

Tank operations in modern counter-insurgency warfare

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When you need a tank, you need a tank!

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Allied experiences in Iraq and Afghanistan continue to prove the wisdom of renewing the Australian Army's heavy armour capabilities. In particular, the recent expedited re-equipment of the Canadian Army tank fleet has once again emphasised the old lesson that battlefield requirements remain the ultimate driver of effective capability development. And indeed of disproving ivory-tower academic nostrums about the supposed nature of future battle and the alleged obsolescence of main battle tanks. The M1 Abrams, Leopard-2 and Challenger have all performed well in both theatres but US experiences with the Abrams are obviously the most relevant for Australia.

The M1 Abrams began life as a tank primarily designed to kill enemy tanks at long range, and lots of them. This bias for tank-on-tank engagements shaped the development of the Abrams and is apparent in its design. Key features include its thick frontal armour, low silhouette and long smooth-bore gun. In this role its design approaches perfection and it is amongst the finest tanks in the world.

The American-led intervention in Iraq in 2003 saw the Abrams employed in its purest sense, as a tank killer, but only for only a matter of weeks in what is now a multi-year deployment. Since the cessation of conventional force-on-force combat, the role of the Abrams has changed but remains just as vital. Instead of killing enemy tanks in high-intensity combat, the Abrams is now used as a cornerstone of the combined-arms teams needed for mid-intensity combat in complex urban terrain. Few new lessons have been learnt about the importance of balanced combined-arms teams and tactics but many old ones have been re-emphasised.

Adapting firepower

In such terrain, especially where insurgents mount attacks in areas containing large and vulnerable populations of non-combatants, the open-country firepower and target detection advantages of the Abrams' 120mm M256 smooth-bore gun system are much reduced. This is chiefly because the types

of ammunition available are more suited to conventional battle. Time and again, American tankers have found the gun so powerful in urban environments that potential levels of collateral damage simply preclude its use. One result of this has been much greater reliance on the turret-mounted 12.7mm machine gun and the 7.62mm coaxial machine-gun. The three weapon systems together, however, provide tactical commanders with considerable discretion in responding to a threat (overcoming something of a limitation, for example, with Australia's old Leopard tanks).

When the main gun can be used, Armour-Piercing Fin-Stabilised Discarding-Sabot (APFSDS), Multi-Purpose Anti-Tank (MPAT) and High-Explosive Anti-Tank (HEAT) form the main M256 munitions used. Most engagements have been conducted using HEAT and MPAT because of their effectiveness in eliminating bunkers and neutralising buildings being used by insurgents. As an example of the versatility of the tank during combat in complex terrain, the Americans are introducing a new programmable munition, the Line-Of-Sight Multi-Purpose (LOSMP) round. An important design feature of the LOSMP is that the fuse can be set to suit the specific type of target being engaged, whether it is a bunker, vehicle or enemy personnel deployed in buildings. It is anticipated that the LOSMP will replace up to four other rounds including HEAT, MPAT and the newly developed Canister Anti-Personnel (CAP) round.

Survivability and vulnerability balance

The protection provided by the M1 across its frontal arc is excellent and crews are safe under the equivalent of around 1000mm of rolled homogeneous armour. Many M1s have sustained multiple, close-range RPG strikes and continued to operate. Some areas of weakness lie in the flank armour of the track shrouds, rear armour especially near the engine exhaust, and the roof and belly armour. This is a result of the original design emphasis on tank-on-tank engagements

where the armour was designed for protection against direct-fire kinetic and chemical energy weapons across the frontal arc. The armour is still effective, but in the 360-degree threat environment of operations in complex terrain, attacks can come from any direction: in front, above, below, behind or flanking.

Situational awareness also requires careful planning. Once closed down behind the protection of armour, the ability to observe and identify threats is obviously reduced. One lesson long experienced by the Israelis, and re-learned by the Americans in Iraq, is that crew survivability is compromised by the natural desire to gain situational awareness by popping up outside the armour to look around the tank. Close co-operation with accompanying infantry remains a time-tested solution here.

Finally, the stowage of crew personal equipment externally on the turret has proved hazardous. On numerous occasions it has caught fire when struck by fire or blast and most units have now removed such external stowage.

Several of these firepower, protection and situational awareness problems have been addressed by the Tank Urban Survival Kit (TUSK). Modifications include a night-sight for the 12.7mm machine gun on the commander's remote weapons station (CWS), a thermal night-sight and armoured gunshield for the loader's machine gun (LAGS), bar armour for the rear engine exhaust, and Abrams reactive armour tiles (ARAT) for the flank-track shrouds.

Mobility and reliability equation

The mobility and reliability of the M1 on sustained operations has been a highpoint in the vehicle's service. The external auxiliary power unit (APU) allows for reduced fuel consumption, by providing power when the engine is switched off. This is a big advantage as the AGT1500 gas turbine uses the same amount of fuel at idle as at full power. In addition, the APU reduces the engine hours of the turbine, in turn reducing maintenance requirements and further improving reliability. The turbine power plant has proven to be extremely reliable, given the extremely dusty conditions the Americans have experienced in Iraq. This bodes well for Australia, given the dusty nature of many of our domestic training areas. Mobility concerns caused by the vehicles 62-tonne combat weight when crossing bridges have been largely negated by routine route planning.

Some lessons for Australia

The M1 Abrams is a survivable, powerful, battle-proven tank. In Iraq in particular it has proven its value during combined-arms team fighting in complex environments. In the Australian and regional contexts these are exactly the types of task our new M1 Abrams tanks are primarily intended to undertake – as close-support weapons systems to protect combined-arms teams. The experiences of the Americans operating the M1 in Iraq are therefore directly applicable and in detail. Their hard-won lessons about

adaptive firepower, survivability and mobility need to be implemented now – before, not after, our Abrams might be committed to action.

Given the very small size of the Australian tank fleet, it is necessarily but disproportionately resource-intensive logistically compared with our other vehicle fleets. A similar situation applies with engineering maintenance. The need to maximise economies of scale, and the need to simplify ammunition demands both tactically and logistically, therefore indicates that the early introduction of flexible ammunition types such as LOSMP would make considerable sense.

Given Australia's traditional low tolerance for casualties, the operational flexibility and survivability of our M1s would clearly be enhanced with TUSK. Another lesson re-learned from American experience is the importance of a bulldozer blade capability and we need to reintroduce this on some of our M1s without delay.

Finally, despite the vehemence of certain armchair prognostications over the last decade or so about the supposed demise of the tank, a simple truth has again emerged from the complexity of operations in Iraq and Afghanistan. No matter whether a modern battlefield is urban or rural in location, low, middle or high in intensity, or conventional, counter-insurgency or three-block war in nature, nothing can replace a main battle tank for the versatile, responsive and intimate combination of firepower, protection, mobility and communications they add to the combined-arms team.

But the overall lesson is even broader than that. Our Vietnam-era M113 armoured personnel carriers, even when some are upgraded, will still be limited in where they can be safely and effectively deployed. They are now, in effect, only a regional peacekeeping capability. Our ASLAVs needed considerable modernisation before they could be committed to operations in Iraq and Afghanistan. They are also now nearing the end of their second decade in harness. Our new Bushmaster armoured trucks are proving capable but they are not armoured *fighting* vehicles and were never intended to be. They were essentially the result of a money-driven compromise that again postponed the necessary replacement of the M113 and the ASLAV by a proper infantry fighting vehicle.

There are some clear lessons here. And they stand in stark contrast to the flawed strategic policy 'guidance' and resultant bungled capability development that has so foolishly constrained our armoured capabilities over the last two decades. We have, at last, a modern tank, albeit in very small numbers, and still subject to incorrect and often hysterical claims about its supposed unsuitability. No effort should be spared in keeping our tanks modern. We need to ensure that every possible modification is undertaken so they are immediately available, without further upgrading being required, the next time we have to deploy ADF ground forces to further or protect our national interests ♦

Andrew Erskine is a nom de plume.