

The Medium Myth

Current thinking has led the British Army to define forces as light, medium and heavy. *William F Owen* explains why the concept of medium forces is problematic at best and dangerous at worst



The Israeli Defence Force's new APC, the Namer, is reported to weigh in at 60 tonnes

Medium-weight forces are those that are deemed to be air-portable, and therefore faster to deploy than heavy forces and yet more capable than light forces. This characterisation is highly simplistic, relative and fails under rigour.

What is, or is not, air portable is defined by the performance of a specific aircraft. For example, the C-17, of which the UK has a fleet of seven, can lift 77 tonnes, which accounts for every A-vehicle currently in UK service. Provably, the Challenger 2 is air-portable. Some open sources suggest that with a payload of 72 tonnes, the C-17 has an unrefuelled range of approximately 2,400 nautical miles. The A400M, of which the RAF may receive 22, has a maximum payload of 30 tonnes with a roughly comparable range to the C-17. This means the A400M is unable to lift the Challenger 2 or any of the combat engineer vehicles based on a main battle tank (MBT) chassis, including armoured-vehicle-launched bridges (AVLB). Of particular note is the fact that the UK could only deploy the 105mm towed light gun using A400M, but could deploy the AS-90 self-propelled gun system using C-17.

Essentially, an A400M-deployed force may well be limited to 30-tonne vehicles, with only towed guns and no capable combat engineer support. If, for example, the UK was to introduce a 34-tonne vehicle and A400M is really limited to 30 tonnes, then the whole issue of 'medium forces' is moot and irrelevant. While it is technically possible to deploy armoured vehicles

by air, the question of how realistic it is to sustain such forces by air is deeply debatable. And, while it may be possible to obtain fuel in theatre, rations, ammunition and spares would have to be flown in.

A 70-tonne-plus Challenger 2 has a fuel consumption unit (FCU) of 265 litres, while a 25- to 30-tonne tracked vehicle would seem to have an FCU of about 116 litres – about 57 per cent less. However, combat vehicle reconnaissance-tracked (CVR-T) type vehicles of about 13 tonnes in weight have FCUs as low as 67 litres, which is 43 per cent less than a 25- to 30-tonner. Again, diesel could almost certainly be obtained in theatre. Rations, ammunition and technical stores are mostly unaffected by the weight of the vehicle, bar major automotive components. Furthermore, in relative terms, the 120mm main gun, 12.7mm and 155mm artillery ammunition all weigh the same regardless of the platform that employs them.

Lessons of previous wars

UK forces in Afghanistan are currently fighting irregular forces with a very low level of capability compared to what is known to be possible. As the Viet Cong, Khmer Rouge and Hezbollah have all shown, irregular forces can be equipped with very capable weapons. Regular light forces, such as those trained and equipped along the lines of specialist North Korean or Chinese formations, might combine good equipment with high degrees of training.

Despite the Northern Ireland experience, the British Army's failure to study the lessons of Angola, Chechnya, Lebanon, Rhodesia and many other conflicts has meant that, in common with the US, the use of improvised explosive devices (IEDs) came as a near complete surprise, in that as of 2003, UK forces had chosen not to equip themselves with effective protected mobility. This has now largely been corrected. Ridgeback, Mastiff and Wolfhound are all currently under 30 tonnes and thus deployable by A400M. None of these vehicles should require the amount of technical and logistic support required by turret-equipped fighting vehicles. In terms of trades and manning required to support a stabilised turret with a capable weapons system, weight would seem not to be a factor. A Challenger 2 could well require the same-sized light aid detachment as a vehicle one third its weight, with the same basic systems. Based on a limit of 30 tonnes, the UK can deploy infantry forces with effective protected mobility that might address a low level of enemy capability and an IED threat.

However, the 'medium force' concept assumes being able to compete against an enemy force with vehicles and capabilities not limited by 30-tonne air portability, while possessing only towed guns, and with no capable combat engineer support. Such a force would probably not be capable of operating in a contested urban environment against even a moderate degree of threat. This being the case, the UK government would not see such a force as fit to deploy without giving every possible advantage – and that would mean MBTs, and the so-called heavy force equipments required. Beyond almost anything else, the Second Lebanon War showed how even a moderately skilled and equipped irregular force such as Hezbollah forced the Israel Defence Forces (IDF) to employ every component of the combined arms formation.

Flawed reasoning

The UK military needs to beware that the idea of a medium force having comparable mobility protection and firepower to what is currently termed 'heavy forces' is deeply flawed. While John Matsumura's seldom-read classic, *Lightning over Water*, presented a compelling case of light forces equipped with highly capable, fibre-optically guided, anti-tank guided missiles (ATGMs), the UK simply lacks that capability or the force structure that could employ it². It seems that the UK would be more likely to employ attack helicopters to address the need for a rapidly deployable light force to slow or blunt a capable enemy's combined arms formation. In that regard, it seems fair to ask if the UK's AH-64 Apache has the ability to rapidly deploy by air and in numbers that allow for their effective operation while being sustained by the proposed fleet of A400M or the existing C-17 capability.

As incredible as it may seem to those obsessed with military technology, thick, heavy, passive packs are still required to defeat the 152-155mm fragmentation explosively formed penetrator (EFP) bomblets and the 100mm tungsten armour-piercing discarding sabot (APDS) rounds that almost any T-55 tank in the world can fire. While active protection systems may help defeat some ATGMs and rocket-propelled grenades (RPGs), the need for capable, thus heavy, passive armour packs cannot yet be dismissed.

This would seem to set capable MBTs and armoured personnel carriers (APCs) within the 35-65 tonne region. Some Israeli industry estimates strongly suggest that the amount of armour needed to effectively protect a tracked APC capable of carrying eight infantrymen, with a crew of two to three, would require a vehicle close to 45 tonnes and probably more. Indeed, the German army's new Puma infantry fighting vehicle (IFV) is reported as being 43 tonnes with its most capable armour pack, and the IDF's new APC, the Namer, is reported as being 60 tonnes.

Capable precision-guided weapons may well give a medium or even light force the ability to kill enemy vehicles, but that force can only survive if it can

withstand the kinetic effects that will almost certainly be coming the other way. Moreover, the critical question as to how many vehicles could actually be deployed by air, and to what actual purpose, remains unanswered.

Making heavy lighter?

Quite obviously, there is a compelling case to make better use of vehicle weight in relation to platform performance. It may well be that the UK's Challenger 2 is too heavy, and lacks an effective gun in comparison to that employed by other MBTs. However true or not that may be, it does not make the case for medium forces. The requirement and utility of air deployment is extremely debatable, especially in terms of the size and capability of force that may be required to fight a competent and well-equipped enemy. It may well be technically possible to develop an MBT, 155mm self-propelled gun, AVLB and combat engineer vehicles for less than 30 tonnes. This would require substantial investment for a very doubtful capability. Beyond anything else, if air deployment is not a factor, then the need for medium ceases to have any relevance. Yes, newer vehicles may have better levels of mine protection than some in-service MBTs. That speaks to design expertise and materials, not the merits of medium forces. Given the same design skills and materials, a 60-tonne MBT will have superior protection compared to a lighter vehicle.

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The developing world's infrastructure is not so limited that it cannot accept vehicles in excess of 30 tonnes – China's Type-99 tank is 58 tonnes, the Russian T-90 is 48 tonnes. The T-55 is actually 36 tonnes and has been for over 60 years, when infrastructure was substantially less developed. If the mostly likely threat is someone with a capable RPG-type weapon, being less than 30 or even 35 tonnes gains you no advantage.

One size will never fit all. UK forces are most likely to require a capable MBT and a well-protected APC of equal or comparable mobility in order to conduct effective combat operations. A lighter multi-role vehicle chassis will be needed for the many other roles that modern armies require, and this may well include lighter APCs as the basis for a multi-role vehicle. What will have to be resisted is the desire to employ such vehicles beyond their capability or attempts to forge new types of forces for which we have little or no evidence of their effectiveness. History has dealt a powerful blow to vehicles whose light weight promised many good things and yet turned out to be too light to fight. ■

Footnotes

1. The FCU is a staff planning tool defined as the average amount of fuel required to move 100km by road
2. *Lightning over Water* was published by RAND in 2000. Based on simulation studies, it showed the disproportionate effectiveness of precision-guided indirect fire weapons, fired from light vehicles. While the work gained great prominence among those interested in the study of military effectiveness, some of its insights arguably remain under-recognised