

Enfield

Weapon System



ROYAL ORDNANCE
Defence systems, sub-systems and components

The Weapons

The two 5.56 mm weapons in the system are the Individual Weapon (IW), a rifle/sub-machine gun, and the Light Support Weapon (LSW), a light machine gun. Both are designed and developed around the ammunition, selected as the basis for the UK and NATO's new standard, which is common to both weapons. Flexibility is increased by the interchangeability of all major sub-assemblies and component parts thereby reducing spares requirements and simplifying maintenance and training programmes.

The buttless configuration enable both to be fired from the shoulder, hip, sitting or prone positions. Recoil is very much reduced which minimises weapon movement when fired, thus improving target accuracy in comparison to other heavier calibre weapons. Each are gas operated, self loading and magazine fed with the capability of automatic or single shot firing. This makes them ideal weapons to strengthen and enhance the direct fire power potential of the infantryman on the move. Their compact construction manufactured to stringent quality standards ensures the highest degree of reliability which makes them the complete weapon in world wide combat efficiency.

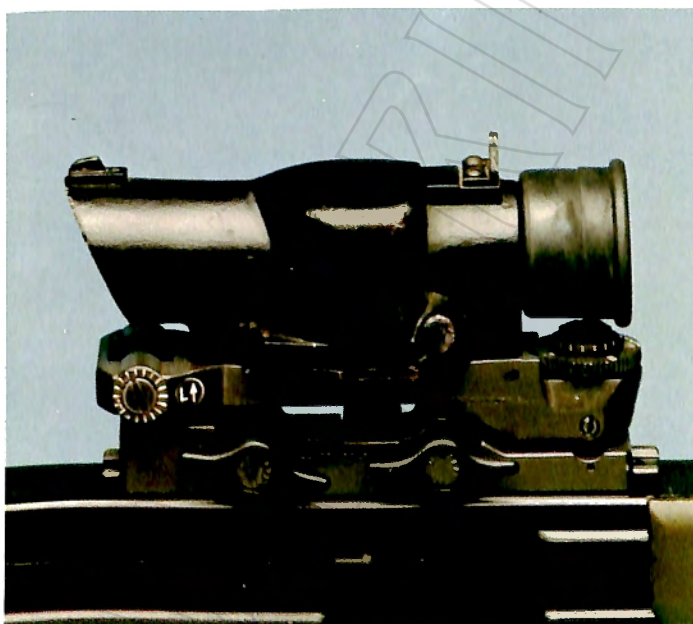


The Individual Weapon

This weapon is designed as a replacement for the conventional 7.62 mm rifle and 9 mm sub-machine gun. Accuracy of the weapon is retained when fired either in the short range automatic or single shot mode. Firing is from a closed breech in both modes. Ammunition feed is from a 30 round magazine with the same interface as the Colt 5.56 mm (M16) magazine. It's standard flash eliminator enables muzzle launched grenades to be fired.

The Light Support Weapon

The Light Support Weapon is of similar configuration to that of the Individual Weapon except that it is fitted with a longer barrel, bipod and rear pistol grip to give it an increased range and accuracy capability when fired in automatic or single shot modes. The 30 round magazine, major sub-assemblies and many components are interchangeable with the Individual Weapon (IW).



Sights

Both weapons can be fitted with the robust high performance Sight Unit, Small Arms, Trilux (SUSAT) optical sight which enables the weapon to be used more effectively and enhances operational performance under poor light conditions. It's times 4 magnification makes it ideal for optical surveillance. The sight is mounted on a bracket which incorporates range adjustment and zeroing. This bracket slides on to a dovetail base permanently fitted to the weapon body and permits sight position adjustment.

For emergency use, a simple open sight is incorporated on the SUSAT body. As an alternative a conventional iron type sight incorporated in a carrying handle is available for both weapons. The weapon can also be fitted with a suitable passive Night Sight. The SUSAT sight requires no maintenance.

1 Barrel and body assembly

The handguard cover is shown open which gives access to the gas system. A finger ridge is clearly visible along the handguard, a feature duplicated on the far side. This ensures that even under wet and muddy conditions it is possible to retain a hold on the handguard. The flash eliminator at the muzzle is of a standard diameter which enables muzzle launched grenades to be fitted.

2 Gas system

Items 2, 3 and 4 form the gas system (short-stroke arrangement). The gas plug (2) is fitted into a hole in the gas block on the barrel – at the front of the handguard cover (1), and is retained by a spring plunger. Gas which is tapped off the bore passes into the gas plug through a small metering orifice. The plug gives a choice of two orifice sizes (normal or excess). These are selected by depressing the retaining plunger and rotating the plug until aligned with the desired setting. A “gas-off” position (no orifice to allow gas bleed off) is offered for use when muzzle launched grenades are being fired.

3 Gas cylinder

When assembled, the gas cylinder forms a sleeve over one end of the gas plug. At the other end a shallow socket locates the piston rod (4). Gasses tapped off the barrel flow down the plug causing the cylinder and piston rod to move the breech mechanism assembly (5) rearwards, four radial holes in the cylinder allow gasses to be vented off after a short travel. The latter now has sufficient energy to complete the recoiling cycle, ejecting the spent case. It now returns to chamber a fresh round under the influence of the return spring.

4 Piston rod

The piston rod and spring, imparts movement to the bolt carrier. After gasses have been vented, the spring returns rod and cylinder to the position for the next cycle.

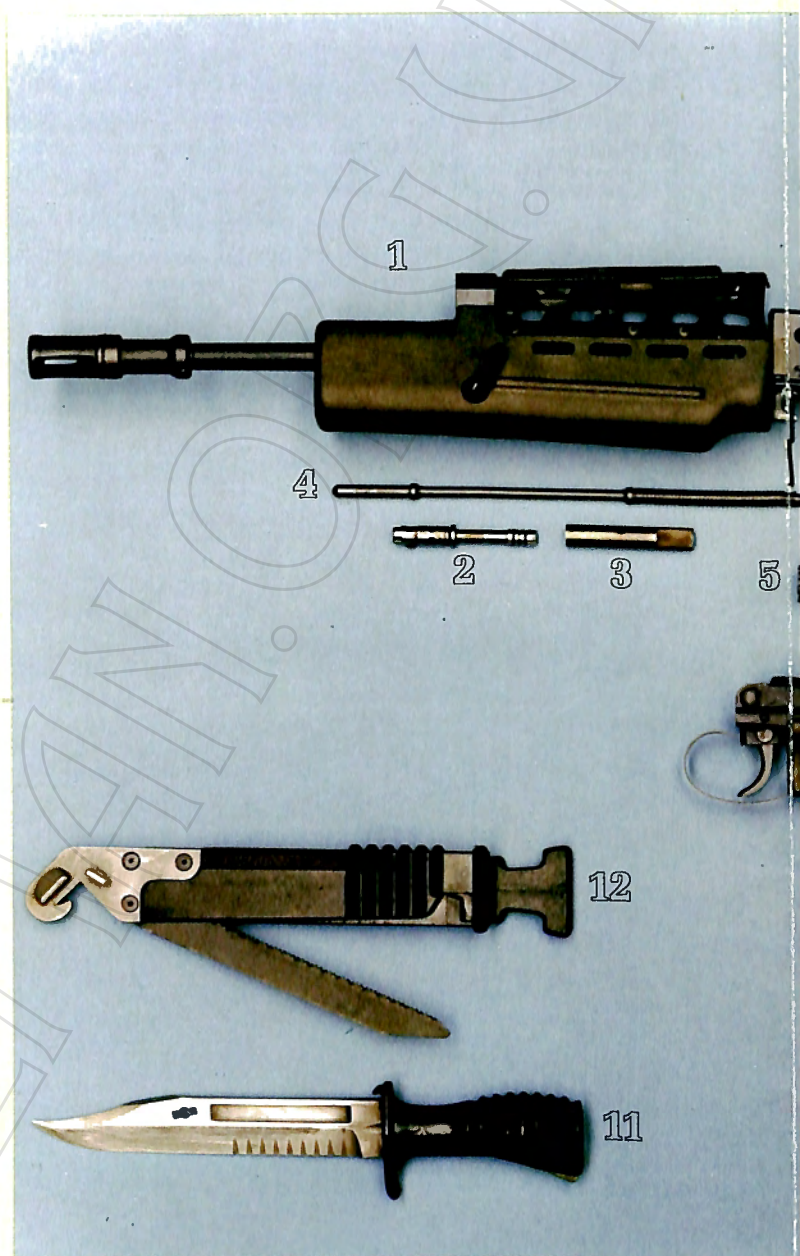
5 Breech mechanism assembly

A multi-lug locking system is used which requires only a small angular rotation of the bolt to ensure effective locking. The breech is unlocked either manually with the cocking handle (6) or by the gas system causing rearward movement of the carrier. The firing pin has low inertia, no firing pin spring is fitted. The carrier design makes it impossible to strike the cap of a round with the breech mechanism unlocked.

6 Cocking handle

This is used to cock the weapon manually and to withdraw the breech mechanism to the rear for inspection. Under adverse environmental conditions it can be used to push home the breech assembly.

Major sub-assembly a



and component parts



Ammunition

The ammunition in the new standard 5.56 mm calibre meets the performance requirements of both the UK and NATO. In meeting operational requirements it is fully effective up to a range of 1000 metres as generally required in infantry operations. To meet the stringent standards of the UK Ordnance Board all rounds are manufactured under high quality control conditions. A variety of natures are available, i.e. Ball, Tracer, Blank Drill and Low Power Training.

An important feature of the ammunition is that it is less than half the weight of the alternative standard NATO 7.62 mm ammunition. This enables more rounds to be carried by the infantryman thereby extending logistic capability and operational effectiveness.

7 Recoil rod assembly

Three rods pass through bores in the carrier. The central rod is a core for the breech mechanism return spring.

8 Trigger mechanism assembly

The unit comprises a trigger mechanism, magazine location and retention butt, and lower part of the weapon body. The selector lever for auto or self-loading single shot fire is located on the housing. The magazine retaining catch is depressed to release the magazine from the weapon. The safety catch is operated by the forefinger of the triggerhand.

9 Magazine

This is a 30 round capacity box magazine with the same interface as the Colt 5.56 magazine (M16 fitting). This ensures the weapon can use the wide range of alternative feed systems available with the same interface. The magazine operates a 'holding open' device. After the last round is fired the breech mechanism assembly is arrested at the rear of the weapon. It is thus obvious when the magazine is empty; the weapon need not be re-cocked after exchanging the magazines. The breech assembly can be released to strip and load a round.

10 Ten round charger

Three chargers fill one magazine which is easily loaded by thumb pressure. When ball and tracer mix is loaded they can be fired in a pre-determined sequence of ball and tracer.

11 Bayonet

Design is based on combat experience. It also serves as a fighting knife and general purpose tool. The bayonet is a one-piece stainless steel casting, the handle is hollow and forms a socket to fit over the flash eliminator. The lower edge of the blade is scalloped for rope cutting and the upper half of the blade has lightening cuts for use as a fighting knife. In conjunction with the scabbard (12) it can be used as a barbed taped and wire cutter.

12 Scabbard

This accepts the bayonet up to the hilt and is attached to the soldiers webbing belt by means of a fastex clip. The scabbard is easily mounted and de-mounted. A metal fixture at its lower end has a tungsten carbide insert for wire cutting and forms a steady for the saw blade, which cuts a variety of materials, including steel. The saw blade stows in the scabbard, on the upper side of which is a sharpening stone for use on the bayonet blade.

13 Sight Unit Small Arms Trilux (SUSAT)

The sight is mounted on a bracket which incorporates range adjustment and zeroing.

Construction

Simplicity in dismantling into main sub-assemblies for cleaning and maintenance are integral design features of both weapons. No special tools are required. The trigger mechanism is a self contained assembly attached to the main weapon body by two captive pins. The pressed steel main body houses the

breech mechanism assembly and guide rods. The barrel is fixed to the body by screwing into the barrel extension which is welded into the body pressing. The non-metallic handguards are fixed to the body/barrel but have a removable cover for access to the gas system.

The best possible use of materials and production techniques have been adopted in the manufacture, ensuring that the User can use the weapon with confidence and safety.



Support services

A full back-up service, including ammunition supplies, technical advice, spares and instruction pamphlets, is available.

Accessories

A number of accessories are available including sling, bayonet, blank firing attachment and 0.22" training adaptor, cleaning kit and multi purpose tool. In general, these could be supplied to meet specific requirements.



Due to a policy of continuous development and improvement, The Royal Ordnance Factories reserves the right to change the specifications and descriptions of parts without prior notification.



Technical data

	Rifle		Machine Gun	
	5.56mm I.W.	7.62mm S.L.R.	5.56mm L.S.W.	7.62mm G.P.M.G.
Weight (kg)				
Weapon (less Magazine and Optical Sight)	3.8	4.3	5.6	10.9
Sight Optical	0.8	—	0.8	—
Sight Iron	0.3	Integral	0.3	Integral
Empty Magazine	0.12	0.26	0.12	—
Loaded Magazine (filled with)	0.48 (30 rds)	0.76 (20 rds)	0.48 (30 rds)	0.87 (30 rd Belt)
Weapon (complete with Sight and loaded magazine)	4.58/4.98	5.06	6.38/6.88	11.77
Length (mm)				
Weapon	785	1140	900	1230
Mechanical Features				
Firing Modes	S.S. & Auto	S.S.	S.S. & Auto	Auto
Method of Operation	Gas	Gas	Gas	Gas
Type of Locking	Rotary Bolt Forward Locking	Falling Breech Block Rear Locking	Rotary Bolt Forward Locking	Dropping Link Rear Locking
Method of Feed	Magazine	Magazine	Magazine	Belt
Ammunition				
Calibre (mm)	5.56	7.62	5.56	7.62
Types:	Ball Tracer Blank Low Power Training	Ball Tracer Blank	Ball Tracer Blank Low Power Training	Ball Tracer Blank
Round Weight (g)	12	25	12	25
Firing Characteristics (approximate)				
Muzzle Velocity (m/s)	940	835	970	845
Recoil Energy (joules)	4.0	17	4	9

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