995); and each book in the Time-Life Series "The New Face of War." He has also written for periodicals that range from American Heritage to Military History.

This piece was researched with the assistance of Richard Raska, firearms technician, Tulsa Police Department Laboratory.

" ...The great advantage of Americans, wrote de Toxqueville in 1835, consists in their being able to commit faults which they may afterwards repair."

JFK February 13, 1963