

Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle

Introduction

I think it was in 2013 that I read an article in the British shooting magazine “shooting sports” about the new Steyr SSG 08. Normally I would treat the article with an element of caution as I am untrusting of high street shooting magazines and their level of technical



accuracy but in fairness they are good for finding new products that have recently come onto the market place and there was sufficient material in this particular article to retain my interest. Since that initial article I have kept abreast of the SSG 08 through various defence publications and to be honest have found little to diminish its impressive performance. However it wasn't until late 2016 that I was in the financial position to purchase one and to find out for myself the pro and cons of this rifle.

As I have mentioned on numerous occasions, I do not often write an armoured report on new rifles for the simple reason, everybody else is doing the same thing, plus I don't particularly find new rifles very interesting. However military sniper rifles are an exception to the rule and having written numerous reports on more classic sniper rifles and therefore I thought it was high time to write a few more reports on more modern designs.

Before we proceed I feel there is a note of clarity required as to what is actually a sniper rifle. Currently the term “sniper rifle” has ramifications in our politically correct world. More recently United Nations mandates, labelling anything as military will automatically get companies bogged down in government bureaucracy and import and export restrictions. Therefore modern manufacturers tend not to advertise their rifles as sniper rifles, they are sporting, hunting or marksman's rifles as they want to reach a large a market as possible. Police forces do not like to term because it has the wrong image and therefore they tend to use the term marksman or sharpshooter, but police rifles are quite often marksman rifles, there are not a sniper rifle as they are designed for a completely different working environment. Therefore what is a modern sniper rifle? well in my opinion, it must be manufactured to military specifications, designed to cope with the rigours of the modern battlefield, have provision for military spec optics and night vision, be suitable for the use by dedicated sniper teams and be able to engage military type targets, at all combat ranges and in all environments. This extremely high level of specification far outweighs the specifications for any other type of accurate rifle and therefore technical dictates a sniper rifle. With such a high specification many designs fall by the wayside but probably the best example of a successful sniper rifle design must be the Accuracy International range of rifles.

History

The SSG 08 is a modern rifle that was first introduced in 2009 and therefore has little in the way of history. It is currently in use by the Austrian Army and by their counter terrorism unit but I am unsure of what other military forces use this rifle. However for the



reader I feel it is prudent to mention the Steyr SSG 69 (top image). This was a highly successful sniper rifle produce by Steyr and use by some twenty four military and police forces around the world for many years. Since its introduction in 1969 it became such a successful design that Steyr only discontinued production in 2015. But whilst the SSG 08 has replaced the SSG 69 in Austrian military service, they are not natural successors. The two rifles are totally different designs and the SSG 08 is a development of the SSG 04 (bottom image) that clearly has civilian heritage.

Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle

Receiver

The first thing you notice about the 08 receiver is its high build quality but a rather simple internal and external appearance.



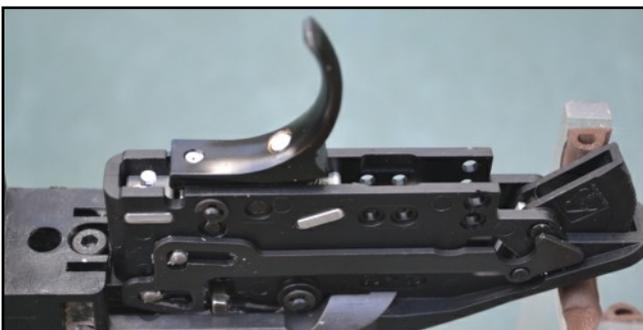
The internal surfaces generally lack the more complicated machine processes found on earlier generation rifles and has only one internal cam face. This is typical of modern manufacturing techniques making the receiver much easier and more cost effective to manufacture.

One of the major differences that separates the SSG69 from the more modern SSG08 is the method of bolt locking. The SSG69 has a traditional rear locking lugs mounted on the bolt body and engage in the

corresponding grooves in the receiver body. The interior of the SSG08 receiver lacks these locking cams and located between the barrel and the receiver is two rotary bushes, which when engaged by the bolt's locking lugs rotate and provide the locking action. Likewise it is the same rotary bushes that when the bolt is being unlocked provide primary extraction. I have not had the opportunity to see these bushes but suspect they are a clever solution to mass production by reducing the need for expensive machines and tooling to cutout the traditional locking lug, ease assembly issues with head-spacing and when wear does take place the bushes can be easily replaced. However there are downsides, overzealous cleaning can miss align the bushes making the rifle inoperable until the bushes are re-aligned by an Armourer (a point highlighted in the user manual) and as a sniper rifle I have no experience of how these bushes would function in a hot and dusty environment. This issue may have been addressed with the SSG08-A1 as I noticed it is fitted with a ejection port dust cover, thereby preventing the ingress of some foreign matter.



On the right side of the receiver is the ejection port which varies in size depending on the calibre, however the port is of sufficient size to be able to get you finger in to lever out empty cases etc. Behind the ejection port is the bolt handle recess which permits the bolt handle clearance but as far as I can ascertain serves no other function other than as a safety lug should the rifle suffer a catastrophic failure. On the left side of the receiver is the companies title, logo and on the top of the receiver is a 20 moa pictinney rail.



On the underneath of the receiver there are a number of machined faces, recesses, slots and screw threads to permit the fitting of various components, starting from the front is the recoil lug, this is pinned and secured in place by a hex nut which also acts as the location for the front king screw. Behind this, is the magazine recess and the plastic magazine housing which we will discuss in more detail in the magazine section.

In between the trigger mechanism housing is a second block which helps secure the magazine housing, the front of the trigger mech and also acts as the location for the rear king screw. The trigger housing is positioned and secured by screws and consists of the trigger, sear connector and sear. Depressing the trigger moves the sear connector and allows the sear to be depressed under the influence of the firing pin bent. Length of pull, trigger slack resistance and trigger pull can all be adjusted.

The safety catch is a plastic rotating disc which is located on the tang and is an integral part of the trigger mechanism. Being at the rear of the trigger, the safety catch requires a function bar to operate the bolt stop and trigger etc. The rotary trigger is well positioned for the civilian or police shooter but I would question its robustness for a military sniper rifle. Sufficient ingress of debris or an impact of any severity would render the safety catch inoperable or the rifle depending the position of the catch.

Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle



The rotary safety catch has three positions which permits various safety functions:

1. Red indicator; this is the firing position and permits the bolt to be cycled, too feed a round from the magazine and to discharge the rifle.

2. White indicator; this is the safe position and can only be applied if the bolt mechanism is cocked. The bolt can be opened and the chamber can be cleared but the trigger cannot be depressed and the firing pin cannot be released.



3. Grey plunger; the bolt is locked, cannot be opened and the trigger cannot be depressed. However this position has the added function that the bolt handle can be further depressed, making the rifle easier to transport or store. The manual also states this has added firing pin safety. Once the bolt handle is depressed it can only be released by depressing the grey plunger and rotating the safety to the white indicator.

With the safety on the red position, firing pin released and the bolt lifted but not withdrawn, rotating the safety to the grey plunger permits the bolt assembly to be removed. However the folding stock must be folded to permit sufficient clearance to remove the bolt fully from the receiver.



One minor criticism is that it is very easy to overturn the safety catch, especially when moving to the white indicator, I have regularly overturned to the grey plunger but that is probably just a matter of practice. In my opinion this is fairly sophisticated trigger that reflects its civilian heritage.

Bolt Mechanism

As with the receiver the bolts level of quality is superb. As can be seen in the image below the bolt uses



twin front locking lugs and the traditional but very effective spring loaded extractor and a plunger style ejector. The bolt head is integral with the bolt body and when the bolt is rotated, the lugs and the bolt body rotate with only the bolt shroud (sleeve) remaining stationary. In the bolt body there are two grooves, the straight long groove aligns with the cocking bent is where the bolt stop engages. The circular

groove, I believe is for the clearance of debris. On one side of the bolt head and between the two locking lugs is the gas vent should gas escape through the firing pin recess.



Whilst the principle method of locking is the bolt front locking lugs there is a small lug at the rear of the bolt body that engages in a corresponding lug in the receiver. I am unsure of the lugs purpose other than as a safety lug but I may be wrong.

To remove the bolt, lift the bolt handle but do not pull the bolt to the rear. Rotate the safety catch until the grey plunger appears. Rotate the butt assembly into the folded position and retrieve the bolt assembly. Re-assembly of the bolt is in reverse, however if the firing pin assembly has been removed, ensure the bolt shroud is correctly aligned with the bolt handle prior to re-assembly. Once the bolt is fully forward and engaged, the safety can be rotated to the red indicator and the bolt cycled to checked functioning and correct assembly. To avoid releasing the firing pin on a empty chamber, the trigger can be depressed, whilst allowing the bolt to be engaged under control.

The manual states the firing pin assembly does not need to be disassembled as it is permanently lubricated at the factory. That may apply to the user, but from an Armourers point of view the firing pin may require repair or may need servicing due to the ingress of water or debris. This can be achieved by depressing the catch on the side of the bolt shroud and rotating the shroud clockwise until it disengages and the firing pin can be removed.

Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle

The bolt assembly is finished in a modern impact wear resistant dark grey finish and the bolt handle is fitted with a synthetic bolt knob to assist in weight reduction. As one should expect from a high quality mechanism, operating the bolt is a smooth and effective operation which to date I have yet to suffer from any form of mis-feed or extraction problem. Operating the bolt slowly is a problem for some rifles with empty cases dropping into the magazine, however the 08 ejects effectively no matter how slow you pull the bolt to the rear and the empty case clears the rifle without losing the case and potentially revealing the firer's position

Barrel Assembly

Steyr are one of the few if not the only major manufacturer that I am aware of, that continues to use hammer forged barrels. This barrel manufacturing process has its critics who say that the hammer forging process sets up stresses in the barrel to the detriment



of its accuracy. The British also used the same process in their L42A1 sniper rifle and whilst I am not a barrel smith, I can vouch that these barrels are very accurate and therefore silence the critics.

The SSG08 barrel is 24" Long and 25.5" with the brake. It is 1.1" dia at the chamber and narrows to 0.8" At the muzzle. Externally the barrel has the distinctive pattern of the hammer forging process and in the case of the SSG08 the muzzle is threaded and fitted a three baffle muzzle break. The muzzle break is efficient and noticeably tames the rifles recoil, although I have some reservations on the tactical implications of a muzzle break on a sniper rifle, it does allow for a more rapid reacquiring of the target. As with the rest of the rifle the barrel is finished in a modern impact wear resistant dark grey finish. The barrel is stamped with the calibre and corresponding proof marks.

Stock Assembly

Is a sophisticated assembly and contributes to the rifles operation in the following ways, handling, weight, accuracy, overall length, ammunition capacity, safety and accessory attachment points.

The stock is an all aluminium design, anodised in black with only the butt pad, cheek rest and pistol grip produced in an impact resistant plastic. Being manufactured from aluminium and machined on a CNC machine the receiver to stock fit is perfect and the two king screws torque at 7Nm. With only the receiver touching the stock the barrel is fully floating thereby maximising the potential for accuracy.

The folding butt assembly is standard and not an optional extra as it is on many other rifles. However is essential as the butt must



Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle

be folded to remove the bolt. From a tactical aspect the folding butt is an advantage as the rifles overall length can be reduced, which is more suitable for vehicle, helicopter use or parachuting insertion and from a logistics requirement the rifle can be stored using a much more compact solution. Folding the butt is achieved by depressing the spring loaded axis pin and once deployed the butt is secure with no movement or tightening of screws.

The butt assembly can be adjusted for butt and cheek pad height, plus the cheek pad has provision for horizontal adjustment. Built into the butt assembly is a monopod which has both fine and course adjustment. In operation, I found this to be a good butt assembly, adjustment is user friendly and effective and the folding mechanism to be robust and soldier proof. The monopod is quick to deploy but I find in practice I tend to use it more as a rear grip than as a monopod. In another article I read, they were some comments about the butt strap bruising the operators hand. I couldn't replicate this concern and had no problems with the strap.



The pistol grip is an ergonomic design and is provided as standard with various front and rear sized panels to accommodate different hand sizes. This is a good idea and something that I have not seen on other designs. The panels can be adjusted by simply removing two pins, remove the panels and assembling in reverse order.

In my opinion one of the best design features of the stock and the rifle in general is the magazine housing. The 10rd magazine is completely enclosed and as a result is protected from both the elements and accidental impacts. The front of the housing provides a good handling point when carrying but more importantly when shooting standing, sitting or kneeling. Lastly the trigger guard is integral with the magazine housing. In the trigger guard is a slot to permit access to the trigger and its adjustment.



On the forend there is provision for a wide variety of accessory rails which permits the fitting of night sights, bipod etc. The stock is provide with a short and long rail as standard but if extra rails are required these must be purchased as an optional extra. The

stock is provide with a spigot and versa-pod bipod as standard. However this bipod is in my opinion a poor design and therefore I initially replaced it with a Atlas bipod and rail mount. However the long term plan is to fit Steyr' own HS50 bipod which is manufactured by Fortmeier in Germany.

Down the sides of the forend are plastic inserts or "skins" which provide a better handling solution and in cold weather reduce any skin to metal contact. One thing I should not forget to mention is the sling swivels, its very important from a soldiers point of view when you need to "hump" your kit around the countryside. There are two integral mounts for sling swivels which permits quick removal of the sling swivels should they be not required. The sling swivel are loops with a T bar, the T bar can be inserted into the mount under spring pressure, "push, twist and turn" and they lock into place. Its a good design that the loops can be removed with ease and without the use of tools. Slings are handy bits of kit, but they can get in the way and at the worse time.



In summary the stock assembly is a very good design and compliments the rifle well, in my opinion it provides the manufacturer with a modular concept that allows them to take a civilian rifle and provide a commercially successful police/military/tactical solution.

Magazine

Generally the magazine is fairly standard and unremarkable design by today's standards. Its of polymer construction and holds tens rounds which is a standard requirement for today's military sniper rifle designs. It two distinguishing attributes is that it is totally enclosed in the magazine housing, something we have already discussed and secondly has a unique safety feature with regards to its retaining/release catch.

The catch has two positions, therefore the magazine can be fully engaged, the bolt cycled and

Thames Valley Guns Armourers Report

Steyr SSG 08 .308 Rifle



live rounds fed into the chamber as shown in the left hand image. The safety position is with the magazine engaged on the second catch and therefore in the lower position so the bolt cycles over the top of the rounds and is unable to feed. This permits three levels of safety, operator, safety catch and magazine, making the SSG08 one, if not the safest rifle in the world. In summary the magazine works flawlessly to date, does it need an extra level of safety, I'm

not convinced, it may be suitable for a target or police rifle but I cannot see the benefit to a sniper rifle.

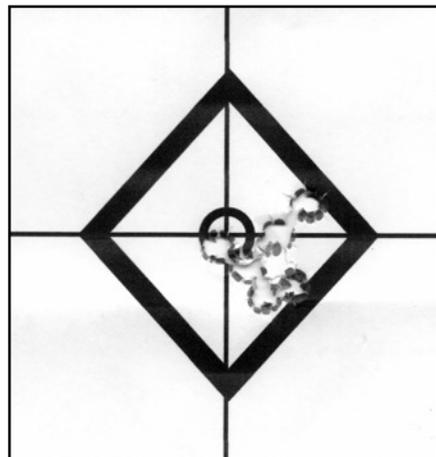
Summary

The rifle is a pleasure to shoot and is very accurate as can be seen in the 20mm group shown in the image below. This was shot off the bipod at 100yds with no load development and the rifle consistently shoots this group size and smaller (depending on the nut



behind the bolt). I initially fitted the rifle with a Zeiss conquest scope but replaced it very quickly with a Weaver Tactical mildot 5-20x50 as these are simply superior scopes within the confines of my budget. To date I have shot this rifle at different distances out to 600yds, its accuracy continues to impress me and it has never mis-fed or malfunctioned.

However I started these notes by asking the question; will this rifle make a top end military sniper rifle? In a round about way I will answer that question, you may have noted in these notes that the rifles mechanism is complicated, so complicated in fact that I have not covered all the technical aspects, at least not in depth. This is because I have never worked on such a complicated rifle and was reluctant to strip it down any further in case I damaged it or more embarrassingly could not rebuild it. It is on this level of complication that I will say the answer is no. It is a good civilian rifle and the extra levels of safety may find favour as a Police marksman's rifle and some military forces have already made purchases, but it is that same level of sophistication, especially the trigger, safety catch and the bolt locking mechanisms that in my opinion will prevent it from enjoying the success of its predecessor, the SSG69 or rifles such as Accuracy International.



However please don't let me put you off purchasing one of these rifles, they are excellent in their own right and in a typical civilian shooting environment these rifles are hard to beat.

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