

THE MAUSER MONTHLY

Edition 6, Volume 3 August 1998

The newsletter for fans of Mauser rifles - the REAL "Rifleman's Rifle!"

Editor/Publisher - Ward M. Clark, Aurora, Colorado, USA

Contents:

1. **Reader's comments**
2. **The 98 Mauser sporting rifle**
By Ward M. Clark (wclark1046@aol.com)
3. **Readers' Ads**
4. **Publishers comments**
By: Ward M. Clark (wclark1046@aol.com)

Reader's comments

I have finally got most of my competitive shooting web-page stuff moved to its new home:

<http://arizona.rifleshooting.com/>

My personal stuff, including hunting and shooting will go to <http://bill.poole.com>

Check it out, pass it on, comments appreciated.

Bill Poole, (bill@poole.com)

Ward,

Just keep reminding the American Mauser owners how bad it can get if the Sara Brady's have their way. I just had to spend \$685 to get an "approved" gun safe so I could renew my shooter license.

Thanks for the news letter,

Tom Pike (pikes@ozemail.com.au)

Ward-

This came through my email. You may not think it suitable for publication, but I thought you'd appreciate, anyway. It came to me through 3 or 4 FWDs, so I know not the source, or credibility, but it may not matter!

The female newscaster is interviewing the leader of a youth club:

Interviewer: "So, Mr. Jones, what are you going to do with these children on this adventure holiday?"

Mr. Jones: "We're going to teach them climbing, canoeing, archery, shooting."

Interviewer: "Shooting! That's a bit irresponsible, isn't it?"

Mr. Jones: "I don't see why, they'll be properly supervised on the range."

Interviewer: "Don't you admit that this is a terribly dangerous activity to be teaching children?"

Mr. Jones: "I don't see how; we will be teaching them proper range discipline before they even touch a firearm."

Interviewer: "But you're equipping them to become violent killers."

Mr. Jones: "Well, you're equipped to be a prostitute but you're not one, are you?"

Carl Anderson (candersox@aol.com)

Hi,

On the Brazilian Mauser I mentioned last time:

The misnumbered bolt doesn't retract far enough to clear the stripper clip guide cut into the receiver. Is something broken, or was this how they were designed? To get it to retract far enough, I have to pull out the bolt release lever on the left hand side, but then the bolt slides out completely. The bolt has the "B" in a circle just like the one next to the S/N.

(My initial reply – W)

Kevin -

>

>I'm not sure what to tell you without seeing the gun, other than it sounds >like a long-action bolt in an intermediate action. I'll put the question to >the group in the August Monthly and see if you get an answer.

>

>Ward

Sorry to keep bothering you, but....

I looked at one of my Swedes last night, and the bolt definitely clears the stripper clip guide when it's pulled back, so I'm thinking that I've got the wrong bolt for the gun. Plus the Swede mag follower plate has enough clearance to rise up and block forward bolt travel like it should. The Brazilian doesn't

.

I take it this is definitely a no-shooter?

How hard is it to get 1908 Brazilian Mauser bolts in 7 mm ?

If I find one, do I have to worry about headspace ?

Should I just forget it and try to get an exchange/refund ?

I'm not that crazy about 7mm, I bought it mainly because it was a pretty clean specimen. I wanted a shooter, not a wall hanger.

Kevin M. Kotlarz (kkotlarz@smumn.edu)

The 98 Mauser sporting rifle

By Ward M. Clark (wclark1046@aol.com)

(Reproduced from the Monthly Waffenmeister at www.k98k.com)

The fame of the 98 Mauser action comes not only from its utility in military applications - where in its many incarnations it is without peer among military bolt guns - but also in its ability to cross over into being a basis for a fine custom sporting rifle. Some of the greatest works of art in steel and wood to come out of the shops of fine rifle artisans are based on Mauser actions, with the 98 being the frontrunner.

There are, however, a number of cautions and important considerations to take into account when gunsmithing the Mauser action.

Pre-98 actions.

One of the most important safety notes involves the pre-98 actions. Since this is a forum primarily for the 98, the pre-98's are somewhat off-topic, but the following safety tip is crucial: Pre-98 actions, including the 91 Argentine, 93-95 Spanish, and 94-96 Swede actions, lack sufficient strength to be rebarreled for most modern sporting calibers. **THESE ACTIONS SHOULD ONLY BE REBARRELED FOR CARTRIDGES DEVELOPING A CHAMBER PRESSURE OF 40,000 PSI OR LESS.** The difference between these actions and the 98 series is not metallurgical so much as structural – an excellent illustration and text can be

found in Kuhnhausen's Shop Manual¹. It is best to stick with the cartridges for which these arms were originally chambered. 'Nuff said.

98 Action Types

The 98 actions, in all their variations, are a somewhat different and more complicated story.

There are several different variations of the basic Model 98 action design; these can be loosely lumped into three categories. These are the large ring standard 98, which the GEW98 and k98k actions are included in; the small ring 98 actions, to include the German 98az, G33/40, and the M1910 Mexican rifles; and the large ring "intermediate" actions, typified by the Yugo vz24. Of course thousands of minor variations exist, and addressing all those variations would be impossible in the space allowable here; since this is the 98k page, let's stick to the standard large ring 98's, including the WWII German 98k actions.

The 98k is, as mentioned previously, a standard large ring 98 action, (although some 98k pattern rifles were converted from small ring 98az carbines²) and as such is one of the more versatile for customization. Other common examples of the standard large ring 98 include the WWI GEW98, the 1908 Brazilian contract, built by DWM; the 1909 Argentine, also built by DWM; and the M1912 Mexican, built by Waffenfabrik Steyr.

Metallurgy

The military 98 Mauser actions differ quite a bit, metallurgically, from modern sporting rifle actions.

To clarify a couple of terms; there are basically two manners in which a rifle receiver can fail. The first is a "yield failure," where the receiver ring may be deformed or "ballooned;" this type of failure frequently results in escaped gas and bits of cartridge case.

The second type of action failure is an "ultimate failure" sometimes referred to as a "catastrophic failure." This is where the action basically explodes, and results in chunks of receiver flying all over the place, to include imbedding themselves in the shooter's face and other vital regions.

Modern sporting actions (to include the newer Santa Barbara and Mk X Mausers) are made from hard, high-carbon steel, and are pretty homogenous throughout. Older military Mausers are made from softer, low-carbon steel that is heat treated or "case hardened" resulting in a fairly soft receiver with a hard shell or "case."

The result of this type of construction is a receiver with lower yield strength than a modern gun, but a higher ultimate strength.

What makes the large ring 98 action capable of handling higher pressures than the pre-98's is the design of the receiver ring. The large ring 98 receiver ring measures 1.41" in diameter as opposed to the pre-98's 1.3"; also, the 98 action has a longer thread-bearing surface, improved torque bearing surfaces, and a large reinforcing web inside the receiver ring.

It is generally considered that the standard large ring 98 action is capable of handling most modern standard length sporting cartridges.³

Gunsmithing the 98 Mauser

¹ "The Mauser M91 Through M98 Bolt Actions – A Shop Manual." Kuhnhausen, Jerry, 1991, VSP Publishers, pg. 160

² "Mauser Bolt Rifles" Olson, Ludwig, 1976, F. Brownell & Son, pg. 118

³ Kuhnhausen, pg. 86

Now I'll admit that I've never based a custom sporter on a WWII 98k action - because I've never found an "action grade" gun or disembodied 98k action in a condition suitable for "sporterizing." I have, however, used a variety of Mauser actions in building custom rifles, including a number of standard large ring 98's.

Now I consider it to be somewhat sacrilegious to cut up an original collectible military rifle for customizing, and I've got a few originals in the rack myself.

I try to buy disembodied actions where I can. I will also scour gun shows, pawnshops, and estate sales for "action grade" guns - rifles that have already been modified to some extent, making them fair game for gunsmithing.

To convert the military 98 action to "sporter" configuration involves four basic steps: 1) reforging or replacing the military bolt handle with one that will clear a low mounted scope; 2) install a low-swing or side-swing safety, again to clear the scope; 3) drill and tap for the scope mounts themselves; and 4) restocking. Many excellent Mauser sporters have been turned out with the original barrel, but given the condition of many surplus guns currently finding their way into the States, rebarreling sometimes becomes a necessity.

With a bit of luck, you can find a Mauser action or barreled action with the gunsmithing work already done.

A good example would be a rifle I built for my own use elk hunting; a 1908 Brazilian contract action, built by DWM, that formed the basis for my .338 Winchester Magnum, "Thunder Speaker."

My original intent was to use one of the large ring '98 actions I had in the shop, fit a new barrel, stock, bolt handle, etc., which would have entailed no small expense. The expense of this sort of work can easily outrun the cost of a brand-spanking-new Remington 700 or Winchester 70.

In my case, fate chose to intervene at the August, 1996 Tanner Gun Show in Denver.

While sitting at my table, trying in vain to part with a few of my surplus Mausers, when a gentleman walked by with a rifle slung over his shoulder, the sign on it reading: "Mauser rifle, .338 Win Mag."

Like a trout faced with a well-placed dry fly, I rose to the bait.

The rifle was the aforementioned 1908 Brazilian (large ring 98) action, with a teardrop bolt handle, Buehler safety and Weaver bases. The 26" heavy sporter contour barrel was Mag-Na-Ported, a plus when you are talking about .338 Mag recoil levels.

Since the barreled action was already in good shape, I made few changes - I just replaced the military two-stage trigger with a Bold modular, added a Bell & Carlson Kevlar stock and a Simmons Aetec 2.5-10X scope. I loaded up some ammo with W-W brass and 210 grain Barnes X boattails.

The first trip to the range was enlightening. Between the Mag-Na-Porting, and the straight-line design of the Bell & Carlson stock, the .338 didn't seem to have any more perceived recoil than a lightweight .308. Very pleasant to shoot; I ran through all 20 rounds I had loaded before I realized it. Even more pleasant were the results on the other end of the lane; groups averaged about 1 1/4", with the largest going just over 2". The Simmons Aetec scope proved superb, very bright and clear.

Cost vs. Benefit

When the project was completed, I had a high quality .338 Win Mag sporter with a total investment of about \$500 - pretty much what I'd have paid for a new commercial gun.

Thunder Speaker is a pretty good example of the kind of "custom" work that any reasonably capable gun crank can do by him or herself - no rebarreling or action modification involved, as that work was already done. These kinds of project guns are readily available, often at bargain prices.

Cost isn't all that the true gun crank considers, however, and the chance to take game or gather ooh's and aah's at the range with a unique sporting arm of one's own making, will often outweigh mere financial concerns. I know it does for me!

Inspecting the 98 action

When considering an action for extensive gunsmithing, the prospective custom Waffenmeister should inspect the following areas closely:

- 1) The bolt face should be clean and free of pitting and erosion.
- 2) The extractor should fit tightly and function correctly with a dummy cartridge of the appropriate caliber.
- 3) The locking lugs should be clean, rust-free, and show minimal wear.
- 4) Cocking piece/sear engagement should function smoothly and flawlessly – ditto for the safety.
- 5) Ejector box should have good spring tension and function freely.
- 6) If the original barrel is to be used, the bore should be clean and free of rust and pitting.
- 7) Visually inspect the entire action for rust and/or pitting. I've seen a few actions for sale that were pitted badly enough to be potentially dangerous.
- 8) If the action has been drilled and tapped for scope mounts, ensure the screw holes are not in the area of the barrel threads or reinforcing web.

The action should also pass the following standard function check.

- 1) Close the bolt and apply the safety.
- 2) Pull the trigger. Nothing should happen.
- 3) Without operating the bolt, turn safety to "fire." The sear should remain engaged. If the striker falls when the safety is disengaged, you have a **SERIOUS SAFETY PROBLEM**.
- 4) If the sear remained properly engaged in Step 3, pull the trigger. The striker should fall normally. The trigger pull should not be gritty or stiff.

If the action passes all of these tests, it should be a good candidate for your custom project.

Gunsmithing Do's and Don'ts.

Do's:

- Have your action or barreled action inspected by a professional gunsmith prior to any customizing. If you are using the barrel already on the gun, the inspection should include headspacing.
- When rebarreling, invest in a quality barrel. The barrel is the heart of a rifle, and a quality tube from Douglas, Shilen or ER Shaw will be worth the extra bucks.
- True action and bolt faces and lap locking lugs. This process evens bearing surfaces and improves inherent accuracy.
- Use an aftermarket modular trigger if desired. I've had excellent results from Timney, Bold and Dayton Traister triggers. Keplinger makes a very good single-set trigger for the 98 Mauser, which does require professional installation.

Don't:

- Open the feed ramp to allow feeding of .300/.375 H&H, or full-length magnum, cartridges. This removes metal from the area immediately behind the lower locking lug – NOT a good practice.⁴
- Trust chamber stamps on used guns. A Cerrosafe chamber mold should be done on any and all used guns.
- Fire any rifle with an improperly functioning safety mechanism.

⁴ Ibid., pg. 86.

- Fire any 7.9x57mm Mauser manufactured prior to 1905 without first miking the barrel. A few J-bore (.311) guns are still extant – and may generate dangerous pressures if fired with S-bore (.323) cartridges.

And finally – please – don't cut up or modify an original collectible! There are ample action grade guns around, and also ample collectors who will be willing to take your original off your hands.

Into the next Century

It's often said "the more things change, the more they stay the same," and this certainly applies to rifle design – given Winchester's and other gunmakers run back to the original controlled feed design of the 98 Mauser. Paul Mauser's M98 has set the standard by which all other bolt action rifles are measured for 100 years now. I'm confident that it will continue to be the gold standard of bolt guns well into the next century.

Reader's Ads

I have a model 1908 Brazilian Mauser w/ a mismatched bolt. Left side of chamber reads: script "B" 76xx "B" in a circle underneath serial number "Nn" Right side of chamber reads "MOD 1908". Brazilian crest is on top of chamber. It's one of the nicest surplus Mausers I've seen. Great rifling, bluing, and wood. I don't think it's been fired since the early 1960's.

When the bolt is fully retracted, the magazine follower cannot rise up and block forward travel of the bolt, nor does the bolt clear the stripper clip guides at the rear. The bolt # is 7919 and it's way too long. We think it is from a long-action Brazilian Mauser (probably 30-06?). All the visible numbers on the bolt match. The bolt handle knob has a "B" in a circle, the bolt handle stem has a script "B" and where the bolt handle stem joins the bolt body I see "7919" and what looks like a script "e". At the rear of the bolt (striker piece?) there is what looks like a script "a" at the 12 o'clock position.

So, I need your help. I need a proper sized bolt to make this Mauser shoot again. I am informed that I probably should have the headspace checked as well. How much, who, and where? I've also got a very nice long-action complete Brazilian bolt for sale/trade. How much is one worth?

I'm also missing the lower sling swivel. Not the mount, just the oval piece.

Kevin M. Kotlarz (kkotlarz@smumn.edu)

Publisher's Comments

By: *Ward M. Clark* (wclark1046@aol.com)

Another month gone by, and in the usual summer fashion, the Monthly is shrinking a bit... But with September bringing colder weather to most of us, I'm sure the summer range stories and shooting reviews will be coming in! There's a million great stories out there waiting to be told, and I can't keep the Monthly going without them – fortunately you've all been great about providing material!

The summer here has been hot – got hotter still when I had to face the wife after plunking down \$375 for a piece of Grade AA Circassian for the 94 Swede. I managed to finesse her on that one, though – although I had to pass on a decent 1909 Argentine action at a recent gun show!

Thunder Speaker is ready for elk season, having produced several 100 yard groups under 1 ¼". I have spotted a large bull in my usual drainage in the Service Creek Wilderness – if all goes well he'll be in the area opening day...

We picked up several new subscribers this month – to you new folks, welcome! I hope you'll enjoy the Monthly as much as I enjoy putting it out.

And so, until next month -

Good Shooting!

- Ward