Shooting stars: divining the signs for small arms replacements

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The shooting stars are the latest developments in small arms replacements around the world. The recent combat experience in Afghanistan and the wear and tear caused to weapons has prompted several nations to review their small arms and consider replacement programmes.

Official statements have painted a picture of some very varied future plans for new rifles, machine guns and other small arms across the world. Starting in Europe, there are strong signals that a small arms transition is in the wings.

Europe

The Czech Army is drawing up re-equipment proposals under the ‘S-21’ programme, which includes new small arms, and is currently in the process of introducing the 5.56 mm CZ805 ‘Bren’ rifle into service. This is available in two versions, the A1 with a 360 mm barrel and the A2 (277 mm), and around 10,000 will be bought over the next few years, of which more than 80% will be in the A1 configuration. In line with a potential shift to a larger calibre round, the Bren was reportedly designed for easy adaptation to the 7.62 mm NATO calibre, but the Czech Army has not so far requested this.

Some initial problems were identified as the result of incorrect maintenance, leading to the issue of an improved manual of procedures. The Czech Army is also introducing 500 examples of the 9 mm Scorpion EVO 3 A1 sub-machine gun, which has seen use in Afghanistan, and 7,000 CZ75 SP-01 Phantom 9 mm pistols.

Poland’s progress is not as advanced, but it is planning some interesting variations. The new 5.56 mm MSBS (Modular Small Arms System) can be adapted to carbine, sniper rifle and magazine-fed squad LMG configurations by changing the relevant parts.

It also has fully ambidextrous controls with fired case ejection switchable from one side to the other by rotating a few parts. This is not needed for the classical rifle but is required for the MSBS’s final trick: uniquely, it is also available with the same variants in a bullpup configuration. The bullpup versions take the same parts in a different lower receiver and are 260 mm shorter than the classical equivalents with their folding and telescoping stocks fully extended, as well as being about 300 g lighter.

The decision to develop both classical and bullpup configurations of the MSBS was reached after initial design work and the testing of demonstrators showed that each had certain advantages over the other. Since designing the system for both versions involved little extra cost, it was decided to do this and to leave it up to each branch of the armed forces to select whichever version they feel would be most suitable. The classic variants are being developed first and are expected to be finalised in 2014, with the bullpups following soon afterwards. Fielding of the system is expected in the 2015-17 timeframe, along with a new MSBS 40 mm under-barrel grenade launcher (UBGL).

Poland is also planning to introduce the 7.62 mm UKM-2000P belt-fed machine gun, which is essentially the light-weight Russian PKM adapted to fire NATO ammunition. Scaling up the MSBS to take the 7.62 mm NATO calibre is also a future possibility.

Combat experience encouraged the British Army to confirm this year that it will take into core the L127A1 40 mm Heckler & Koch UBGL and the L129A1 7.62 mm Sharpshooter rifle acquired specifically for Afghanistan, but not the Benelli 12-gauge tactical shotgun. A more recent competition resulted in the selection of the 9 mm Glock 17 as the L131A1 to replace the long-serving Browning and more recent SIG Sauer pistols.

Other than this, there seem to be few major changes in prospect. The SA80 is considered to be reliable and accurate, if rather heavy, and its replacement is not now envisaged until 2025, though in the meantime it will be upgraded as appropriate. The army is looking for a step-change in capabilities in any replacement, which seems unlikely to be achieved with any conventional 5.56 mm calibre rifle.

The French Army, however, still regards its 5.56 mm FAMAS...
bullpup assault rifles as competitive, but is being forced to replace them - under a project designated AIF - as they’re wearing out and are no longer supported by industry.

France plans to replace all of its small arms over the next five years, but like the UK no longer has a small-arms industry producing military assault rifles and machine guns, so will have to look elsewhere.

No decision has yet been taken of exactly what will replace the FAMAS, but France is sticking with the 5.56 mm calibre and the rifle grenades to which the French Army is devoted. Beyond that, the new rifle will be acquired in two barrel lengths (406 mm and 305 mm), with 45,000 of each being planned.

France is currently introducing the FN MAG for all mounted applications and plans to equip infantry platoons with a lighter 7.62 mm belt-fed MG, looking to acquire 2,000 by around 2016. It has not yet been decided what to buy, but France already has 200 FN 7.62 mm Minis, bought under emergency measures for use in Afghanistan.

In a similar timeframe, France is looking to acquire 2,000 new 7.62 mm precision rifles and improve the .50-calibre Hecate II sniper rifle, while at the other end of the scale 20,000 new 9 mm semi-automatic pistols are to be acquired around 2017.

The Italian Army’s ‘Soldato Futuro’ programme covers various aspects of equipment including a new 5.56 mm rifle, the Beretta ARX-160, which has already been ordered along with the 40 mm GLX 160 UBGL.

This is a light (circa 3 kg), conventional, modular weapon available with 406 mm or 302 mm barrels, which has two advanced features: a fired case-ejection system that can rapidly be switched from one side to the other and a gas regulator that can be adjusted for use with or without a suppressor fitted. This rifle is also being offered in the Russian 7.62x39 calibre for export and possibly special forces use.

A version of the rifle with a bipod and a drum magazine is being offered for the LMG role. Also mentioned is the possibility of a future multi-calibre, powered-rail ARX-200, as well as a medium-velocity 40 mm grenade launcher with a maximum range of 700 m.

**New Zealand**

The New Zealand armed forces are in the process of renewing all of their small arms. Already being acquired are Benelli’s 12-gauge tactical shotgun, FN’s 7.62 mm Minimi as a section-level light support weapon (with the existing 7.62 mm FN MAG available for issue to sections when heavier firepower is required), and the 7.62 mm Designated Marksman Weapon (DMW).

The next priority will be to replace the 7.62 mm bolt-action sniper rifle, probably with one in a larger calibre such as .338 Lapua Magnum, and to acquire a .50 calibre anti-material rifle. A replacement grenade launcher...
and a 9 mm pistol are also on the shopping list, as is a replacement for the 5.56 mm Steyr AUG assault rifle.

It had initially been intended to upgrade the AUGs but this has proven impractical so the current intention is to replace them with a new modular weapon for all services, with procurement possibly beginning in 2014/15. It will still be 5.56 mm calibre and must be suited to using a suppressor, but so far there is no indication as to what the successful design might be.

The Americas
Canadian forces are looking much further ahead than most, being content with their C7 rifle and C8 carbines (effectively M4 and M16 respectively) for the time being.

However, as a long-term project, the Future Small Arms Research (PSAR) programme is exploring the possibility of achieving a major step forward by introducing a number of innovations, such as the plastic-cased telescoped ammunition developed for the US Light-weight Small Arms Technologies (LSAT) programme. In particular, Colt Canada is investigating the concept of a bullpup rifle using such ammunition (possibly in electrically primed form), plus an integrated Metal Storm-type stacked launcher able to fire both 40 mm grenades and (via an adaptor) 12-gauge rounds, a distributed recoil management system and advanced electronics.

Clearly, such a combination of advanced technologies will take a long time to reach service status.

The US Army is unusual in that it does not seem to be planning any major near-term changes to its small arms.

The conclusion of the Individual Carbine competition without a winner means that improved versions of the M4 Carbine will remain the standard rifle, with the 7.62 mm M240 (FN MAG) and MK48 (FN 7.62 mm Minimi), plus the 5.56 mm M249 (FN Minimi) remaining in service for some years. The lightweight M240L is supplementing the standard version.

The most notable recent change has been the upgrading of the 7.62 mm M24 bolt-action sniper rifles to the M2010, chambered for the more powerful .308 Winchester Magnum calibre (with a new multi-calibre Precision Sniper Rifle on the way), plus the introduction by the US Marine Corps of the 5.56 mm M27 squad automatic rifle (HK 416) and the 40 mm M32 six-shot grenade launcher.

Another attempt to introduce a new handgun firing more effective ammunition than the NATO 9 mm FMJ is expected, with a requirement for a Modular Handgun System expected within the next two years. The LSAT programme is still being funded at a low level but does not seem likely to result in a service weapon for the time being.

In the longer term this situation could change dramatically. At the start of 2013, Congress mandated a Small Arms and Small Caliber Ammunition Capabilities Study, which has generated a Caliber Configuration Study to support two new small-arms programmes, designated Combat Lightweight Automatic Weapon System (CLAWS) and Lightweight Dismounted Automatic Machinegun (LDAM). It is understood that CLAWS is intended to result in the eventual replacement of all the existing 5.56 mm rifles, carbines and light machine guns by one modular weapon family with interchangeable barrels, stocks and accessories.

LDAM is seen as an eventual replacement for the 7.62 mm M240 medium machine gun (FN MAG) and the .50 calibre heavy machine gun in dismounted applications. The implication is that two new cartridges (around 6.5 mm and 8.6 mm/.338 inch calibre) would between them entirely replace the existing 5.56 mm and 7.62 mm rounds, plus partly replace the 12.7 mm.

Lessons learned
Some interesting themes can be detected in these various national plans. One of them is the enthusiasm for lightweight 7.62 mm belt-fed MGs that in some armies are replacing 5.56 mm equivalents at section level despite the doubling of the ammunition weight in search of more powerful effects. For the same reason, 7.62 mm rifles have proved highly successful in several armies and have been reintroduced into infantry sections.

At the other end of the range scale is a revival of interest in pistols, not just in acquiring new ones, but also in emphasising training in their use. This may have been prompted initially by the need for ISAF troops to carry self-protection at all times and in all places in Afghanistan, but has been reinforced by the recent French experience in Mali, in which very close combat saw extensive use of pistols and hand grenades.

Fitting in between these range extremes, it now seems to be accepted in many armies that 5.56 mm rifles are best suited for short-range use with priority being given to handiness in urban areas. This is emphasised by the remarkably short barrels being specified.

Historically, 5.56 mm ammunition was developed to achieve its optimum performance in the 508 mm barrel of the M16 rifle, but none of the new assault rifles mentioned here exceeds 406 mm, with the Polish Army specifying 360 mm (even shorter than the US M4’s 368 mm) and carbines being shorter still, resulting in a considerable loss in ballistic performance.

Not all armies have given up on long-range fire with 5.56 mm rifles though; while greatly appreciating the range and hitting power of their 7.62 mm DMW, New Zealand’s forces regard their 5.56 mm weapons as more effective at longer ranges than most, but they use MK262 ammunition, a specialised lead-core heavyweight target loading projectile with enhanced long-range ballistics.

Two other trends in ammunition are worth mentioning: the use of lead-free ammunition, notably with the US Army’s selection of the M855A1 EPR but also with Nammo and RUAG in Europe offering such loadings, and the steady development of hybrid polymer/metal cases by companies such as MAG LLC, whose MK323 .50 calibre round reduces overall ammunition weight by 23%.