THAMES VALLEY GUNS
ARMOURERS NOTES

Mauser M48 Budget Sniper Rifle

Introduction

Classic Mauser's are popular rifles and very sought after. As a result in the UK a standard German 98K in good condition will be hard to source and secondly you can expect to part with around £800.00 plus at 2012 prices.

Therefore when the Yugoslavian M48's came onto the market at around £250.00, they proved to be popular for those on a limited budget. The importers website stated the rifles were in a un-issued condition but this was slightly mis-leading. The rifles are clearly ex-war stock and have come from a warehouse and were covered in preservation grease, hence un-issued statement, however once you remove the grease, the condition of the rifles vary from new to pitted barrels, generally the standard of blueing is good, with the woodwork always being bruised but sometimes fractured. Having purchased a number of these rifles, I learnt my lesson and you must always specify your specification when ordering.

Whilst I was restoring a number of M48's at this time, I was also building various replica sniper rifles of one type or another which which were fairly expensive to build. With the low price of the M48, it was only logical that sooner or later a customer would request that I built a budget sniper rifle utilising the Yugoslavian M48 rifle. As my customers where buying M48's as budget "German Mauser's" my first M48 Snipers were built utilising replica rings based on German designs and using German scopes, however technically this was incorrect as there was a dedicated Yugoslavian sniper rifle in existence, designated the M48/52.

Donor Rifle

The are a number of benefits to building a M48 as a sniper rifle and in the German format. The inexpensive cost of the M48 is its most attractive virtue, availability and thirdly the ease at which you can convert the rifle. Whilst a good rifle has a new barrel, blueing is reasonable, the bolt handle is cranked, the overall condition of the rifle is not as good as a German 98K. Build quality is slightly poorer with various machining marks, which results in a less cosmetically pleasing finish, but this does not mean the rifle is not reliable and accurate. The rifle shown at the bottom of the page was my first customised M48, it was bedded, re-blued, woodwork restored and the trigger tuned. At 100yrds it reliably produced 2" groups with no mis-feeds, which meant there was no difference in terms of performance between the M48 and the 98K.

There are two versions of the rifle available in the UK, the M48 and the M48A, the principle difference is that the M48A has some parts that has been manufactured from press steel stampings to reduce costs and to speed up production. Because I was going to convert these rifles into Sniper Versions, I wanted the better quality rifle and therefore only utilise the M48 version.

Mauser M48 Budget Sniper Rifle

Because the German format rifle was being built as a budget Sniper, this rifle is strictly a no frills rifle and to keep the cost to a minimum, I would, strip, degrease, polish, restore the woodwork, fit & align the rings, fit a suitable scope and function test - nothing else.

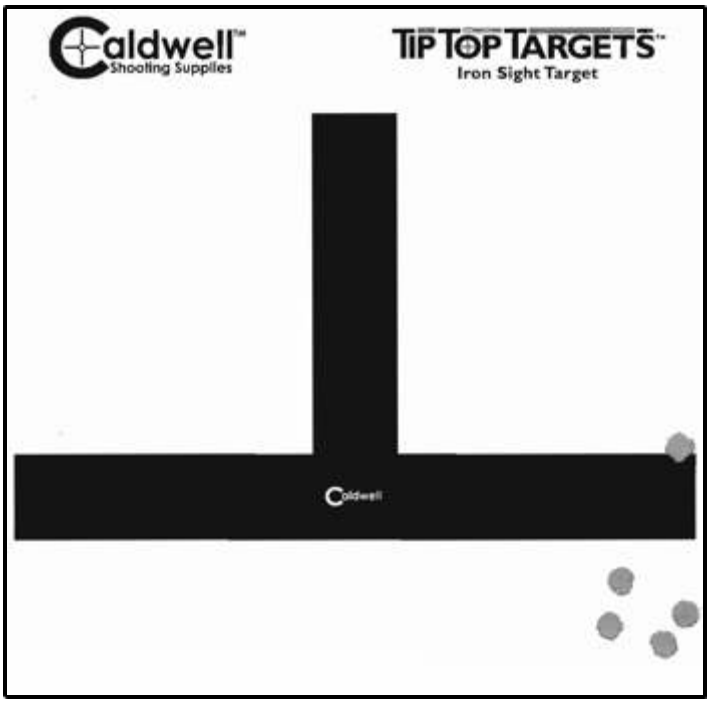
Literature

There are many publications concerning the Mauser rifle and probably one of the best is Mauser Military rifles of the world. However these are generic books dealing with Mauser's of all types including the M48. If you need more detailed information then one of the best books is Serbian & Yugoslavian Mauser Rifles by Branko Bogdanovic and published by North Cape Publications. It details all the various versions in detail including the sniper rifles.

Turret Rings

Accu-mounts in the US produce good reproduction turret mounts/rings for the M48 as can be seen to the right. There are of the split type which facilitates easy fitting and are well made.

Fitting them is not a simple case of using a portable hand drill, drilling and tapping. The rifle should be stripped, mounted on a milling machine bed and the barrel clocked to the bed. The rings should then be fitted so they are parallel with the bore and all this requires the skills of a good gunsmith/Armourer or toolmaker. In practice fitting these rings proved fairly complicated to fit as the holes for the mounting screws have to drilled and tapped at an angle and the rings clamped in such a way they would not move during the drilling process. The rings are fairly substantial in size and are only secured by two small screws each. Therefore I recommend a strong adhesive such as Loctite studlock 270. I had two other minor observations that you should be aware off; the rear left hand screw securing the scope ring had to be reduced in length to avoid it striking the clamp and there are no instruction for fitting.



These turret rings have certain other advantages, they have a see-through capability allowing the use of your iron sights, there shear height allows you to fit a scope with the current bolt handle, they have the ability to allow you to remove your scope and refit it without having to re-zero and they have screw adjustment for windage built into the base, ideal for the scope shown below which only has elevation adjustment.

Initial Range Test

Any classic rifle you plan to fit a scope too, modern or otherwise it is an absolute must that you test fire to ensure its capability to shoot a tight group.

M48's are covered in preservation grease, so you must degrease the bore, chamber, receiver, bolt, bolt face and trigger mechanism to avoid any potential dangers. Ammunition for the test was 200gr FMJ bullets, Remington brass and 45.5gr of Vihtavuori N150, straight out of the Hornady reloading manual - nothing special. The rifle was shot from a bench, at 100yrds, using Ironsights and a bag, thereby taking some of the "human element" out of the equation.

The rifle was not zeroed and my first shots fell onto another target, so using the other target to aim off I achieved the 3.5" group as depicted. If I discounted the very top round the group was considerably smaller, approximately 1.25". As the rifle was "off the shelve" still largely covered in preservation grease, I considered this very reasonable. Proof that these are capable and accurate rifles.

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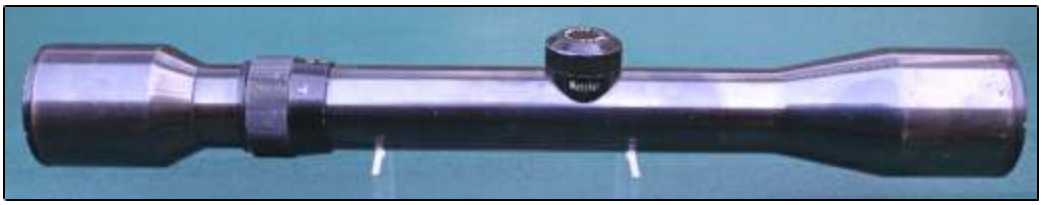
Scope



The turret rings are 26.5mm but Accumounts supply 25mm inserts so you can fit a modern scope, if you wish. I had no intention of doing this, the rifle was being built in a German format so it is crucial you purchase a matching German steel tube scope. German WWII sniper scopes are expensive and this rifle was being built on a budget so therefore I had to consider an alternative, such as a German scope from the 1950's, which have all the attributes of the WWII scope, just a little bit better. In this case I was going to fit a Wetzler Sornet as can be seen below.

I am unsure of this scopes history but if the Internet is to believed these Wetzler scopes were made for the Frankonia organisation around the 1950's and possibly by Schmidt & Bender. Either way they are reasonably priced, available, appear well made, they have a steel 26.5mm tube, No1 German reticule, x5 magnification and in the case of the Sornet a single elevation turret. An ideal replacement for an otherwise very expensive WWII scope.

Action

As with all my rifles, budget model or otherwise, the rifle is completely stripped, completely degreased, all the parts are polished thereby removing any debris, dirt or rust and the rifle rebuilt ensuring it has no fault and meets the original manufacturers specifications.

Stock

As this was a no frills rifle the only other work that was being applied was some TLC (tender loving care) to the woodwork. The woodwork on these these rifles varies from bruised, broken or fractured so it it worth making repairs if you intend to restore the wood.

As the rifle is completely covered in grease, this included the woodwork and so therefore I stripped of all the wood and the woods metal components. Degrease all the components and then restored the stock. The woodwork on this particular rifle was sound but bruised but as you can see from the above picture, the wood restored really well. The M48 stocks utilise Elm or beech and can be naturally very oily which is murder on abrasives and certain wood finishes will not cure, therefore you must apply a grain sealer to achieve a decent finish. Having said that the stocks I have restored so far have restored really well.

Assembled Rifle

The rifle assembled well with only one issue. The upper hand guard will not fit with the new rings fitted. Therefore you must remove approximately 3-4mm from the rear of the handguard and ensure there is no metal to wood contact. It is important because recoil will damage the handguard if you fail to adjust for this. Because this was a no frills rifle, I did not tune the trigger or bed the action, which does have the advantage of reducing the build time considerably.

I checked the rifles headspace, firing pin protrusion and cycled some drill rounds through the action to ensure the rifle fed, extracted and ejected correctly. In cycling the action I also checked to ensure the bolt handle cleared the scope, which with classic rifles is something you must be cautious off.

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As you can see from the pictures the rifle looked good but at the end of the day, "proof was in the pudding" and that meant a range and accuracy test.

Prior to any range test I utilise a laser to align the bore and the scope, this is a very cost effective method to reduce reduce your round count when zeroing. It also lets you test the rings and the scope adjustment mechanisms and identify any potential fault prior to a trip to the range where any repair work is limited.

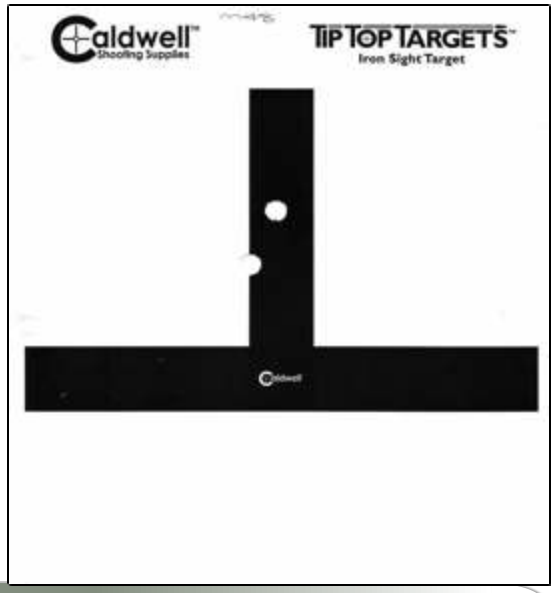
This test did identify a problem in that the front ring sat too low or the rear ring sat too high, either way the scope sat low at the front and would not align with the bore. I rechecked and notified the manufacturer hoping they would have a solution. The response from the manufacturer was there was no problem. I had another set of rings and there were identical with the same problem. Now either my rifle had receiver dimensions different to those in the US or the rings are incorrect in some way but the fact was that I did not have the time, equipment to identify who or what was at fault, I simply needed a solution. The solution is to modify the steel 25mm inserts and pack the front of the scope up by approximately 1mm.

Range Test
The purpose of the test was to ensure the rifled functioned 100% but to also specifically test the following:

1. Stability of the scope
2. Scope rings and base
3. Accuracy

Shooting from a bench and rest the scope and rings functioned well with no obvious faults. I fired 20 rounds and nothing shook itself loose and there was no scope creep. I zeroed the scope and achieved a 0.94" group as shown on the right, which for a rifle which had not been "fine tuned" was pretty good.

I am currently building another rifle at the time of compiling these notes and it will be interesting if I can achieve a similar group with the next rifle or was this rifle a "one off" regards accuracy.



Summary
Below is the finished rifle. There is a tendency to reject these rifles because they are not German K98's and this is reflected in the market place, together with the price. This is a shame because whilst the overall engineering finish is not as good, these are capable rifles with and accuracy capability similar to the K98.

Bedded and tuned they are accurate as any military rifle of there type and era and quite frankly once the wood is restored it comes up really nicely and in many cases better than the 98. Therefore as a summary the low cost of the rifle coupled with the rifles good performance, makes this an ideal rifle to convert into a military WWII Sniper rifle.

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