

MAS-36 French service rifle

by Alek Wadi



The MAS-36 Type 2 French service rifle with its cruciform bayonet.

I recently acquired an MAS-36 rifle for Combined Service Rifle match. It's not a very common sight on the range in Australia, where British SMLE and No. 4, German and Swedish Mauser, US Springfield, Soviet Mosin-Nagant and Japanese Arisaka rifles are leading. Due to its rarity, I decided to find out more about this little-known French service rifle.

History

November 1918 saw the end of World War I. Despite the relief at the end of this war, the air was far from being cleared and some were already thinking about the next one. Most French infantry firearms were still derived from the 19th-century designs. The French *poilus*, or infantryman, went into WWI with the Lebel Model 1886 M93 rifle (nicknamed *la canne à pêche* or 'the fishing rod' because it was 1820mm long with its spike bayonet attached) and the Berthier system of the 07-15 rifle, the Model 1916 and the short Mousqueton Model 1916, which were all chambered for the 8mm

Lebel rimmed cartridge. They were all good for trench war, rare long-range shooting and standard volley-firing. Individual soldiers' equipment was definitively ill-adapted to prospective conflicts requiring swift troops' movement and hit-and-run raids.

Replacing the obsolete bottlenecked rimmed 8mm Lebel cartridge became a priority to the forward-planning French 'Etat Major'. The hitting power and support of light-machine-guns (LMG) was emphasised by all units on frontlines. The conical 8x50Rmm Lebel cartridge proved its limits in LMGs such as the French Hotchkiss 1914 and Chauchat 1915-CSRG. In 1918, the US troops joining the landing in France were equipped with this Chauchat (which they called the Soshos), but they were not happy at all, as some units were forced to give up their excellent Lewis guns. The French troops weren't happy either, so the military authorities decided to design a new cartridge that could be used for LMG, as well as service rifles.

As early as 1920, a new rimless 7.5x58mm cartridge had been developed and tested for

the Model 1924 LMG. However, it wasn't good enough and was too similar to the potent 7x57mm Mauser, so the 7.5x58mm case was shortened by 4mm to a final 7.5x54mm. It worked well with the newly adopted LMG Châtellerauld Model 1924-29.

During this time, large numbers of post-war rifles chambered in 8mm were to be converted to the new 7.5x58mm cartridge. This only delayed the release of the new French army service rifle, initially chambered for the 58mm case and hurriedly modified to suit the shorter 54mm case. After last-minute improvements, the Manufacture d'Armes de St-Etienne (MAS) prototype rifle was finally adopted by the French Army on March 17, 1936, as the MAS-36 service rifle. This was around the same time as the British adopted the new Lee-Enfield No. 4 Mk 1.

The mass production of the MAS-36 was further delayed until late 1938 due to the Depression and contemporary fixation for disarmament. At the start of WWII, only about 60,000 new rifles were available to French troops - they were again going to



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war with rifles and equipment used by their fathers.

The MAS-36 production took off again at the end of WWII to equip all troops. The MAS-36 Type 1 and post-1945 Type 2 were used in all subsequent French colonial wars. It remained in service in the French army until the late 1970s, when it was reassigned to the Gendarmerie and Compagnie Républicaine de Sécurité (CRS) until the late 1980s, when they were ultimately exported with quite a large number of rifles in their original package and grease (no re-import to France allowed) or destroyed under strict government control.

The MAS-36 is a bolt-action repeater rifle with an inbuilt bayonet. It looks quite ugly with its strangely crooked bolt handle and rugged and stocky appearance. But there are reasons behind this French design and you will soon get used to it. It has a hefty black-phosphate receiver connecting the buttstock and fore-end, reminiscence of the profile of the Lebel model, but much shorter in length - 1020mm for the rifle alone and 1290mm when fitted with the bayonet. It has a total weight of 3.87kg unloaded.

The 195mm-long and 5mm-thick steel-forged receiver holds the box-magazine, bolt, triggerguard/mechanism and rear-sight. The breech end has a 25mm-long ring protecting the bolt face when closed and houses the breech end of the barrel. The generous loading-ejection port extends 75mm to the clip-charger guide. The rear-sight sits on the top of the 65mm-long rear receiver bridge.

The bolt

Why the strange-looking contorted bolt handle? The newly designed bolt locks into the body of the rear receiver bridge like the Lee's action and Steyr-Mannlicher and not in the front receiver ring or barrel. Only 60-degree rotation and a short 90mm travel - that's quicker than the Mauser-style action to operate the bolt! The bolt handle is an integral part of a massive collar at the rear bolt end. Hence, it is angled forward and down to be in reach of the soldier's hand, so that the grasping ball is properly aligned with the trigger.

The bolt is 20mm in diameter and 165mm in length and has two large opposite lugs engaging two raceways and shoulders milled inside the rear receiver bridge. To disengage the bolt from the receiver, firstly, check that the chamber is empty and then pull the trigger fully back. The bolt is easily disassembled. The rear of the bolt plug has a 'D' and 'M' stamped with a notch on the collar. Grasping the bolt with one hand, make sure the bolt face is secured against a wooden stop.

With the palm of the other hand, push the



The bolt disassembled, with the bolt body with the bolt handle, the hollow firing pin, the coil spring and the bolt plug. Note the rear bolt lugs and the three gas vents.



The bolt plug. Note the notch on the bolt collar, the 'D' marking for disassembling and 'M' for reassembling on the bolt plug.

bolt plug forward to disengage its bayonet catch from the bolt collar and turn the plug clockwise so that the letter 'D' is aligned with the collar notch. Then, decompress the coil spring. This simple and efficient bolt has only four parts: the bolt body itself with the extractor attached to it; the rear-plug extended with a firing pin rod; the firing pin coil spring into which the firing pin rod lodges; and the long one-piece hollow firing pin into which goes the firing pin coil spring. There's no brain-teaser, no sweating, no jumping springs, no small parts and no screws to fish from under the bench!

To test the firing pin spring, compress it to 8kg. It should be between 72 and 80mm long, as indicated by the MAS-36 French Army manual. Reassemble in reverse order and make sure that the 'M' is aligned with the reference notch on the collar.

The bolt slides smoothly and the rifle is ready to fire when you thrust the bolt forward, pushing a cartridge into the breech and then down, to cock the firing pin by a simple helicoidal cam. Two gas vents in the bolt stop groove and an extra centre vent hole prevent accidental gas discharge through the rear plug. The extractor is a strong Mauser type fitting the case extraction groove.

The magazine

The staggered box magazine is an integral part of the receiver. The magazine follower is connected by a 'W'-shaped leaf-spring to the magazine floorplate. To test the leaf-spring, it must be between 50 and 70mm high with 0.55kg compression. The magazine takes five rounds introduced either singly or by a flat metal loading clip guided into the clip-charger rail located at the rear of the receiver port. Rapid loading is facilitated by two rear notches both side of the receiver's wall.

After ejecting the last case, a platform stop prevents the bolt from being closed on an empty magazine. The magazine can be emptied by squeezing the two sides of the



The steel-forged receiver with the integral magazine. Note the bolt handle curved forward and down for the grasping ball to be aligned with the trigger.

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integral locking/release latch in the magazine floorplate. You can't accidentally drop the magazine when hunting in thick bush, as the latch is tough to operate!

The barrel

The barrel is 575mm (23") long with four anticlockwise grooves and a 270mm (11") twist. A new bore will accept a 7.5 to 7.61mm gauge, but if the bore is exceeding 7.61mm, don't waste ammunition! The barrel is rather light, with a 15mm diameter at the muzzle. Soldiers often reported that impact dropped when the barrel overheated during intensive fire.



The fore-sight with the tubular protector on an MAS-36 Type 2.

The end of the exposed barrel incorporates a lateral locking lug to affix a 270mm-long cruciform bayonet (Model 1936) smartly concealed in a tube in the fore-end under the barrel.

At the muzzle end, the rifling is protected by a 5mm recess. The muzzle could be fitted with a removable Tromblon VB grenade launcher from the old Lebel 1886, but this was not a very good idea, as the Tromblon VB was easily lost in combat.

The trigger and triggerguard

A steel-forged triggerguard is attached to the receiver for the MAS-36 Type 1, while the Type 2 had a stamped steel triggerguard. The triggerguard can be disconnected from the receiver, while the trigger mechanism is part of the receiver. The former is two stages, with a standard trigger pull of 2.6kg. The ejector and the bolt rear-stop are integral to the trigger mechanism. The bolt stop is guided in a bolt groove to prevent the bolt from turning when drawn back.

The sights

The MAS-36 Type 1 fore-sight has an open post with sturdy protective 'ears', while the MAS-36 Type 2 has a tubular protector. The aperture rear-sight, located on the receiver bridge, is well designed, strong and simpler than that of the Lee-Enfield No. 4 Mk 1, which was designed at the same time.

The line of sight is 588mm (1.93ft) long. The sight-leaf is spring-loaded, protected and graduated from 200 to 1200m, indicating that



Loading using the charger clip inserted into the charger rail at the rear of the receiver port.



The aperture rear-sight located on the top of the receiver bridge is graduated from 200 to 1200m in 100m increments.

the 19th-century volley-fire idea survived.

If the rear sight-leaf has an 'N' stamped on the top, no sight-in with correction was required. The regimental armorer could choose from 25 different sight-leaves with off-centred apertures (0.4 or 0.8mm) to account for impact correction of 135 or 270mm respectively at 200m.

The safety

Here is a surprise: The initial MAS-36 had no safety device. As such, it is now impossible to import this rifle into Australia in its original configuration. The idea behind the lack of safety catch was to reduce production cost. However, a safety catch was later added on the MAS-36 51.

The buttstock and fore-end

These parts are reddish-color oil-treated beech wood. The buttstock ends with a metalplate. It is surprisingly short, especially on refurbished firearms seen on the Australian market. However, it was adequately extended in the 1950s with a black, hard rubber recoil 'sock' fitted snugly on the MAS-36 51, which gave less noise when you banded the butt on a hard surface.

The buttstock is solidly fitted to the receiver by one long screw connecting the triggerguard and the receiver traversing the



The magazine released from the receiver. Note the locking/release catch in front of the floorplate.

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buttstock. The upper and lower fore-end protects the barrel, but this wasn't so good when the barrel is overheating. They are locked between a metal recess ring in front of the receiver and screwed through the fore-sight protector. On the left, the fore-end middle barrel band holds a lateral swivel. A sturdy leather sling connects this lateral swivel to a bar on the right side of the buttstock opposite to the bolt handle, so you may comfortably shoulder your rifle flat on your back when going pig hunting.

Rifle markings

The rifle markings and serial number are located on the left side of the receiver, triggerguard, magazine floorplate, bolt handle, under the barrel hidden under the fore-end, bayonet, buttstock and fore-end.

Ammunition

The standard ammunition, Model Type O, is a 7.5x54mm rimless case, with a standard 139-grain .308-calibre FMJ lead-core bullet pushed by 42.43 grains of BF French Army powder. Muzzle velocity is a nominal 2788fps, with 2350 ft-lb muzzle energy. You may compare these figures with those of other ammunition of the same period.

For standard military ammunition, the

maximum realistic range of the MAS-36 is 400m. Various types of ammunitions were issued, including a 9.4g steel-core armour-piercing bullet (Type P), a 9.5g tracer (Type TO), a 9.4g tracer/armour piercing (Type TP) and a 10.5g incendiary (Type C). Currently, factory 7.5x54mm MAS-36 cases and ammunition is readily available from PRVI Partizan ex-Serbia with an advertised muzzle velocity of 2723fps with a 9g FMJ bullet.

A word of caution: Do not get confused with the 7.5x55mm Swiss that has a 1.5mm longer case and a heavier 173-grain bullet.

The initial MAS-36 underwent a few modifications over the years and campaigns. A shorter MAS-36 (Model CR39) fitted with a folding aluminium buttstock equipped airborne and mountains troops. The 7.5x54mm MAS-36 LG48 got a reinforced barrel (stamped 'G') with a permanently fixed alidade and a specific new French grenade launcher. On the MAS-36 51, the reinforced barrel was further extended to 620mm, initially chambered in .30-06 and then 7.62x51mm to accommodate the standard NATO grenades and ammunitions. A civil version in 7-08 was available in limited numbers. The MAS-36 bolt and receiver was considered so good that it equipped the famous French Army sniping rifles

the FR-F1 and FR-F2 that saw continued service until the mid-1990s. Both sniping rifles have a floating barrel and an integral bipod cleverly fitted just in front of the receiver and above the barrel.

Conclusion

The MAS-36 and variations were sold to Yugoslavia and Syria. Large numbers remained in North Africa and mostly Indochina-Vietnam and were later sold to neighbouring countries, with a few ending up in Australia and New Zealand.

The MAS-36 is easy to handle, well-balanced and pleasant to shoot with mild recoil. I personally find the rear-sight aperture-size fore-sight and target acquisition comfortable in various light conditions and even in rapid fire. A word of caution though: Most available MAS-36s have been reassembled from parts from various sources, so have it first properly checked by a competent gunsmith, then you will be able to see if your MAS-36 races well with other service rifles used in Combined Service Rifle Match and this in spite of it being so French! ●

The author would like to thank A 'Nick' Watson and D Kerr for their time and friendly support in writing this article.

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