

Written evidence submitted by Julian Nettlefold, Editor, BATTLESPACE publications

Summary

The UK's armoured vehicle capability has been in rapid decline since the 1980s. The result of this has been difficulty in attracting the right talent into the industry. In addition, management of these companies is lacking the required historical knowledge of platforms and capabilities. This has been caused by several factors:

1. Lack of investment from the MoD and HMG
2. Too many companies in the sector, Alvis, GKN, VSEL, RO
3. The fact that overhaul and maintenance was carried out by DSG not the contractors
4. Lack of technical expertise in the British Army
5. Lack of technical expertise in DE&S
6. Change in requirements from solely European War to Desert War and other scenarios
7. Lack of new technology coming on to the market
8. Overmatch requirements given new threats such as IEDs which add weight
9. Use of existing powerpacks, running gear and suspension which effect mean Time Between failures.
10. The formation of AlvisVickers with the Haaglunds connection led to a drain of UK capability.
11. The killing of the GKN Warrior in favour of CV90
12. The failure and delays caused by FRES and the budget being syphoned off to build the carriers
13. Lack of management capability within AlvisVickers and then BAE Systems to provide a FRES vehicle.
14. The withdrawal from the Boxer programme in favour of FRES. Boxer is a huge success and is being exported across the world. The UK would have been a full partner and would have benefitted from export sales and IP for future variants.

Introduction about the person or organisation

BATTLESPACE Publications covers the whole spectrum of the battlespace, from sensor to shooter. Our news coverage and readership is truly international, contacting the main decision makers in the worldwide defence industry. We aim to provide our readers with the latest developments in the complex and ever-changing world of C4ISTAR and the Global Battlespace.

Recommendations for action by the Government or others

1. Create a technology development forum for armoured vehicles including new technologies, running gear and armour.
2. Create a centre of excellence for new armoured vehicle technology.
3. Create training for DE&S staff in armoured vehicle technology.
4. Better training for the British Army in armoured vehicle technology.
5. Create Apprentice scheme specialising in armoured vehicles.
6. Encourage vehicle engineering as topics at school, college and university

Does the Army have a clear understanding of how it will employ its armoured vehicles in future operations?

The failed FRES requirement in the UK was a mirror of the failed US Future Combat Systems (FCS). The reasons for this was both projects were built around a light force of armoured vehicles which could be flown into theatre by C-17 and other aircraft. Both requirements were predicated on engaging the enemy at range. The IED threat came after both projects were in train.

The new requirements being built around the Strike Brigades suffer from the fact that the legacy fleet cannot meet the Mean Time Between Failure Requirements for the new Strike Brigades due to old running gear and the extra weight requirements.

The marked difference between operating and crucially supporting vehicles in environments from the Iraq desert to the central European area is challenging given the differing operating environments, temperatures and distance.

One of the crucial 'lessons learnt' from the Afghan conflict was the difficulty in supporting the logistic chain from the UK to Afghanistan and the provision of the right spares to keep the fleet running at the tempo required for the theatre demands.

Given the delays to its programmes, will the Army be able to field the Strike Brigades and an armoured division as envisaged by the 2015 SDSR?

The reported delays to the WCSP and Ajax Programmes make it very unlikely that the Strike Brigades will be fielded in the timeframe as envisaged in the SDSR particularly given the effects of COVID-19 on the Trials Programmes at ATDU and the accompanying factory closures.

How much has the Army spent on procuring armoured vehicles over the last 20 years?

Many millions.

This has to be broken down into two segments, UORs and Programmes

1. The Urgent Operational Requirement (UOR) Programmes for the Iraq and Afghan wars were an example of model procurements where new and upgraded vehicles were fielded into theatre. Existing fleets were upgrade such as Warrior to Warrior TES-H, CVR(T) had additional armour, trucks were filled with armoured cabs, and a whole new fleet of MRAP vehicles was fielded to meet the IED threat. The total spend was several billions.
2. New vehicles. The new vehicle procurement process has been a complete disaster. Several millions were spent to achieve nothing. Indeed many people saw the appointment of Atkins as a government move to kill FRES to transfer this budget of £15 billions to the CVF carrier project. The Atkins bill alone was £300 million. This transfer had a totally detrimental effect on the whole fleet which was already ageing. The delays to bring in new vehicles such as Ajax has meant that the legacy fleet of Challenger 2, FV 432, CVR(T), AS90 and Warrior is on its last legs.
 - a. How many vehicles has it procured with this funding?

The total of new vehicles and upgrades is circa 2000 ranging from Mastiff, Wolfhound, Ridgback, Foxhound, Jackal, Coyote, Husky, Land Rover SNATCH and RWMIK variants, MAN and OSHKOSH trucks, Panther, Terrier and Vector as well as numerous ATVs.

What other capabilities has the Army sacrificed in order to fund overruns in its core armoured vehicles programmes?

The Army Budget as a whole is in tatters meaning a continued downsizing in manpower and capability.

How flexible can the Army be in adapting its current armoured vehicle plans to the results of the Integrated Review?

Given the age of the legacy fleet and delays on Ajax the Army has very little leeway to speed up the Procurement Process. Budgetary restraints and COVID-19 sacrifices also have a detrimental effect to numbers and In Service dates of all programmes.

By 2025 will the Army be able to match the potential threat posed by peer adversaries?

Not in all areas but Boxer and Ajax should be starting to get into service by then. Challenger 2 LEP will not be completed by then giving the new capabilities to meet these threats:

The Challenger 2 Life Extension Programme includes:

1. A new turret and smooth bore gun.
2. A new Kinetic Energy (KE) Round bought from the US or Germany.
3. A new Day/Night Hunter Killer capability which will include greater range requirements for the new round.
4. A new upgrade card for the ballistic computer.
5. New Frontal Modular Armour (NMA).
6. An Active Protection System (APS) either Trophy or Ironfist. Sources suggest that Trophy Medium Vehicle (MV) has been selected. This variant has also been believed to have been purchased by Singapore.
7. Upgrade of the Base Platform
8. War stocks and Rheinmetall ammunition qualification.

The armour and APS need to get through development integration critical design review and the NMA needs to complete development, all this before 2022 Quarter 3 review note proceeds.

Is the Army still confident that the Warrior CSP can deliver an effective vehicle capability for the foreseeable future?

No. Warrior CSP looks to be unaffordable and looks to be the sacrificial lamb for the COVID-19 cuts. Its age and aluminum hull has created huge problems in integrating the CT40 canon given the CT40 recoil force of 20,000 lbs and the power requirements through the exiting slip ring.

On inspection by DSG prior to the conversion for the CT40 turret which had had to be redesigned by Lockheed, a number of vehicles were found to have cracks in the hull. These cracks are due to welding steel applique armour kits during the UOR process to the aluminum hull

The Trails programme has not gone well.

To what extent does poor contractor performance explain the delays to the Warrior and Ajax programmes?

Yes and no. The choice of the CT40 canon as GFE equipment on both vehicles is the major cause of problems on Warrior and Ajax. 40mm was chosen by the Army in the first instance as they saw their tank capability disappearing and 40mm was seen as a way of staying in the game. Only France has chosen CT40 given the Joint UK/Franco programme. It has costs over £50 million to get to where it is now but problems still persist:

1. Warrior – Power problems, turret redesign.
2. Ajax – the turret cannot withstand the recoil and wobbles making target acquisition difficult

ASCOD should never have been chosen as the base vehicle for Ajax as both the Spanish and Austrian governments had rejected the vehicle. GDUKLS has had huge build standard problems with the hulls being imported from Spain. There is little or no UK content as the Specification is built around the ASCOD Spanish vehicle.

In addition GDELS is finding it had to retain the right level and capability of staff at its Welsh facility.

It was a brave move to choose Lockheed Martin over BAE Systems to run WCSP. BAE Systems offer was above Lockheed's due to foreseen complexities in WCSP. In addition, given the liquidated damages it suffered on the Terrier programme, BAE Systems was reluctant to take a being hit on any contract overrun on WCSP.

Should the UK have a land vehicles industrial strategy, and if so what benefits would this bring?

It is too late as most of the engineering capability has gone due to requirements or people going abroad. The only way forward is to work on collaborative projects with Europe. The size of the British Army Vehicle fleet is too small to have a UK-only vehicle as the development costs would not be covered by the fleet buy and export prospects are limited due to other countries such as Turkey, Singapore and South Korea. Germany and France have the fleet sizes to be able to building numbers and for other European allies.

The decision made in 2009 by Lord Drayson to end all armoured vehicle hull production in the UK ushered in the death knell of the whole industry. Without a hull-building capability the other capabilities such as power packs, transmission, tracks, suspension, weapon, ballistic and turret design disappears with it.

Hence there was a mass migration from the industry causing huge headaches for companies wishing to employ people for the new Programmes such as WCSP, C2 LEP and Ajax.

There was no incentive for any new management to want to join a dying industry. In addition, all vested capabilities and know-how went when those people retired

Hence the problems with these Programmes as there was little legacy APC knowledge.

The fact that the UK now has no barrel making capability is another case in point.

In my view it would be impossible to rebuild the UK armoured vehicle industry particularly as the majority of graduates want to go into the aerospace or Formula One industries.

What sovereign capability for the design and production of armoured vehicles does the UK retain?

None. Most of the IP is either US, Spanish, German or Swedish apart from the legacy fleets of Challenger 2, FV432, CVR(T) and Warrior.

Does it make sense to upgrade the Challenger 2 when newer, more capable vehicles may be available from our NATO allies?

In the short term yes as the cost of Leopard 2 A7 and Abrams M1A2 SEP V3 is prohibitive and to buy vehicles at this time of their lifecycle would be wasted money. A lease may be an alternative.

The Franco/German Future Tank Programme will make Leopard and Leclerc obsolete.

What other key gaps are emerging within the Army's armoured vehicle capability?

An unfunded replacement for the AS90 howitzer is currently underway.

Mobile Fires Platform will replace AS90 kicks off. A number of companies are considering bidding the UK's Mobile Fires Platform. BATTLESPACE understands that ARTEC is considering offering the Boxer RCH variant, Hanwha's Team Thunder bidding a K9 variant whilst BAE is offering the Archer system mounted on a MAN truck for the wheeled version and no doubt Nexter will offer Caesar.

Has the Army learned from previous failures such as FRES to ensure new vehicles are acquired effectively?

No!

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