

Thames Valley Guns

Armourers Report

Steyr SSG 69 Sniper Rifle

Introduction

I'm always searching for the next interesting sniper rifle, but in this case, I was offered the SSG-69, rather than as a planned and researched purchase. The SSG 69 was never quiet on my search list, its a very good rifle but there was always something else and therefore it was one of those rifles that always passed me by.

Therefore it was somewhat of a surprise when I was offered a SSG 69 that had been rebarreled in 6.5x47 Lapua and was in excellent condition. The SSG 69 has a good reputation as an accurate sniper rifle in .308, but in 6.5x47 Lapua, I



thought it would be the “icing on the cake” and therefore went ahead with the purchase. The rifle had the traditional black plastic stock, which was in good condition, large tactical bolt handle, was re-finished in a grey cerakote finish and came with the original Steyr rings. The only thing I disliked was the grey finish but that could be easily resolved.

History

The Scharfschützengewehr 69 or SSG 69 was adapted by the Austrian military in 1969 and together with its hunting variants became an instant success, being adopted by many military and police forces around the world. As a result there are many publications that discuss the rifle in considerable detail and therefore I only plan to provide a brief overview. More details can be found on the companies website at <https://www.steyr-mannlicher.com/en/company/>

For the purpose of this report, sniper rifles produced in WW1, I would classify as generation 1, WW2 rifles as generation 2 and post WW2 rifles as generation 3. During that sixty year period, sniper rifles changed little and in essence they were infantry rifles, fitted with a scope or upgraded with improved furniture, heavy barrel and a scope. However generation 4 rifles were the first to be designed from the outset as sniper rifles and therefore had design features incorporated to support the sniper in the field and the SSG69 was an excellent example of that new breed.

As a sniper rifle the SSG 69 had a black or green thermoplastic resin stock, adjustable butt, heavy hammer forged barrel, iron sights (depending on model), non reflective finish, adjustable match trigger and a detachable spool or rotary magazine.

Typical specifications for the SSG 69 was as follows; overall length of 45”, barrel length of 25”, unloaded weight of 8.7lbs, 5rd magazine and four groove rifling. The rifle was only manufactured with a short receiver and therefore never utilised cartridges with long or magnum calibres.

Unlike many of its competitors that used front locking lugs such as the Remington 700, the SSG 69 had multiple rear locking lugs which provided a very smooth action.

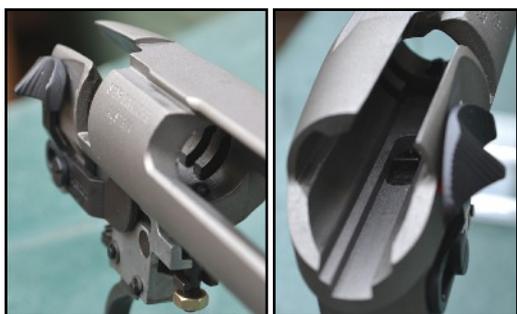
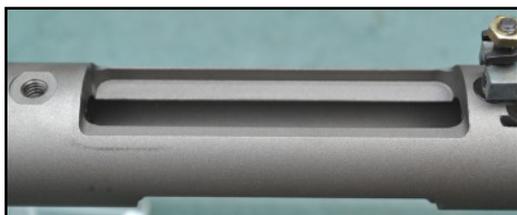
The rifle enjoyed considerable commercial and military success and despite its long production run, was only produced in a very small number of variants which is indicative of a naturally good design. The initial design was retrospectively designated SSG-PI with the introduction of the SSG-PII in 1988. This had a heavy barrel and a large bolt knob handle which replaced the spatula type. In 1992 there was a P-III, this was fitted with aperture sights and American H-S precision stock.

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The last variant was a P-IV which was only produced in .308, had a very short 16.5" barrel and a large flash hider to accommodate the excessive muzzle blast. In 2015 Steyr discontinued production, an impressive production run of forty six years.

Receiver

The receiver is an all steel design with a relatively simple layout and is 230mm long. The steel receiver is 36mm at its widest point and has an integral scope rail which is only suitable for Steyr's own rings. This was a fairly typical marketing ploy in the 70's & 80's where especially European manufacturers would incorporate unusual sized scope rail, thereby forcing users to use their expensive scope rings. The ejection port is 71mm in length and is suitable only for .308 Winchester and cartridges based on that round, which in the 1970's was typically the .243 win. The barrel is fitted utilising the traditional screw thread and the receiver is machined with multiple locking lug recesses at the rear of the receiver. This was unusual, as new rifle designs of the period tended to have twin front locking lugs similar to the Remington 700.



Below the ejection port is the magazine well, which was designed from the outset to work in conjunction with a detachable rotary five round magazine.

The rear of the receiver is profiled to align with the bolt shroud which provides a good cosmetic appearance and the receiver is relieved to allow clearance for the bolt handle. There is a small scallop on the rear right side for the safety catch and underneath the rear of the receiver there is a further series of machining's to secure trigger which is secured by a series of pins. Another unique feature is the recoil block mounted at the rear of the receiver and the trigger assembly. My first impression would indicate this is not a good idea as recoil forces are generated further back, increasing the pivotal forces, causing the the muzzle to elevate further during the recoil cycle. However in practice, this does not seem the case, muzzle climb does not appear excessive, although I have not physically measured it.

External markings are limited to Steyr's logo, manufacturing title, model, serial number, proof marks and place of manufacture.

Barrel

Original Steyr barrels are hammer forged and where available in different lengths and calibres depending on the model. The current match grade barrel is 6.5x47 Lapua and has a barrel length of 25" and a 1 in 8 twist. It is 1.35" wide at the chamber and tapers to 0.65" at the muzzle. The muzzle is threaded with a M16 thread to permit the fitting of a muzzle break or moderator, has an inverted 11° crowned and is fitted with a thread protector.



As this is an aftermarket barrel, markings are limited to calibre and proof marks.

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Trigger

The trigger assembly on the SSG 69 is a small compact, match grade trigger and as far as I am aware is only available in two versions, single trigger with a single pull and a European double set trigger.

At the front of the trigger assembly there is a spring loaded threaded shaft with a nut, that can be seen in the image on the right. This is the bolt stop which engages in a channel in the bolt. With the firing pin released, the trigger can be fully depressed, which lowers the bolt stop sufficiently and the bolt can be removed for inspection and cleaning.



The safety catch which is integral with the trigger has a well designed thumb catch with a good positive detent action. With the action cocked, applying the safety disengages the trigger and locks the bolt handle. With the firing pin released, the bolt handle is locked and therefore unable to feed a round from the magazine. The trigger is adjustable for length of pull and release, which on this rifle is set at 1.15lbs. Removing the trigger from the receiver is a relatively simple process making servicing and repairs for Gunsmiths and unit Armourers a relatively easy task.

Bolt Assembly

Removing the bolt assembly for the first time, the user may note that the most obvious difference is the six multi-lug locking system at the rear of the bolt. The front of the bolt is engaged in the bolt stop and does not rotate during the feed cycle. It is the bolt handle and the locking lug sleeve that rotates, locking the bolt with the corresponding lugs in the receiver. Whilst the locking lugs are set at an angle to enhance smooth operation, there are camming faces on the lugs that provide primary extraction. At the base of the bolt handle there is a plunger and this plunger must be depressed to allow the bolt handle and the locking lugs to rotate and lock the bolt. This guarantees correct timing, the lugs are fully engaged in the receiver's corresponding lugs, the firing pin is aligned and therefore can be released ensuring mechanical safety.



For anybody accustomed to shooting a rifle with rear locking lugs such as the Lee Enfield, they cannot be beaten for smoothness and speed of operation. However this design of bolt operation has its detractors, stating the bolt can flex, as it is not supported at the front and therefore affecting accuracy, probably the same detractors that berate hammer forged barrels. I have two Sniper configured Steyr's, the SSG69 and the SSG08, both with hammer forged barrels, with rear locking mechanism's and both are extremely accurate. The bolt head is recessed therefore supporting the cartridge rim and the ejector is built into the bolt face. The extractor is a single piece, long spring steel design with the minimum of parts and therefore the ejector/extractor combination is extremely reliable and effective at ejecting empty cases away from the rifle, even when the bolt is cycled slowly.

Behind the extractor there is two gas vents. Should gas be vented to the rear during firing, the gas will be directed through the ejection port and away from the users face. The bolt handle is fitted with a tactical bolt handle and at the rear of the bolt shroud is a gun state indicator. The gun state indicator is part of the firing pin assembly and when the firing pin is cocked on the sear, a pin protrudes from the rear of the bolt shroud which can be clearly seen during the day and felt during the night.

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Stock

At a time when most late 1960's and early 1970's sniper rifles were still using wooden stocks, the SSG69's stock was somewhat unusual and novel in design. Steyr engineers decided to go with an all weather moulded stock using Cyclocac



which is a type of acrylonitrile-butadiene-styrene (ABS) thermoplastic resin.

Unlike wooden stocks the Cyclocac stock is completely weather resistant, relatively light in comparison to its wooden cousins, robust, could be moulded in black or green and would not distort in extreme temperatures, thereby providing a significant advancement in stock design technology.



The butt is adjustable for length using a series of spacers and the forend can be fitted with a bipod using an integral rail. Both the pistol grip and the forend has a serrated finish to improve the operators grip and there is provision for a sling.



The trigger guard and magazine housing is a one piece assembly and the two master screws pass through the trigger guard assembly securing the stock to the rifle. However a common fault with all plastic trigger guards and the SSG69 is no exception is that the plastic is unable to withstand the crushing force of the screws and will crack easily making this a design weakness.

Magazine

The SSG69's magazine was another novel feature at its debut in 1969. Being manufactured from the same thermoplastic resin as the stock, the magazine was a compact rotary design with a capacity of five rounds. At the rear of the magazine was a clear plastic panel which allowed the operator to clearly see the number of rounds in the magazine.



The magazine is retained by two catches either side of the magazine and positioned by a single plunger at the front of the magazine. Feed reliability is superb, regardless of the bolt cycle rate and I have have yet to experience a misfeed.

Some magazines are unreliable when the cycled slowly with empty cases failing to eject or dropping back into the magazine causing a misfeed. Sniper rifles must be able to cycle slowly and effectively as this reduces mechanical noise and avoids empty case being ejected to far from the rifle.

Steyr also produced a straight ten round magazine for military and police use to increase round capacity. However it increased the rifles height and in my experience, the release catches kept failing, therefore making the magazine unreliable and as a result the magazine was discontinued.

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Upgrade

As much as I like the .308 SSG 69, the calibre and the polymer stock put me off when it came to purchasing a new rifle. I have nothing against the .308 but I had so many .308 rifles, having another one didn't seem practical. Therefore finding the SSG 69 rebarreled in 6.5x47 Lapua was ideal.

The 25" heavy aftermarket barrel and 6.5x47 cartridge is a very accurate combination that outperforms the original .308 rifle. As I wanted to replicate a sniper rifle, I had the stainless steel barrel, receiver and bolt shroud, cerakoting in tactical black and the stock barrel channel relieved slightly to permit the barrel to float.

In its original format the SSG 69's stock is fitted with a integral rail and therefore was limited to fitting a Harris bipod. However I am keen fan of the Atlas bipod and therefore fitted a picatinny adaptor kit to permit the fitting of the V8 model.



Although I had a set of original Steyr rings I opted for an aftermarket picatinny rail, which permitted the use of Rechnagel tactical one piece mount and the fitting of a S&B 6-12x56 P1 mildot scope.

Range Test

Like all my rifles, my first step is to ensure the rifle and scope setup is an effective functioning system. All too often I find issues on the range that might elude me in the workshop. Once I am confident that I have an effective functioning system, the next step is "rough" zeroing. At this point, zeroing is not required to be exact as I plan some load development to ensure the rifle/ammunition combination is performing at its best.



My personal specification for this rifle was to engage targets between 100 & 600 yds, therefore standard rings, picatinny base and a x12 scope was utilised. From a reloading standpoint, this specification dictated that I did not require maximum velocities and therefore using Vihtavouri N150, Lapua brass and scenar 123gr bullets, I loaded 50rds using between 33 and 37.5 grains of N150.

My first trip to the range generated average velocities between 2495fps - 2829fps respectively. This was recorded using a magnetospeed chronograph and the best group was achieved using 34grns with an average velocity of 2567fps.

Reloading a further 50rds using 34grns of N150, my second trip to the range was to zero exactly and to ascertain my best average group. Shooting from a rest at 100yds my best average was 0.5"

Using the Scenar 123gr bullet and keeping velocities mid range, recoil is moderate. Feed and ejection during the two range trips was faultless regardless of bolt cycling speed.

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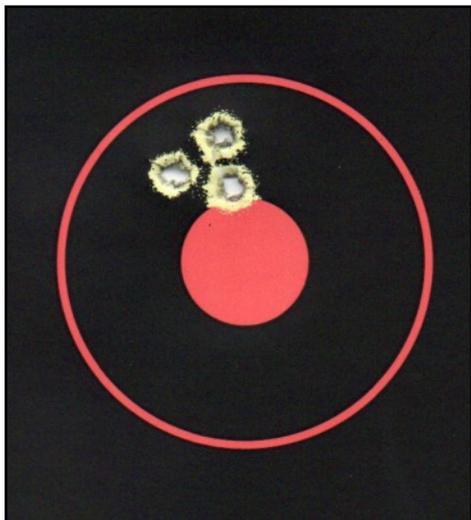
Summary

With its calibre and barrel upgrade this SSG 69 is more accurate than when it was originally produced in .308. It should be remembered that this is not the fault of Steyr or the rifle, it is just the progress of time and the introduction of more inherently accurate calibres. Therefore this summary, discusses the SSG 69 in its original calibre, the .308 Winchester and not the model I own.

The SSG 69 is a superb rifle and it is easy to see why it remained in production for 46 years and I am sure it will remain in use with current operators for many more years to come. Why is the SSG 69 so successful? In my opinion it is a relatively simple rifle, which is very accurate, reliable, robust and functions in all military environments, which is all the operator wants. By modern standards the SSG 69 lacks the latest fashions of aluminium stocks with more picatinny rails than the operator actually knows what to do with, which can be seen in its replacement, the SSG 08. I have the pleasure of owning a SSG 08, it is a very accurate rifle which is most enjoyable to shoot, but for a military sniper rifle it is far too complicated and in my opinion more suitable as a Police marksman rifle.

The SSG 69 broke the mould, it was the first sniper rifle to be designed with the sniper in mind and not an upgraded infantry rifle which had been the norm with military forces up until this point. It was also leading edge in 1969 with new technology and innovative ideas which led to its great success.

In the UK there are still a few new rifles still available through the importer, it is my humble opinion that you couldn't go wrong purchasing one of these fine rifles.



More recently I have been range testing my 6.5x47mm SSG69 at ranges from 100 - 600yds. This ½" group at 100yds is an excellent example of what this rifle is capable of.

Paul Green
Thames Valley Guns
www.thamesvalleyguns.co.uk
Email: paul.tvg@ntlworld.com

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