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**Figure 1:** M38 Carcano.

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I have written this article to offer a view of my experiences with the M38 Carcano Rifle and do not attest to be an expert with such rifle.

I purchased my M38 (or M91/38 as pointed out by some) chambered in 6.5x52mm from [Southern Ohio Guns \(SOG\)](#) in December, 2002. I wanted to add to my collection of military surplus weapons and was having a difficult time trying to decide between the Carcano and the Steyr.

The Carcano was the rifle that Lee Harvey Oswald allegedly shot JFK with. This historical relationship peaked my interest and so I opted to purchase one.

It cost me around \$80 (and, of course have since picked up a Steyr also....but that's another story for another time).

When I opened the box, I can say that I was sort of disappointed to say the least. The words of a friend who once used the phrase - **"tomato stake"**, came to mind.

The rifle was well used and looked pretty beat-up. It was greasy from head to toe and looked like it had been dragged through every type of battlefield imaginable (*plus some nasty warehouses*).

The wood had only a little of its original finish and there were lots of dings and bruises (*and a few deep scrapes*).

**Note:** The pictures included in the article are of the rifle after I refinished the stock.

You know how it is though, you can't really tell how good the book is just by looking at the cover itself...so I set about cleaning.

I downloaded and used instructions from an excellent Carcano web site at:

<http://attila.stevens-tech.edu/~glibera1/carcano/>.

First, I inventoried all the ID marks that I could find so that I could learn more about this new addition to my collection.

It turns out that it was manufactured at the Terni Factory in 1940. It also had the roman numerals of XVI, which mean that it was made in the 16<sup>th</sup> year of Mussolini's rule. I did not see any more marks on the metal, so I started to strip the rifle apart.

### The Clean-up

The rifle came apart pretty easily. It is really interesting to see how simple a firing mechanism/bolt many military rifles have. The only thing I have to say is that the magazine (internal) feeding mechanism is super easy to take apart, but a **BEAR** to put back together. This is because of the very stiff spring tension on the follower.

I use low odor mineral spirits to strip off the grease. Being that I have to work inside during the winter months this controls the odors and fumes. Using a toothbrush, the mineral spirits really do a great job.

It turns out that the rifle still had around 50% of the original blueing, which I thought wasn't all that bad. It was interesting to find 3 inches of grease pushed out of the barrel by the first patch I pushed through. After lots of patches and scrubbing, I looked into the barrel and saw rifling in fair condition with some pitting. This seemed not unreasonable for this rifle (*I was still convincing myself that I had done all right for \$80*).

I used what I call the "[electro-scum-cleaning device](#)" to remove even more lead and copper residue left in the barrel. It proved itself quite worthy and did a great job on removing even more gunk. With the metal all cleaned up from grease, I covered it nicely with [Break Free clp](#),

except for the bore (*which I used regular gun oil*).

I then stripped the bolt.

The bolt is simple, to say the least. It isn't a large chunk of metal like a typical Mauser bolt and it is by far the lightest bolt in my collection (*as shown in **figure 2***).

It came apart very easily and was not in that bad of shape.

I reassembled it and coated it with [Shooters Choice All Weather High Tech Grease](#) (it gets COLD in the winter and HOT in the summer while shooting in Minnesota).

Then I cycled the bolt and tried pulling the trigger...it was a little on the spongy side. In my opinion, it broke cleanly enough for a military rifle. Setting the metal parts aside, I went to work on the stock.

**Figure 2:** side by side comparison of a Mauser 48A (bottom) and Carcano bolt.



The stock, it turned out, had some pleasant surprises for me. As I was cleaning and removing the grease with [Purple Power](#) soaked rags, strange and interesting markings started to appear. Apparently, one of the carriers of the rifle had a lot of time on his hands (*as most soldiers do*) and decided to decorate his stock. Or, maybe he was keeping track of how many "kills" he had. In any case, on the right side of the stock I found after cleaning, 41 circles stacked into a pyramid shape (*as shown in **figure 3***).

Immediately behind the bolt, a cross made with 6 circles appeared after the grease was removed (*as shown in **figure 4***). All the circles were exactly the same size. I asked myself - "What would a soldier have on him that would make perfect circles consistently?"....a spent cartridge was the answer and sure enough, using a spent 6.5x52 casing, the circles were a perfect match. Other markings that surfaced were an X'd-out circle that could have been a tag of some sort and some manufacturing markings with the serial number of the weapon.

Finding all these markings on the Carcano really made me feel like it was a worthy addition to my collection.



**Figure 3:** Rings made in stock using a spent cartridge. A count of enemy "kills" or just a doodle by a soldier?

**Figure 4:** Other markings include a cross made of circles cut by a spent cartridge.



**Figure 4a:** On the reverse side of the buttstock are a crossed out disk marking and the serial number of the rifle.



**Figure 5:** Bottom is the "multi shot" round showing the cuts made on the projectile to facilitate it coming apart.

### Italian food for the rifle

I reassembled the rifle and set about trying to find ammunition for it.

Now, here is a lesson to be learned:

*Find the ammo **FIRST** and then determine how hard it is to find or reload for, and **THEN** get the rifle....*

I happened to luck out with the Carcano. [AIM Surplus](#) was selling surplus bulk Carcano ammo PLUS [Graf and Sons](#) had come out with a statement saying that they were going to be getting new 6.5x52mm brass (reloadable) in the near future. I quickly ordered 100 rounds of the surplus stuff from AIM Surplus and also placed an order for the brass.

When that ammo came...I had thought - the rifle had looked bad, the ammo looked even worse! There were corrosion marks on the brass. There seemed to be a mix

of different types of metal being used for bullets and, in at least one case, the bullet did not even look right. It seemed to have cuts made into the side projectile (as shown in **figure 5**). It turns out that most of the ammo was made in the 1930's and was stored in "not so perfect" conditions, making the brass corrode and actually weaken over time. It was advertised as "as is" bulk, dirty, but mostly usable. The one funny looking projectile (*with cuts on the side of the projectile*) turned out to be a "multi shot" round. According to the Carcano website, the projectile actually is hollow and contains lead shot and it is not uncommon to run across these in surplus ammo.

**Figure 6:** Solenite is a very stable smokeless powder. Shaped like tubes, the color of the powder ranges from a translucent amber to a dark opaque brown. The projectile at top is a pulled 6.5x52 bullet.



Out of the 100 rounds that I disassembled for reloading, there was one with a dud fired primer, 2 had clumped and disintegrated Solenite powder, 2 were actually Greek 6.5mm rounds (which do not fit in the Carcano) and 2 rounds had absolutely no powder in them. That is correct, cartridges without powder. The primers were intact, the bullets were seated and tight, just no powder. If I had just went to the range and started to fire the surplus ammo as is, I COULD have.....well, you can imagine the worst.

I heard from other shooters that one possible reason for no powder could be from shoddy QA/QC and/or sabotage in the ammo factories.

**Moral of the story:** *If you shoot the surplus ammo (any older ammo), give it a quick shake by your ear, you should be able to hear powder rolling around. Be cautious!*

### **Carcano rifle sights (or lack there of)**

Next on my list was to take care of the sights. The M38 rifle I have has a fixed rear sight (as shown in **figure 7**) and a "not so large" front sight blade (as shown in **figure 8**). Others who have fired Carcanos say that the M38 is battle sighted for a fixed 200m distance .

If you aim as usual, at 100 yards, your shots will place high.

You have two ways of correcting this:

1. Aim lower - or -
2. Change the height of the front sight blade.

While other rifles enjoy tremendous availability of surplus and after-market parts such as the Mausers with replacement taller front sight blades, the Carcano does not have such an option. I was not going to file a deeper notch in the rear sight and I did not want to fiddle with forcing my sight picture to be un-natural, so I opted for a technique taught to me by my good friend Mark Trope. I won't go into specifics here, other than to tell you to go and read the [article](#) posted on [Surplusrifle.com](#) that Mark and I wrote on how to use Acraglas Gel to increase the height of you front sight (as shown in **figure 8**). Having built up the front sight, I went off to the range.



**Figure 7:** Fixed rear sight is set for 200m. Note stamped caliber "6.5mm" on sight.

**Figure 8:** Front sight of rifle built up using Acraglas Gel.



**Figure 9:** Two loaded Carcano clips, top is steel, bottom is brass. Note different metal types used for projectiles.

Between reading message board postings about duds, dead rounds and broken cases getting stuck in rifles, and the sorry shape the ammo that I ordered was in, I was not very enthusiastic at the thought of shooting this stuff. Just about the time I was contemplating my predicament, Graf sent me my order of new 6.5x52 brass. In talking with other shooters on the message boards, I figured the best thing was to re-load the old surplus ammo. That is, pull the bullets, and then reuse the powder and the

bullets in new brass with new primers.

I set up my Lee 6.5x52 dies and sized the new brass, then seated Winchester magnum large rifle primers in the brass. I had heard that a magnum primer should be used because the surplus powder is slow burning. Others said that a standard primer would work fine though. I chamfered the mouths of the brass and proceed to the next step in reloading the ammo. Using a kinetic bullet puller, I pulled the surplus ammo apart, transferring the powder to the new brass and seating the bullet to the same overall length as the surplus ammo. Taking apart the ammo showed me two things:

1. The bullets were being held in by a sort of 'internal' crimp that proved fairly hard to break the bullet loose.
2. The surplus ammo's powder looked, well, strange.

The powder, it turns out, is called Solenite (*as shown in figure 6*). A very stable propellant, it is shaped like rods with a hole in the center. It has fairly large grain size. The color ranges from a transparent amber to an opaque brown. At first, I tossed out the first few darker brown colored Solenite powders that I discovered, but later I learned that the brown color was okay, as long as the powder was not clumped all together. For the most part, with a few whacks from the kinetic puller, the powder dumped out. Transferring it to the new case filled it pretty much right to the same level, which was just below the neck of the case.

Analyzing weights of 65 of the reloaded components:

- Bullet weights ran from 159.7 to 162.8 grains
- Powder ran from 34.9 to 36.8 grains.

I seated the bullet to the same OAL as the original surplus ammo, which was 3.00". The bullets also were seated such that the cannalure was properly used, it just happened to work out perfectly. With the bullets seated, the case was full, but the powder was not being compressed, as you could shake the cartridge and still hear the powder moving around. As I was seating the bullets, I found at times that the bullet was getting stuck in the die. That is because the 6.5mm Carcano is not the normal .264 inches but rather .268 inches. More on this in a moment.

### **Range Report**

A quick note on loading and shooting the Carcano is in

order at this point. This rifle is a Mannlicher-type clip fed internal magazine. That is, you take a clip that holds 6 rounds, push it into the magazine until an internal latch grips it. As you work the bolt, the follower pushes the next round up for the bolt. The clip falls out of the magazine when the last round is chambered (*as shown in figures 9, 10 and 11*). People at the range get a kick out of that, most of them think that something fell off the rifle. You will need to find either the brass or steel ammo clips for the Carcano because it is not easy, nor recommended to shoot the rifle with single rounds loaded manually. The reason is that the extractor on the bolt is designed to pick up the round from the magazine directly underneath the bolt head thereby making sure the round is actually being held by the extractor. I found that manually loading the round into the chamber, the extractor will not grip the rim of the cartridge at all and the bolt will not close. I suppose you could really force the bolt closed, but I doubt the firing pin would reach the primer to impact it and you may end up having to tap the round out from the muzzle end after you realize that the bolt did not grip and extract the round. I also had an issue that I could not seem to load the full clip of 6 rounds into the rifle. I could put 5 rounds into a clip and push it in and latch it with no problem, but going to 6, I could not get the clip to latch into place. Taking apart the rifle I traced the problem to the internal magazine where the lips of the bottom of the magazine had been bent inward, making it impossible for the follower and its spring to be compressed all the way down. A bit of mallet work on the sides, and it worked just fine.

**Figure 10:** Loading is accomplished by pushing a loaded clip into the magazine until it is retained.



**Figure 11:** After the last round is chambered, the clip drops out of the bottom of the magazine.

As always, when testing out a rifle for the first time, the very first round is very "exciting" to say the



least. You really do not know what to expect.

The recoil I found to be more than I expected and the muzzle blast was definitely a sight to behold. This is because the rifle is short barreled (20") and light weight and I was shooting full military loads. One of the shooters at the range commented that I must have loaded my rounds "pretty hot", judging from the blast. On that note, the shooters next to me shooting their brand new .50AE auto and Bennelli 12 gauge assault shot gun were impressed that I was shooting a rifle made in 1940 with ammo using powder that was from the 1930's...and actually hitting the target. Of course, I did not expect to print tight MOA groups; I figured that any group the size of a pie plate at 100 yards would be more than acceptable from this rifle. It did not disappoint me. The new front sight worked perfectly and needed only a little bit of filing to make the height just right. You can see by the targets that the rifle did quite respectable (*in my opinion*) at 25 to 100 yard distances shooting off of a bench rest (*as shown in figures 12, 13, 14 and 15*).



**Figure 15:** A side by side comparison of length between the M38 Carcano and M48A Mauser. The Carcano barrel is shorter by about 3" and the rifle is considerably lighter. Both factors lead to a more pronounced muzzle blast and felt recoil.

### The future

I figured that the surplus ammo would not be available for long (and, as it turns out, AIM sold out of it quickly), so I was also looking into the future for reloading information. I had the boxer primed brass, so correctly sized bullets would be my next issue to overcome. I had read about the .264 vs. .268 issue, and, using a size 10 lead egg sinker, I slugged the barrel and sure enough, it was .268. Others who had reloaded for the Carcano using 6.5mm (or .264) bullets got anywhere from good to very poor results. Many times I read that their shots had key-holed at 25 yards and groups were more like shotgun patterns. As it turns out, Hornady, right about at the time I bought the rifle, came out with a true .268 bullet. I have, as yet,

not tried these bullets, but I will either have to shoot those or find a source of cast .268 bullets to use in this Carcano. To solve the issue of the bullets getting stuck in the seating die, I sent the die back to Lee and they modified it to accept with the wider .268 bullets without issue.

All in all, I can tell you that this Carcano did not turn out to be a *"tomato stake"*. It started out a little on the grungy side and looked quite bad, but it redeemed itself in looks with a little bit of cleaning and faired rather quite well at the range.

A nice little rifle to collect and shoot.

\*I would like to thank Mark Trope and Mike Young for reviewing this article for me.

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