

Simonov's Automatic Rifles & Bayonets

by
Graham Priest

Probably three individuals can be credited with the overall design of the vast majority of the world's assault rifles in use today. The oldest was Sergei Gavrilovich Simonov (1894 -?) closely followed by Mikhail Timofeyevich Kalashnikov (11th October 1919 - present) and Eugene Stoner (22nd November 1922 - 24th April 1997). Of these the inventors of the *AK47* and *M16* have received the largest number of column inches, despite the products of the first in evidence in almost any current affairs television broadcast or daily newspaper. [1]

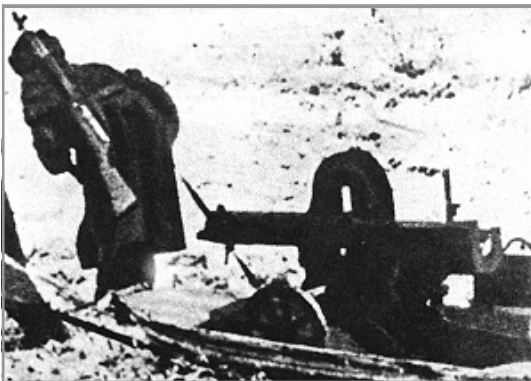
Simonov was one of Imperial Russia's peasant underclass with a limited education despite an early apprenticeship as a blacksmith. [2] During the First World War (1914 -18) he toiled for two years as a machine builder. When the revolution changed the political landscape in 1917 he was recruited to work at an arms factory at Korov where Vladimir Grigorevich Federov's (1874 - 1966) *Model 1916 Avtomat*, (the first Soviet self-loading rifle) was made. Good technical prowess brought him to the attention of the management and he was sent to Moskva Vysshete Tekhnicheskoye Ushchilische (MVTU) for a higher education. By 1927 he was a graduate mechanical engineer, Master Gunsmith and an ordnance viewer at the Tula arms plant. He became a Communist Party member the same year

From 1922 onwards Simonov began to create designs for automatic weapons.



See Figure 1 (right)

The Artillery Committee rejected his first in April 1926. In 1930, when Soviet trials with offerings by Fedor Vasil'evich Tokarev (1871-1968) and Vasily Alekseyevich Degtyarev (1879-1949) were over, he entered the debate.



The prototype 7.62mm *Avtomaticheskaya vintovka sistemi obrazets 1936g* (AVS36) was examined in 1931. A favourable review of the wood stocked, gas operated self-loader, with its straight-line bolt locked by a vertical wedge, caused 40 trials examples to be built in 1933, 106 in 1934 and 286 in 1935. [3] Mass production at Izhevsk started in 1937 so that 34,681 more were constructed by the time the issue was cancelled a year later.

See Figure 2 (left)

A Soviet infantryman armed with an *Avtomaticheskaya vintovka sistemi obrazets 1936g* moves a Maxim during the Winter War in Finland during 1939-1940. (I.V.Hogg)

Political 'intrigue' between Tokarev and the committee may have been the reason for a new set of trials that began in May 1935, and his *Samozaryadnya vintovka Tokareva, obrazets 1938g* (SVT38) certainly replaced the AVS36. He stated that the latter was, *...designed for single shot...and automatic fire in short bursts. However, the experience of manufacture and employment indicated that the design was relatively complicated; malfunctions occurred during firing and the rifleman became fatigued quickly.* [4]

The weapon received some minor modifications, which included a Rukavishnikov style muzzle brake, but was rejected in November 1938.

The AVS36 had a knife bayonet that clipped beneath the muzzle. It had a unique 'hook' catch beneath the muzzle brake. [5]

See Figure 3 (right)

The knife bayonet for the *Avtomaticheskaya vintovka sistemi obrazets 1936g* (Courtesy of Brett, H.M., *The Military Knife & Bayonet*, p. 231)



When the German-Soviet Pact of 23rd August 1939 fell apart on 22nd June 1941 Simonov was working on a self-loading anti-tank rifle in 14.5mm calibre. This was adopted six days after *Operation Barbarossa* had started. He also made a reduced scale version to accommodate the new 7.62mm x 54mmR cartridge in a short infantry carbine.

[6] The *Samozaryadnya karabin Simonova obrazets 1941g* (SKS41) had either a 5 or 10 round integral magazine loaded from stripper clips, and was of a simple 'user friendly' robust design. As the Nazi advance gathered pace, new developments were shelved in the panic to produce tried and tested weapons. Work on the SKS41 was mothballed until better times had returned.

Both the AVS36 and SKS41 were difficult to control with their powerful 7.62mm rounds. When N.M.Elizarov & B.V.Semin observed German developments with an 'intermediate' cartridge and produced the Russian 7.62 x 39mm ob.1943 version, the concept of an efficient assault rifle was achievable.

Simonov's Automatic Rifles & Bayonets

by
Graham Priest (continued)

Simonov immediately revamped the *SKS41* in the new calibre and some examples were trialed in the Byelorussian theatre during mid-1944.

Although very similar to the earlier design, the new carbine was lighter, had revised stripper clip arrangements, no muzzle brake and an improved bayonet that folded. Good feedback caused the Red Army to adopt it as the *Samozaryadnya karabin Simonova obrazets 1945g* (*SKS45*). [7] After minor improvement mass-production started in 1946.

See Figure 4 (left)

With its robust nature it was well liked, so state manufacture, Communist bloc imitations and licensed copies may have produced around 15 million examples.



[8]

See Figure 5 (right)

In fact by the time the new weapon was adopted the use of the full-sized semi-automatic rifle was under scrutiny. Only two years later the appearance of the 7.62mm *Avtomat Kalashnikov obrazets 1947g* changed everything. The rapid ascendance of the smaller weapon pushed the *SKS45* into a secondary role within the USSR and after a few years it



Figure 6 A formation of Nationalen Volksarmee der DDR sailors in Berlin paraded with the *Selbstladekarabiner S*. (Molitor, J., *Uniformen der Nationalen Volksarmee der DDR 1956-1986*, Berlin, 1990, p. 262)



See Figure 7 (above)

was only used in a ceremonial situation

The bayonet blade was derived from the knife used on the *SVT40*. [9] It was a 9.75 ins. (249mm) long spear-tipped dull-chromed design with blunted cutting & false edges. A concave central fuller on both sides had an irregular aspect due to the way it was machined. The stepped edge shoulders were at right angles to the faces that flared into a circular boss. A hollowed round-sided cuboid tang, with a circular hole at the rear supported a spring-loaded 'socket'. A cheese-headed bolt passed through the tang and twin stanchions beneath the barrel to trap this sleeve and provide a pivot. The knurled tube, complete with a muzzle ring extension and notched reinforced collar at the back, sandwiched a coil spring over the tang with enough 'play' to slide in both directions.

See Figure 8 (left)

In the stored position the bayonet was aligned beneath the wooden stock in a shallow groove pointed towards the butt. Two squared recesses on the sleeve were cammed into the round-ended bracket on the firearm to form a lock. Finger pressure on the muzzle ring extension was able to compress the spring and release the socket. A 180° rotation mated the muzzle ring with the front of the barrel and a mirror image of the stanchion device fixed the blade projected beyond the rifle. As the blade was in the vertical plane below the fore-end utility was ensured and materials were saved by the lack of a scabbard. No markings were added.



Simonov's Automatic Rifles & Bayonets

by
Graham Priest (continued)

From 1957 onwards an almost exact imitation of the SKS45 was made in the Democratic Republic of (East) Germany, as the *Selbstladekarabiner S (K-S)*. [10] Except for the cut in the butt for a sling, instead of a swivel, the *K-S* was a faithful copy. The unmarked bayonet was also identical.

Soviet political and economic co-operation with the People's Republic of China during the early 1950s also established the SKS45 as one of the bases for its prototype state industries.



[11] Adopted as the *Type 56 Carbine*, from the first year of its production, it was also a direct copy.

See Figure 9 (left)

Fig 10 (below). Chinese markings on the *Type 56 Carbine*. The Chinese characters mean 'Type 56'

The United States Defence Intelligence Agency noted that, *The Chinese require that their equipment be relatively simple to operate, maintain and repair. This... results partly from a scarcity of skilled technical personnel and, in some instances, of spare parts.* [12] With a complement of 3,625,000 regulars in the People's Liberation Army in 1978, and many millions more in the People's Militia, the quantity made was huge. The weapon was ideal for a 'cash strapped' country with an unsophisticated citizenry that was intended to fight on foot.



It was expected that invaders to the homeland would be destroyed by local forces as their lines of supply were stretched over vast distances. Very basic training, especially in the use of the bayonet was intended to compensate for the technical capabilities of the enemy.

Figure 11 left

A Chinese soldier reloads his *Type 56 Carbine*. Notice the unfolded bayonets. (Courtesy of John R.Young)

Yet again the SKS45 blade bayonet was replicated for the *Type 56 Carbine*. At some stage this was replaced by a 'spike' design.

Imperial Russia had favoured the edgeless bayonet since 1890 and the Soviets had continued to produce various models until 1944. Britain's BSA & Soley Armaments Company experimented with a spring-loaded cruciform design that folded under the muzzle of a rifle in December 1935. [13]

See Figure 12 right



Figure 13 left

An experimental adaptation of the P.1914 Rifle with a folding bayonet, converted by BSA in 1935. (SAS 582. Courtesy of the Trustees of the Infantry Training Centre, Weapons Collection, Warminster)

The *Type 56* bayonet's blade was 12 ins. (308mm) long. It had a tapered round-sided triangular form milled from a cylindrical rod. Each face had concave fullers, with the uppermost blended into a chisel point. Either a dull or bright chromed finish was applied. The blackened sleeve and muzzle ring arrangement was unchanged.

A number of improvements were made to the way in which the bayonet was fixed to the pivot on the barrel. (See Figures 14 & 15 next Page) The brackets permanently secured the original design unless the bolt was unscrewed. To allow easier maintenance or replacement some blades were built with a hook at the end of the tang instead of the normal rounded orifice. This allowed the weapon to be removed without unscrewing the pivot. Unfortunately when this was done the compressed spring tended to 'shoot' the sleeve off the tang.

Simonov's Automatic Rifles & Bayonets

by
Graham Priest (continued)

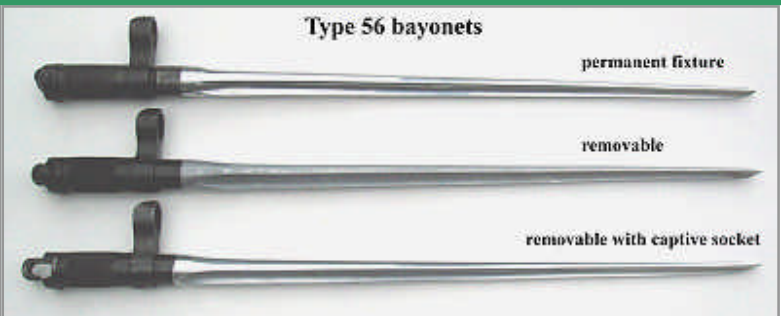
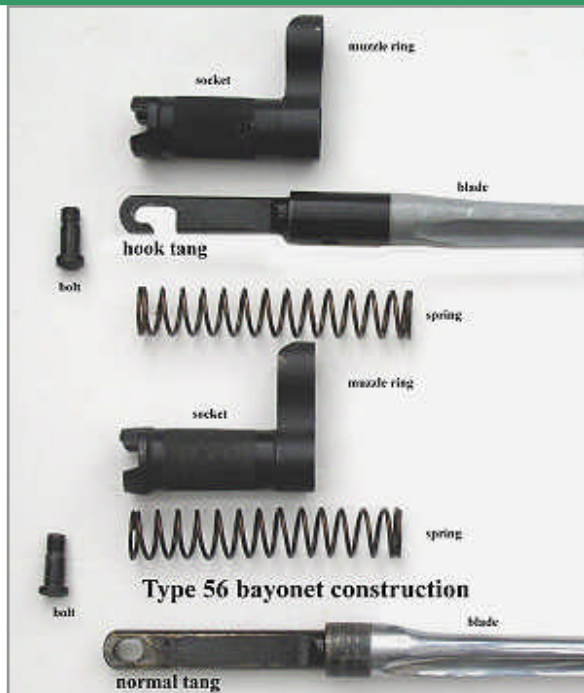


Figure 15 (left) and Figure 16 (above) relate to text on the previous page

A further revision slotted and drilled the socket so a pin could be driven through the extended blade base. The protruded end then slid in this channel to allow the normal movement necessary to fix or unfix the bayonet.

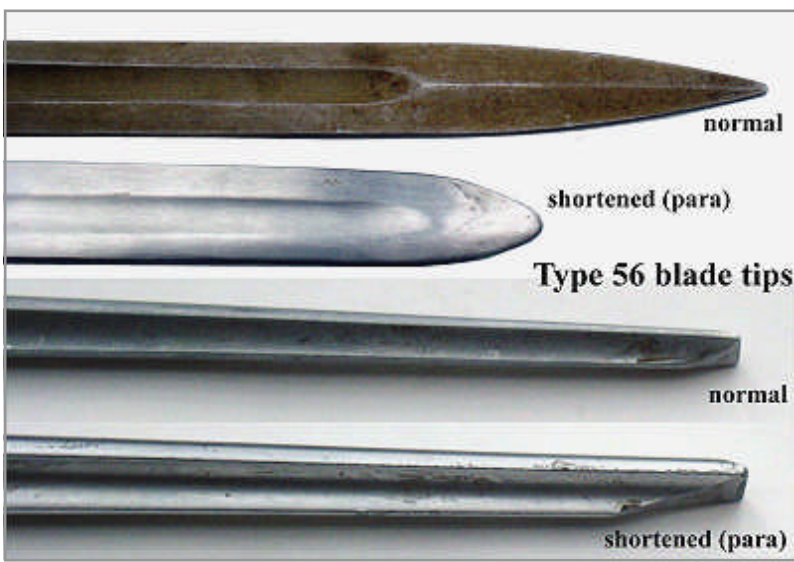
See Figure 16 (right)



See Figure 17 (left)

Unlike other types the tube is large enough to slide over the entire spike. When removed the blade retained the sleeve and could be used as a stiletto.

During the 1990s many Chinese *Type 56* blade and spike models were sold in the USA as 'parachutist' models. The blades had been shortened to 7.63ins. (195mm) or 8.22ins. (121mm) lengths. The workmanship was professionally carried out.



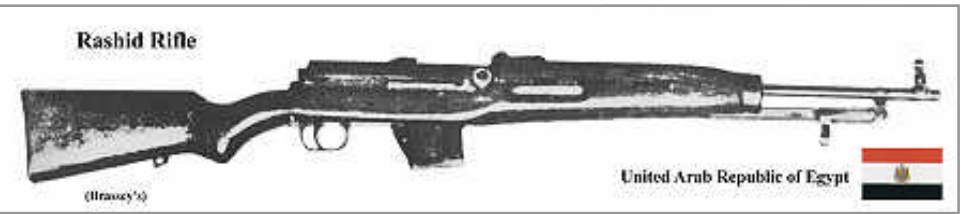
No example of a shortened *Type 56 Carbine* was noted but the new blade lengths were correct if the stanchion was placed adjacent to the gas cylinder once 3.5ins. (89.4mm) of barrel had been removed.

Both the People's Republic of Bangladesh and Democratic Republic of (North) Korea also manufactured the *Type 56 Carbine* with Chinese assistance. [14] The Korean example was termed the *Type 63* and was built in Factory 67.

During the 1990s many Chinese *Type 56* blade and spike models were sold in the USA as 'parachutist' models. The blades had been shortened to 7.63ins. (195mm) or 8.22ins. (121mm) lengths. The workmanship was professionally carried out.

See Figure 18 Right

The United Arab Republic of Egypt combined some of the features of its Swedish *AG42* or *Ljungman* copy, known as the *Hakim*, with details from some *SKS45s* purchased in 1954 to create the *Rashid*. [15] (Fig.18) The combination had the typical folding knife bayonet. It is suspected that a model with a captive sleeve was used. [16]



Simonov's Automatic Rifles & Bayonets

by
Graham Priest (continued)

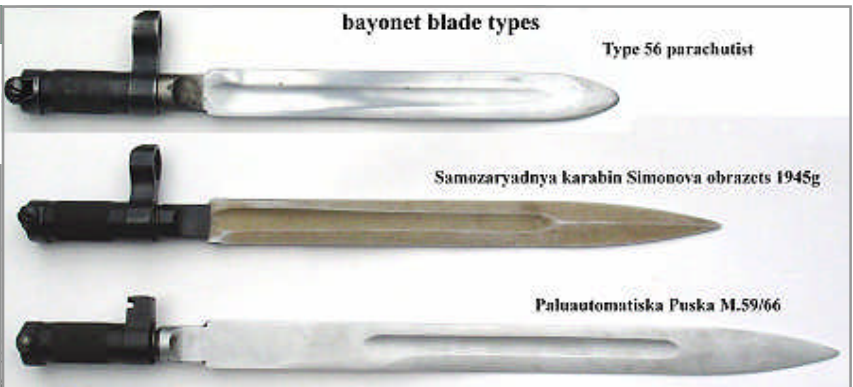
Another version was made in Yugoslavia as the *Paluautomatiska Puska M.59/66*. [17] As this had an integral spigot type grenade launcher on the muzzle the bayonet design was revised.

See Figure 19 (right)

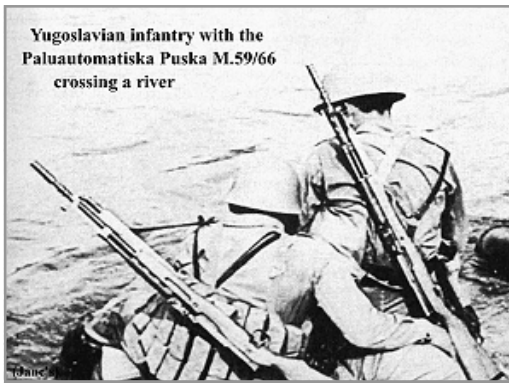
To reach beyond the barrel extension the knife blade was lengthened to 11.75ins. (300mm). The sleeve arrangement was broadly similar except that the muzzle ring was abandoned.

See Figure 20 (right)

Instead a notched bracket clipped onto a barrel collar. The blade was finished in a dulled chrome and was less rounded than the Soviet originals.



Once in production hundreds of *SKS45s*, and the various imitations, have seen action throughout the globe. It was a common weapon in the Vietnam War (1961-1975) but is equally ubiquitous in African, Middle Eastern and Asian conflicts. The table that follows gives some idea of its usage.



The worldwide distribution of Simonov type carbines c.1988.

(after E.C.Ezell's *Small Arms Today* [1984/1988])

Country	Title	SKS Eastern Bloc	Type 56	SKS45	Other
Afghanistan		v			
Albania	People's Sov. Rep.	v	v		
Algeria	Democratic & Pop Rep.	v			
Angola	People's Rep.		v	v	
Bangladesh	People's Rep.				Copy of Type 56 Origin unknown
Benin	People's Rep.	v			
Cape Verde	Republic	v			
Chad	Republic	v			
China	People's Rep.		v		Export versions Norinco
Comoros	Fed. Islamic Rep.	v	v		
Egypt	Arab Rep.	v			Raschid-Maadi
Equatorial Guinea	Republic	v			
Ethiopia		v	v		Oromo Liberation Front
Germany (East)	Demo. Rep. State				Selbstlade karabiner S (K-S)
Grenada		v (4,074)			
Guinea	People's Rev. Rep.	v			
Guinea-Bissau	Republic	v			
Guyana	Coop. Rep.	v			Origin unknown
Indonesia	Republic	v			
Iraq	Republic	v			
Laos	People's Dem. Rep.		v	v	
Lebanon	(PLO)	v	v		K-S & Type 63
Libya Soc. People's	Libyan Arab Jamahirma	v			
Madagascar	Demo. Rep.	v	v		
Mozambique	People's Rep.	v			
Nicaragua	Republic	v			Ceremonial Type 63
North Korea	Demo People's Rep.				Bangladeshi?
Pakistan	Islamic Rep.		v		
Sao Tome et Principe		v			
Seychelles		v			
Sierra Leone	Republic	v			
Somalia	Demo. Rep.			v	
Sri Lanka	Demo. Soc. Rep.	v			
Sudan	Demo. Rep.	v			
Tanzania	United Republic	v			
Uganda	Republic	v			
(Russia)	Un. Soc. Sov. Rep.			v	Ceremonial
Vietnam	Soc. Rep.	v			
Yemen	Arab Rep. of North	v			
Yugoslavia	Soc. Fed. Rep				Puska M.59/66

Simonov's Automatic Rifles & Bayonets

by
Graham Priest (continued)

China not only adopted the *Type 56 Carbine* but also an imitation of the *AK47* as the *Type 56 Rifle*. This also used a bayonet and will be the subject of a future article.



Figure 22. Troops of the Ethiopian Army with Chinese *Type 56 Carbines* supplied by the USSR after May 1977. (R. Corbett)

Endnotes

- [1] *The Times*, 'President Putin and Mahmoud Abbas in Ramallah yesterday' (*inspecting Palestinian honour guard*), April 30th, 2005, p. 44.
- [2] Ezell, E.C., *The AK47 Story*, Stackpole Books, Harrisburg, USA, 1986, p. 84.
- [3] *Ibid.*
- [4] *Ibid.*, p. 88.
- [5] Brett, H.M., *The Military Knife & Bayonet*, World Photo Press, Tokyo, Japan, 2001, p. 231.
- [6] Ezell, E.C., *Op. cit.*, p. 100.
- [7] *Ibid.*, p. 102.
- [8] Hogg, I. & Adam, R., *Jane's Guns Recognition Guide*, HarperCollins, Glasgow, Scotland, 1996, p. 399.
- [9] Brayley, M.J., *Bayonets. An Illustrated History*, KP Books, Iola, USA, 2004, p. 187.
- [10] Ezell, E.C., *Small Arms Today*, Stackpole, Harrisburg, USA, 1984, p. 86.
- [11] Hobart, F.W.A. (Editor), *Jane's Infantry Weapons 1975*, Jane's Yearbooks, London, England, 1975, p. 199.
- [12] United States Defence Intelligence Agency, *Handbook of Chinese Military Forces*, Washington, USA, 1976, p. 53.
- [13] Priest, G., *The Spirit of the Pike. British Socket Bayonets of the Twentieth Century*, Uppem Pubs., Biddestone, England, 2003, pp. 33-34.
- [14] Ezell, E.C., *Op. cit.*, pp. 52, 127 & 231.
- [15] Owen, J.I.H. (Editor), *Brassey's Infantry Weapons of the World 1975*, Brassey's Naval & Shipping Annual Ltd., London, England, 1975, p. 72.
- [16] Seidemann, U., *Private Correspondence*.
- [17] Hobart, F.W.A. (Editor), *Op. cit.*, p. 354.

Acknowledgements

Thanks to Trustees of the Infantry and SASC Weapons Collection, Warminster, Ulrich Seidemann and the other individuals & organisations mentioned in the captions for their assistance with this article.

Ed.—About the writer



Graham Priest is well known to many Corps members, especially those involved with the Infantry and SASC Weapons Collection. Two years ago he wrote an article for the Man At Arms Edition 34 titled *The History of the Bayonet* which, among many other publications he has written over the years, makes for acknowledgement of his expertise and enthusiasm for what he calls 'Big Boys' Toys'.

It is not often a retired headmaster is invited to lecture to the Arms & Armour Society at the Tower of London, and as a 'Friend of the Weapons Collection' he has contributed a wealth of knowledge towards exhibits and the provision of library material.

We look forward to the next article he mentions as a follow-on to the one published above, and which will relate to the *AK47*.
