

Traditional Military Rifles

Traditional military rifles generally fire full-sized ammunition, such as 7.62 × 51 mm (NATO standard) and 7.62 × 54R mm (Warsaw Pact standard),¹ and were in common military use until the widespread introduction of military assault rifles.² The latter are chambered for intermediate calibre ammunition, and are less cumbersome and more suited to closer-range combat. Traditional military rifles, including those with selective fire capability (often referred to as ‘battle rifles’), have however been retained for some specialized military uses, especially where greater power and accuracy is required.

The functioning of modern military rifles can be divided into three broad categories: manually operated, semi-automatic, and automatic.³ With bolt-action rifles (the most common type of manually operated rifle) the bolt is used to chamber a live cartridge and, after firing, to extract and eject a spent cartridge. Self-loading (semi-automatic and automatic) rifles make use of the propellant gases or recoil generated by firing to ‘cycle’ the action (moving parts)—extracting and ejecting a spent cartridge and, on the bolt’s return, feeding a live cartridge from the magazine into the chamber. In the automatic mode of operation the weapon continues to cycle and fire as long as the trigger stays depressed and cartridges remain in the magazine.

States developed bolt-action rifles in the latter half of the 19th century, when military (notably colonial) doctrine favoured engaging enemy forces at long ranges. Modern self-loading rifles (developed in the early 20th century) retained similar calibres, barrel lengths, and effective ranges to their bolt-action predecessors. Following the Second World War a change in doctrine prompted most militaries to adopt assault rifles for shorter engagement distances (Bevan, 2013; Pauly, 2004, pp. 111–17, 143–52).

FN FAL 7.62 x 51 mm rifle



A traditional rifle chambered for full-sized rifle calibre ammunition with a characteristic long barrel.

Over many decades the rifle has been developed to meet the needs of a variety of military and law-enforcement users. Selective-fire battle rifles, such as the Heckler & Koch G3 or FN FAL, allow the user to select either semi- or fully-automatic firing modes. Other variations of traditional full-powered rifles are employed as sniper rifles—designed for long-range accuracy and usually bolt-action or semi-automatic—and anti-materiel/large-calibre sniper rifles.⁴ The latter employ calibres in excess of 12.7 mm; are used against infrastructure, lightly armoured vehicles, and personnel; and are also usually bolt-action or semi-automatic (see Berman and Leff, 2011).

Some states also permit civilian possession of essentially military rifles, although in most cases this is restricted to semi-automatic models.

As with any category of small arm, it is virtually impossible to aggregate total world production of rifles, due to a variety of factors, including incomplete or opaque manufacturing records and the sheer length of time that some weapons have been in use (approaching a century in some cases). Table 1 lists production estimates for some of the most common traditional military rifles of the 20th and 21st centuries.

Contrary to early expectations, intermediate calibre firearms have not fully replaced those of larger military calibre, notably those retained for sniper and ‘designated marksman’ use. These have included either purpose-built or modified weapons able to provide a high degree of accuracy at extended ranges. For example, the earlier general-issue M14 rifle is the basis for the US military’s M21 and M25 sniper rifles. In the United Kingdom, the British Army deployed Mk 4 Lee Enfield field rifles rechambered to 7.62 × 51—designated the L42A1 sniper rifle—until the 1990s. Similarly, the German Heckler & Koch PSG 1 sniper rifle (and later evolutions) is a derivative of the G3 rifle (see Jones and Ness, 2008, pp. 284, 254–

Table 1. **Production of selected traditional military rifles**

Model	Estimated number of units produced globally
Lee Enfield series (all marks)	17 million
G3*	7 million+
M1 Garand (carbine)	5.5 million
FN FAL	2 million+

* May include some licensed production data.

Sources: FN Herstal (2013); Hart Ezell (1995, p. 9); Jones and Ness (2008, p. 238); Skennerton (2007, p. 153)

55).

For the simple reason of practicality, many contemporary purpose-built sniper rifles employ the same calibres used in military rifles, including 7.62 × 51 mm (NATO) and 7.62 × 54R mm (Warsaw Pact) calibres. These calibres are effective at moderate ranges (800–1,000 metres), with performance at longer ranges being dependent on ammunition quality and user skill.

In summary, it is clear that modern military and law-enforcement forces continue to rely on a variety of rifle types for roles to which assault rifles are not best suited. In recent years—and notably following engagements in Afghanistan and Iraq—a number of militaries have re-employed rifles. This has been primarily due to operations in desert and mountain areas, which allow opposing forces to be seen but not engaged at greater distances than the effective range of assault rifles.

Accordingly, the militaries involved are considering the future use of weapons chambered to fire a ‘general-purpose’ cartridge, with a calibre somewhere between those of existing rifles and assault rifles (approximately 6.5–7 mm). The claimed advantages of such weapons would be to extend assault rifle ranges to those approaching the larger, older calibre rifles, while reducing the size and weight of rifles closer to the compactness of an assault rifle.

The introduction of new ‘intermediate’ calibres would, however, have implications for ammunition interoperability—for example, in NATO member states, which have standardized a limited number of existing calibres (Williams, 2012). However, the proven utility of existing designs and the vast numbers already in service suggest that existing calibres and the rifles to fire them are likely to remain in production and use for many decades to come. ■

Notes

- 1 These cartridges are longer, heavier, and develop greater muzzle energy than intermediate equivalents.
- 2 See Small Arms Survey Research Note 25 *Military Assault Rifles*.
- 3 A range of rifles using other loading mechanisms persist, but mainly confined to civilian use.
- 4 See Small Arms Survey Research Note 7 *Anti-materiel Rifles*.

References

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