

Mauser 105 .22LR S/A Rifle

Introduction

Having spent a considerable amount of time studying the Mauser 201, I mentioned in my Mauser 107 Armourers notes that I intended to explore some of Mauser's other rimfire designs from the 1970's & 80's.

My follow up rifle was the Mauser 105, a magazine fed, semi automatic in .22RF. As with the 107, this rifle was aimed at the budget end of the market and appeared rather scarce in the UK market place as my attempts to find one, took some time. Searching the Internet I finally found one in Derbyshire. The dealer was pretty good and after a quick phone call to discuss the rifles condition, the rifle appeared on my doorstep within a few days.



As a paid only a small figure for this rifle, I did expect a rather run down rifle. Upon initial receipt, the rifle appeared in good condition for its age, blueing was a 100% and the lacquered finish on the stock was chipped here and there but nothing major. As appears customary with these rifles, the rearsight was missing as the previous owner(s) removed the rearsight to gain clearance for the scope and then mislaid them, plus in this case the previous owner had made a right hash at fitting the QD studs.

Therefore the plan of action was to strip, clean, photograph the components, rebuild, fit a temporary scope and test fire. Assuming all goes well, the final stage would be to strip, refinish the stock and fit a period scope. The picture above shows the rifle after stage one, having been completely stripped, cleaned and serviced and a temporary scope fitted.

Literature

Unlike the Mauser 107, there is some literature to be found on this rifle, a brief mention in the books such as "Rifles of the world" by John Walter, the odd page on the Internet and a reasonable article in October 1988 Guns review magazine.

Brief History

Voere started in Germany and expanded into Austria with both companies manufacturing small arms. In 1986 the German company ran into troubles and was sold to Mauser who continued to manufacture small bore rifles. For detailed information visit Voere's website at <http://www.voere.com/en/history.html>. While purchasing the company, Mauser must have also purchased the intellectual rights and manufactured some of Voere's rifles under the Mauser brand. This provides the explanation as to why there are two very similar rifles in the market place but with different brand names. The Voere version is known as the model 2005 and the Mauser version was renamed the Mauser 105.

These rifles were only produced in .22LR and targeted the lower end of the semi-automatic rimfire rifle market. There were two versions, a basic model with a plain Monte Carlo beech stock and a deluxe model with more elaborate checkering and a darker lacquered finish. There are certain similarities with the Mauser 107, those being the stock, the front and rear sights.

General

This is a blow back semi-automatic rifle which fires from an open breech, which makes it very unusual when compared with the plethora of semi-automatics which shoot from a closed bolt. In essence, the closed bolt system involves the bolt taking a round from the magazine and feeding it into the chamber, where the action then stops until the operator pulls the trigger. With the open bolt system, the major difference is that the firing pin is fixed and the bolt is held to the rear on the sear. When the sear is released the bolt moves forward, feeding a round from the magazine into the chamber and automatically fires the round. The bolt is blown back, ejects the round and then is held to the rear on the sear.

Thames Valley Guns

Mauser 105 .22LR S/A Rifle

The rifle has a overall length of 40.5"; the barrel has the same profile as the 107, is the same length at 21.5" long and threaded for a moderator. Rearsight and foresight are identical to the 107. The rifle is equipped with a ten round magazine and a two stage trigger. With a scope fitted the rifle weighed 6.11lbs unloaded.

Receiver

As this is a open bolt system the receiver is somewhat different. The outside diameter of the receiver is 1.1" which is substantially more than a typical rimfire bolt gun. There is no locking mechanism as the bolt functions utilising the blow back principle. There is no safety catch but the bolt can be held to the rear and off the sear by engaging it in the safety slot as shown in the top picture and the receiver is milled for the customary rimfire scope rail



At the front of the receiver, a large section is milled away to facilitate the ejection port and directly beneath this is the magazine well. The barrel and its sleeve are secured by two very substantial role pins and may be sweated in place, however I am unsure of this. The barrel sleeve supports and secures the barrel within the receiver, acts as the feed ramp and as a emergency safety stop. When the bolt is engaged in the safety slot it is rotated 30° out of alignment with the barrel sleeve and is held on the cocking handle. Should the cocking handle fail, the bolt will be driven forwards by the mainspring and will jam against the rear of the barrel sleeve as it is mis-a-aligned, therefore being unable to strip a round from the magazine and fire the gun. If the cocking handle is knocked out of engagement with the safety slot it will re-engage with the sear and again not fire the gun.



At the rear of the receiver is a large screw cap which secures the mainspring, its guide and the bolt. The screw cap is secured by a grub screw to prevent its unscrewing, however should the cap unscrew it can only rotate 2mm before engaging the rear of the stock, thereby preventing unscrewing any further.

Bolt Assembly

As one would expect for a blow back design, the bolt is a fairly hefty lump of cylindrical steel, however unlike modern designs it is of high quality and well made. You may also note from the pictures that the firing pin is vertical, runs the full length of the bolt face and there is no extractor or ejector.

As the bolt is propelled forward under the force of the mainspring, the lower section of the bolt face strips a round from the magazine and feeds it into the chamber and stops. The firing pin/bolt continues to move forward crushing the rim, striking the primer in two places, thereby ensuring an extremely efficient ignition. As part of the blow back principle the fired case moves backwards with such force that it drives the bolt backwards, past the magazine until the mainspring, friction and the weight of the bolt overcome the energy of the fired case. The bolt then moves forward until it is arrested by the sear. As part of the bolts rearward movement, the empty case is deflected of the bolt face and out of the ejection port.



Mauser 105 .22LR S/A Rifle



The correct terminology for this system is API or advanced primer ignition, not “slamdunk” as I have heard some amateur experts call it. This is an extremely efficient and reliable mechanism, however there are some minor disadvantages the reader should be aware of. You can only cycle rounds from the magazine, never hand load, you should avoid dry firing, as the bolt smashes into the barrel and barrel sleeve, hence the reason for the substantial roll pins securing the barrel sleeve. In theory when the heavy bolt is released, it shifts the centre of gravity and therefore affects accuracy but in practice I found this rifle to be fairly accurate. Lastly you should never carry the rifle with a round in the chamber and the bolt forward as potentially any knock could fire the rifle.

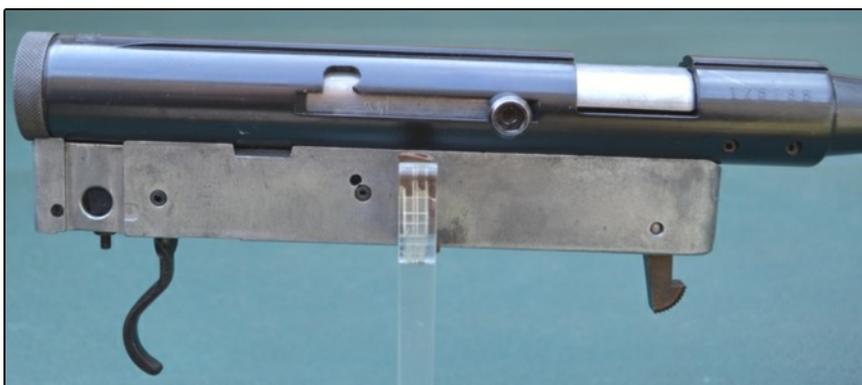
From a point of interest, other firearms that use the API system are the British Sten and Sterling sub machine guns. The Guns Review article also highlights that the 105 was ambidextrous as it had two cocking slots either side of the receiver and by unscrewing the cocking handle, one could convert the rifle from right hand to left hand. My model does not have this option and I am unsure why this option was discontinued.



Trigger and magazine housing

The trigger and magazine housing is 7” long and fits almost the entire length of the receiver as can be seen above. It houses the trigger and sear mechanism, the magazine and its retaining catch. It is manufactured from an aluminium casting and is identical to the Mauser 107, albeit with different internal components.

Unlike the 107 the housing is secured by a single screw as the second screw hole opens up onto the receiver end cap and therefore can not be utilised. Removing the screw permits the housing to fall free from the receiver plus the sear spring and it is crucial that you are aware of the sear springs location for re-assembly purposes. The trigger is manufactured from sheet steel and together with the magazine catch are the same as the 107. However this is where the similarity stops.



As with many semi automatic firearms there is a sear and a disconnector and in the case of the 105 they share the same axis pin. The sear retains and releases the bolt, however it is the disconnector the permits the sear to rise and retain the bolt regardless of the triggers position, therefore

creating the semi automatic action. For the bolt to cycle for a second time, the trigger must be released to allow the disconnector to re-set before the sear can be released again and the cycle can continue.

The magazine housing provides support and the correct presentation angle for the magazine, which is secured by the magazine catch. This catch is common to the Mauser 107 and the 201 and likewise has the same shortcomings, i.e. it can easily be released accidentally.

Whilst basic, the trigger assembly is a clever design, effective and reliable. Length of pull can be adjusted but with most open bolt designs there is no adjustment for the weight of pull and the trigger pull is a modest 5lbs. However in practise I found the

Thames Valley Guns

Mauser 105 .22LR S/A Rifle

Trigger acceptable and did not interfere to much with the rifles accuracy.

Barrel

The barrel is 21.5" Long, with six grooves and a 1 in 16 twist rate. It is a typical sporter .22 barrel which is 0.63" at the chamber and



remains parallel to the muzzle, which makes it almost identical to the 107 barrel. The only difference that I am aware of is that this barrel lacks the 107's extractor ways.

The muzzle is crowned and threaded for a moderator at the factory and therefore does not require entry into the UK proofing system. Thread is 1/2 x20UNF and is fitted with a thread protector.



The receiver is stamped with the serial number and has the Mauser crest. The barrel is stamped with Mauser's title, model number and calibre. Blueing is good but lacks the quality and depth of the Mauser 201 but that is expected for the type of market this rifle is aimed at.

Iron sights

The original front sight was fitted to this rifle but the rear sights were missing. The rearsight is a ramp, graduated from 25 - 200 meters and utilises a slider for elevation adjustment. The ramp fits in the barrel and windage can be obtained by moving the entire ramp laterally within the dovetail.

The rearsight sits to close to the scope rail and to get the best out of this rifle the shooter should fit a scope, however this cant be effectively done without removing the rear sight.

Woodwork

The stock is manufactured from beech, has a lacquered finish, has a basic Monte Carlo format, machine checkering to the pistol



grip and simple sling swivels. Internally machining is good and the barrel and action fit well. The action is secured using a single main screw and the barrel does not float as it is designed to sit on the forend. The trigger guard is a simple press steel design, sits on a fascia plate and secures direct to the stock. Butt plate is a simple plastic affair that in this rifle, has taken an impact or two, whilst OK if I can find a new or serviceable plate, I will replacement it.

Whilst I am not a fan of the single main screw to secure the action/barrel it does in this case appear to be effective but this is largely down to the large mass of the magazine and trigger housing.

Externally this stock is identical to the 107 with the exception of a small longitudinal recess on the right hand side to permit the clearance of the bolts cocking handle. Internally the stocks dimensions are more spacious to except the 105's larger receiver, barrel sleeve, lack of the safety catch recess and the recess at the rear of the receiver bed for the 107's bolt clearance has been omitted.

Mauser 105 .22LR S/A Rifle

Magazine

Looking at the magazine it appears identical to the 107 and the 201. The only obvious difference is the magazines 10rd capacity and the word Aut (Auto) on the base plate. They are good and reliable magazines that together with the magazine housing provide reliable feed, which is exactly what a shooter requires.



Range Test

Whilst I brought this rifle to evaluate and add to my Mauser collection, I very much intended to shoot and enjoy its use. Use was going to be mainly at my 25yrd in-door range and occasionally on a 50 - 100yds external range.

As this rifle came onto the market in the late eighties I intended to fit a period scope. Initially it was a 1960's Lyman x4 but eventually I planned to fit a 1980's Lyman 3-9x38 variable which was more fitting.

I experimented with various ammunition types, sub-sonic hollow points, standard target and high velocity solids and couldn't get any to misfeed or fail. As semi-auto's go I have yet to find a more reliable rifle.

Whilst I mentioned the magazine catch as a design shortfall, I identified another issue when cleaning the rifle after shooting. When removing the bolt you must ensure the bolt is cocked and the sear depressed. This is unusual as the spring is under pressure and you must take this into account when releasing the receiver cap, otherwise cap and spring go flying. If you release springs, the bolt is forward, the sear is forward and you cant remove the bolt or re-insert it as it will jam on the sear.

Summary

If you purchased a budget rifle in the 1930's and anywhere up to the late seventy's, early eighty's, looked after it, you could expect



it to last you a life time. However with the introduction of the 10/22 type rifle, you now had a product with a limited life time expectancy and a factory build quality that reflects that design criteria. The more recent crop of MP5 and M16 clones adds a new dimension to poor build quality and short life expectancy with general comments from shooters "built like airsoft guns" summing up my experiences. The Mauser 105 comes from probably the last era when semi auto rifles were made of traditional materials and were made to traditional standard.

For a simple mechanism, this is an extremely good design and I have yet to incur a misfire, regardless of the type of ammunition used.

Mauser 105 .22LR S/A Rifle

Supposed disadvantages of the open bolt design are as follows; less accurate, must be fed from a magazine, triggers are always a bit heavy, 5lb in this case. However in my opinion the advantages far outweigh the disadvantages, for example:

1. Far more reliable, as the breech block is moving all the time and strikes two parts of the primer.
2. Requires less parts, i.e. the firing pin is an integral part of the breech block, no extractor or ejector.
3. Is not ammunition selective.
4. Requires less cleaning.
5. In the case of this rifle, very well made, no plastic or poor quality cast metal in sight, even though it was designed for the economy market.
6. Good longevity, in this case over 20 years, with no sign of wear.
7. I regularly shoot a 6mm group or better with this rifle at 25yds, so it is accurate enough.
8. From the manufacturers standpoint, cheap and easy to make.



Budget or otherwise this is a superb .22LR semi automatic, it is well made, reliable, accurate and of modest price. Whether it be shooting for fun in a range or as a working rifle on a farm, the Mauser 105 will not let you down.

First published: 18 Feb 2013

Updated:

Paul Green

Thames Valley Guns, England

www.thamesvalleyguns.co.uk

Email: paul.tvg@ntlworld.com