

If It Looks Stupid, It Probably Is

by *Brigadier (retired) Charles McBean*

Charles McBean is a Senior Programme Director at SAIC Limited. In response to Peter Flach's paper, he suggests five imperatives that must be adhered to if we are to avoid the mistakes that have dogged the quarter-century tale of woe in the armoured vehicle procurement saga.

I agree with Peter Flach: our record of Armoured Fighting Vehicle procurement, particularly in the light and medium sector is not good. To have produced nothing of consequence in a quarter of a century of unremitting activity and vast expenditure is, to say the least, depressing. Typically it takes a war to concentrate the mind. The array of new Protected Personnel Vehicles is impressive, but as ever, kit bought off-the-shelf and in a hurry will bring with it problems of its own. Some of these – configuration control, supportability, upgradeability, commonality, coherence – I sense are already beginning to emerge. However capable these vehicles are in today's circumstances, they are not armoured fighting vehicles and we may live with the consequences for some years to come.

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Others may disagree, but to my mind the principal failure has been our inability to resolve what should have been no more than a replacement for CVR(T), FV432 and Saxon – FV432 because it shared common utility roles with CVR(T) and Saxon because both the vehicle and the requirement were time-expired. The 20-year excursion through FLAV, FFLAV, CARS, MBAV, MRAV and TRACER/Future Scout produced an escalation in requirements and aspirations that in the end were unsustainable. FRES was an attempt to bring the requirement back down to earth, but it too was hijacked by a dysfunctional procurement system. That it failed so spectacularly was not simply an indictment of the MoD but also of British defence industry.

I don't think there is much to be gained by lamenting the passing of MRAV or, for that matter, TRACER. There is a practice in US defence industry called 'keeping the program

sold' and much advocacy is devoted to doing just that, both by industry and DoD. MRAV was too big, too wheeled and too multinational to be attractive to the principal user who at that time was in the Type 57 Armoured Battlegroup (BAOR). TRACER ceased to be an armoured reconnaissance vehicle, becoming instead a 'key ISTAR asset'. It sat for the most part in DEC ISTAR's capability area and, although it was on a short rein to DEC Ground Manoeuvre (DEC GM), its justification lay increasingly in its contribution to the ISTAR mix and in particular to a promising indirect fire capability, then in the ascendancy due to the potential of netted fires.

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Besides, many had doubts about the efficacy of manned, ground, 'medium' reconnaissance believing that satellites, aircraft or UAVs were likely to be more cost-effective, and this unease was reflected directly in a six-month delay to the programme as Ministers deliberated. Nor was it cheap. To spend such a large proportion of the money available for AFV replacement on such a small proportion of the AFV fleet did not look like good value.

Peter Flach makes the point that stable requirements are essential and I am sure that is the case. But throughout this period there was a strong sense of the procurement driving the requirement, which did not help stability. Requirements must also be credible. TRACER's "highly, highly desirable" C130 transportability requirement was risible and at one stage was even described by a senior MoD official as "more of a design discipline than an actual requirement". But I would go further: both MRAV and TRACER were profoundly unstable *programmes*, primarily because they were collaborative, but also because they lacked a sustainable strategic context and importantly, in the context of military capability, they were simply platforms. If there is a cultural deficiency in our procurement process it is our continuing obsession with platforms as an end in themselves.

Systems Engineering

Much is made of our inability to employ Systems Engineering properly and here I also agree. The requirements capture

process relies on thorough stakeholder engagement and the creation of trade space, within which decisions about trading one *performance* characteristic against another are taken and, once taken, fixed. It is a highly disciplined, iterative, continuous, mundane process that takes place primarily at the Systems, or ideally at the Systems of Systems level. The FRES Utility Vehicle programme had no overarching Systems Requirement that described the relationship between variants as well as their place in the wider Land Battlespace. As a result there was no opportunity to trade off requirements between variants or other dependent systems. The procurement became wholly platform-centric and it has become very clear over time that when traditional AFV manufacturers talk about Systems Engineering, they actually mean engineering systems. An important product of the Systems Engineering process is precisely the sub-optimisation that Peter Flach recommends.

The 80% Solution

Whilst I agree that sub-optimisation – the 80% solution – is wholly desirable, it is not an option under the current system of procurement unless it means taking what is on offer simply because it appears to be ‘good enough’. Sub-optimisation relies on a genuine systemic approach that recognises the contribution of other systems to the creation of an effective capability and is prepared to be less than perfect in order to accommodate them.

By definition, sub-optimisation involves giving something up, some element of *performance* for the greater good – it is a direct product of Systems Engineering. Although we talk a great deal about capability, when it comes to procurement we still procure kit – the Equipment DLOD – and we live in a culture of *optimisation*; each IPT Leader and supplier aims to optimise the performance of his product in competition with others. This has already been recognised by MoD and the creation of Capability Boards will undoubtedly nudge the culture in the right direction. But it will take time.

Sub-optimisation is also importantly about achieving sub-system and component commonality and driving out economies of scale in order to reduce costs. And that is why the Operational Utility Vehicle System (OUVS) approach was misguided, particularly given the initial scale of the programme. The impact on procurement and support costs, training and operational effectiveness would have been profound.

Buying Platforms

More important, I believe, than the ability to buy off-the-shelf is the need to establish a way of buying platforms so that we are not permanently in hock to one supplier or another, and procurement constructs where it is possible to compete programmes at the sub-system and component level whilst still retaining a high degree of programme coherence. In the case of vehicle programmes, the chassis simply becomes another sub-system, ‘dressed’ to an agreed level, in other words, containing those elements of architecture which are

considered common. Traditional AFV manufacturers may not like it because it removes their ability to control the supply chain from the initial procurement through life and it doesn’t tie the customer to their product. But we seem to be moving in that direction anyway: this chassis, that drive train, this turret. If I can specify options for my private car or modify it as I choose (even if I do invalidate the warranty) why can’t I do the same with my AFV?

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So Where Does That Leave Us?

It leaves us with the following five imperatives:

- Avoid collaborative programmes like the plague or at least only join them as a final act of desperation.
- Ensure programmes have a sound strategic context sustainable over time.
- Adapt the procurement process to the needs of the programme; if that means buying off-the-shelf, so be it.
- Think capability and understand Systems Engineering; ensure that there is a stable requirements set before you start.
- And finally, apply common sense – if it looks stupid it probably is. ■

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