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OP TELIC & OP HERRICK – URGENT STATEMENT OF USER REQUIREMENT FOR MEDIUM WEIGHT PPV

References:

A. PJHQ/J5 – Op HERRICK Capability Shortfalls – note to DEP & DJtCap dated 15 Jul 05. (notal)
B. PJHQ/DCJO(Ops)/PROTECTED MOBILITY/LM dated 29 Mar 06 – note to CDS and others. (notal)
C. EC/GM/DCC/SO1 dated 6 Jul 06 – PPV – Strawman Cardinal Points Specification (CPS).
D. GS/DCI(A)/7/4/1 dated 12 Jul 06 – Requirement for a More Capable Protected Patrol Vehicle (PPV). (notal)

BACKGROUND

1. Snatch. At present there are a total of ~ 380 Snatch deployed Op TELIC against a Theatre PPV establishment of 420[1,2]. There are 166 Snatch 2A deployed on Op HERRICK[2]. The Snatch PPV[3] provide the deployed force with a level of manoeuvrability and protection in order to conduct operations, however, the rapidly evolving asymmetric threat faced on Ops TELIC and HERRICK has pushed to capability envelope required of a PPV to the extent that Snatch is now obsolescent. Moreover, the majority of Snatch deployed on Op TELIC are the 1.5 variant which is due to go out of service from January 2007.

2. Evolving Threat.

[1] The holdings of 378 against establishment of 420 reflects the number of vehs lost through RTAs and insurgent action.

[2] Excluding the USUR to up-armour TUM/TUL and recently announced force uplift for Op HERRICK.

[3] A wheeled vehicle, which provides some ballistic protection to personnel inside, designed to carry 4 , to enable primarily a combination of foot and vehicle-mounted patrols generally, but not exclusively, within PSO/COIN operations. In addition, PPV can also have utility to meet discrete combat support, combat service support and administrative tasks. It must enable at least one (ideally two) top cover sentries to be deployed when mobile. PPVs are expected to be able to operate on roads and tracks and need to be agile.

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a. Op TELIC. Since Jul 04, MND(SE) has lost 44 people to hostile action, of which 20 deaths can be attributed to operating in SNATCH. In 2006 alone, not including the death of 5 personnel due to the downing of the Lynx helicopter, 9 out of 11 deaths can be attributed to SNATCH, with the most recent attack on 28 May 06 resulting in the death of 2 servicemen attached to the Rear Ops Battlegroup. The increase in IED activity is assessed to be enduring and the insurgents' use of technology and continual adaptation of tactics are presenting a serious challenge to MND(SE) activity. CGS's recent visit report to theatre stated that troop confidence in SNATCH was low. The threat can be summarised as:

- Similar, high quality EFPs.
- Top and belly attack possible.
- Constantly changing initiation methods.
- Extremely difficult to find.
- RPG & SA attacks ever-present.

B. Op HERRICK. The IED continues to be the most effective and wide spread means of attack for insurgents in Afghanistan. Current reporting indicates IED incidents are proliferating at an increased rate, with IED and suicide attack activity increasing significantly across south and east Afghanistan in 2005 and in the first 6 months of 2006[4]. The types of IEDs that have been employed so far in 2006 are similar to those seen in previous years, with the most frequently employed being RCIEDs, PPIEDs and CWIEDs. These devices have had some improvements in design, employment and emplacement. However they generally continue to attempt to overmatch the target through the use of blast. UXO remains the preferred charge for these devices with and a variety of being the most frequently employed. The improvements in IED design, emplacement and employment are assessed to be evolutionary, rather than as result of transfer of expertise or technology from Iraq or Iran. PIR/EFP combinations and multiple array attacks have yet to be encountered. The threat can be summarised as follows:

- Large IED overmatch.
- Belly and roadside attack.
- Suicide, RC, CW and pressure plate initiation.
- Technology transfer possible from Op TELIC but less likely that increased overmatch.
- RPG & SA attacks ever-present.

TIMING

4. Urgent. The IED and RPG threats on Ops TELIC and HERRICK are here and now; SNATCH is both obsolete as a light weight PPV and the heightened EFP IED

[4] CFC-A IED activity comparisons 2004-6: 2004 – 274 IED strikes, 2005-441 IED strikes, 2006 (predicted)-511 IED strikes. There have been 172 IED incidents in RC South between Jan and Jun 06.

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threat on Op TELIC demands the light PPVs should be replaced by a Medium Weight PPV (MPPV), Op HERRICK requires a light and MPPV mix. Additionally, the current fleet of SNATCH 1.5 on Op TELIC have an Out of Service Date (OSD) from January 2007.

OPERATIONAL REQUIREMENT

5. Tasks. There is an enduring requirement to provide UK forces deployed on Ops TELIC and HERRICK with appropriate levels of manoeuvrability and protection afforded by a MPPV. PPVs are required for the following essential tasks:

- Dominating the ground: route clearance and security.
- Deterrence ops; deny insurgent freedom of movement.
- Support to host nation security forces: joint patrols, protection of bases, police stations, depth security, elections.
- Cordon ops: search, detention, clearance and forensic protection.
- VCP ops.
- Protection of key points and lines of communication: energy infrastructure: power stations, pipelines, electricity lines, transformer, sub stations etc.
- Convoy protection; routine logistic resupply.
- Support to OGDs: humanitarian ops, CIMIC, reconstruction.
- Reassurance ops.
- Info ops.
- Public order ops.
- Command and liaison tasks.

6. Specification. The MPPV must provide:

a. Capacity. The MPPV's capacity is a combination of volume and payload, and includes provision of power for mission systems.

(1) People. Essential minimum of driver, commander, 4 x dismounts to include top cover sentries, plus 1 x specialist (ie interpreter) and their personal equipment, described as 2 + 4 + 1. Snatch cannot meet the capacity or payload requirement to achieve this without exceeding GVW.

- **payload should be allowed per man.**

(2) Stores and Role Equipment. Sufficient stores should be carried to routinely complete a mission, with an on board stretch capacity to achieve a mission in extremis. Provision for stowage includes for in-service role equipment and theatre specific C4I systems, theatre specific ECM systems, and climate control equipment. Additionally PPV should have the capability to be fitted with special to role Public Order equipment.

- **The MPPV should come 'fitted for' current ECM suites and**

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- The MPPV is required to be 'fitted for' Bowman Clip-In fit (both HF & VHF).
- The MPPV is required to be 'fitted with' VIPRR.
- The MPPV is required to have the growth potential to be fitted with long range secure comms.
- The Op TELIC MPPV are required to be 'fitted with' PMR.
- **The Op HERRICK MPPV must be 'fitted for' the Op HERRICK Force Tracking solution (Project AMBIGO).**
- **The MPPV must have sufficient power to meet the above requirements.**

(3) Growth Potential. There should be growth potential, above that delivered at IOC, of at least 25%, and ideally 50%, for payload and chassis GVW. This reflects the historic growth required of many platforms. Similar provision, if not greater, should be made for the provision of electrical power, in order to meet future threats/requirements.

- **Stretch Capacity. Crew + ECM + Bowman = An additional payload is required to mount armour systems to meet specific threats. Base vehicle payload above kerb weight should be at least**

b. Mobility.

(1) Strategic. The MPPV should have the same strategic reach as any other key land environment equipment, and should have the maximum flexibility to be moved within the existing and planned air and surface transport fleet.

(2) Operational. The MPPV should be self deployable over operational distances up to It should also be capable of tactical employment over extended lines of communication, travelling operational distances to tactical mission areas.

(3) Tactical. Typical usage of the MPPV will be on roads and hard tracks, particularly in the context of urban, semi-urban and rural operations, and in poor weather. However, in order to provide tactical flexibility, which contributes directly to survivability, **the MPPV should be safely capable of , when fully laden**, and minimising the specialist training requirement. The advantages of a central tyre inflation system should be investigated. Tactical mobility includes operation at night without white light.

(4) Urban. The MPPV should have a high degree of terrain accessibility in the urban environment, including the ability to access narrow streets, negotiate kerbs and central reservations. Vehicle width in particular and turning circle need to be minimised to achieve this. PPV

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should be able to operate in everyday civilian traffic without causing undue disruption.

(5) Self Recovery. As a minimum the MPPV should be able to be recovered by another MPPV. Ideally MPPV should be equipped with a self recovery capability.

c. Dimensions. The following dimensions are indicative of the scale of vehicle that is desirable.

(1) Wheelbase. The MPPV wheelbase dimensions should be no greater than HUMMV.

(2) Turning Circle. The MPPV turning circle should be no greater than Snatch.

(3) Height. The MPPV height should not be greater than (or very similar to) Snatch.

d. Survivability. Survivability, in particular the mitigation of overmatch, is a key characteristic. A baseline capability of protection should allow continuation of vehicle function after low level attack; further levels of protection concentrate on surviving the effects of the attack and minimising the risk of catastrophic defeat.

e. Physical Protection. The MPPV should have as much protection as possible without compromising its function (capacity and mobility), providing as balanced an answer to the range of threats as is feasible.

(1) Blast Threats. PPV should be able to protect the occupants from the effects of blast from IEDs, mines and other roadside bombs (including suicide car bombs), such that the vehicle hull is not compromised.

- **Base PPV protection should defeat:**
  - **at wheel stations.**
  - **under the belly.**
  - **to the side.**
- **Options for protection against belly attack EFP mines should be considered.**

(2) KE Threats. PPV should be able to protect the occupants from a relevant range of small arms and fragments, commensurate with anticipated threats.

- Base level PPV protection should be against

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(3) CE Threats. A very high probability of defeating · is essential, in addition, the BAE of overmatch from these threats must be mitigated.

- **The MPPV for Ops TELIC and HERRICK must have the ability to mount special armours to deliver EFP IED and RPG protection.**

f. Situational Awareness (SA). SA is not only a key aid to survivability and trafficability, it is also a key component of the MPPV capability. Visibility around the vehicle should be maximised for commander and driver – this also reduces the chance of accidents – **it must have suitable hatches provided for top cover sentries (protected by a wire-cutter).**

g. Firepower. The MPPV requires the ability to return small arms fire or initiate offensive action if necessary, or to deliver non-lethal effects. This will normally be delivered through top cover sentries. **The MPPV must have a weapon mount for a crew served weapon eg HMG and ALGL.**

h. Hostile Crowds. The MPPV should be able to operate and survive within hostile crowds. This capability is likely to include minimising externally mounted components and hardening those necessarily exposed, hidden exhaust outlets, and inclusion of fire suppression systems. It should be fitted with a Vehicle External Tannoy System.

i. Climatic Survivability. The MPPV should be able to operate across the climatic range that UK troops operate in, including the need for both cooling and heating for crew and equipment.

- **MPPV Climatic Range for operations: A1 – C1.**

j. Environmental Impact. Many of the capabilities of the MPPV platform which differentiate it from conventional AVs are in line with its employment principally in post or non-warfighting environments. The posture of a force in stabilisation ops is likely to be a key to success.

(1) Visual Impact. The MPPV should not present an overly aggressive profile during operations.

(2) Noise. The MPPV should be generally quiet, for both tactical reasons, but also to reduce environmental impact.

(3) "Trafficability". The MPPV must be able to operate with ease and safety in civilian traffic, including rush hour. A vehicle that causes obstructions or is otherwise disruptive to traffic will have a negative effect amongst an indigenous population.

(4) Physical Impact. The MPPV should not cause unnecessary damage to local infrastructure.

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JUSTIFICATION

7. Threat. In light of the increasingly sophisticated and potent asymmetric threat that are faced by UK personnel on both operations, there is a requirement for a MPPV, in addition to the current and planned enhancements to lightweight PPV and tracked armoured vehicles. EC advice suggests that we have reached the engineering and technological limits of the physical protection that can be provided by Snatch and other lightweight PPVs. Whilst heavy tracked armoured vehicles do provide the degree of physical protection needed, their profile, agility and lack of operational mobility make them unsuitable for the complete range of tasks on Ops TELIC & HERRICK. Additionally their use does not promote the return to normality, can damage local infrastructure and is not suitable for tasks in narrow urban areas. Finally, Defence has a moral responsibility towards our servicemen to ensure we have done everything that is reasonable to minimise loss to life and ensure operational success; there is still some way to go before that assurance can be offered. Furthermore, the public, political and media expectation is that military operations can now be conducted without significant casualties. A MPPV is needed in order to provide a significantly enhanced physical protection against IEDs (incl EFP) and RPGs in order to prosecute the missions successfully without unnecessary casualties.

8. Impact of Operational Transition. Whilst the Op TELIC Operational Transition will result in a downward adjustment of force levels, compensating reductions in key enablers such as Snatch should not be assumed. Every effort should be made to enhance force protection measures – perversely this may mean that as troop numbers go down, PPV numbers remain broadly similar, thereby affording greater levels of protection to a larger part of the deployed TELIC force. This area will require further analysis once transition dividends are known. Conversely, the recent pressure on Op HERRICK has seen the numbers of troops deployed increase and any assessment of numbers before August's Force Level Review is heavily caveated.

9. Alternative Options. Although it is intended to procure a higher specification light PPV to partially mitigate the light PPV shortfall and Snatch obsolescence (VECTOR) for Op HERRICK and a USUR is in progress to up-armour 432 to relieve the pressure on the WR fleet/force generation of Armd Inf units and to provide additional support to the protected transport role, only a balanced force will give the operational commander the optimum flexibility to meet the range of tasks based on an assessment of threat and risk. Finally, helicopters are already in short supply and it is highly unlikely that additional aircraft will be available to meet the increased demand without severe impact on JHC ability to sustain the current and emerging operational requirements.

INADEQUACIES OF EXISTING EQUIPMENT

10. With a host of obsolescence issues,[5] Snatch is no longer fit for purpose as a light weight PPV and the increased threat requires a MPPV.

[5] In addition to the lack of physical protection, Snatch lacks the mobility, capacity and survivability required to sustain effective operations on TELIC and HERRICK. The details have been previously rehearsed in numerous fora and are not repeated for brevity.

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PROPOSED SOLUTION

11. It is proposed that the current Op TELIC establishment of 510 PPV is met by a MPPV. On Op HERRICK there will continue to be a need for light and medium PPV mix: A lighter (VECTOR like) PPV capability, with a less aggressive profile and greater agility, capable of operation in complex terrain or in areas where the threat is less demanding augmented by MPPV to enable operations where the threat is higher would be the ideal mix.

QUANTITIES OF EQUIPMENT

12. The fluid operational situation in both Theatres with moves towards transition in Op TELIC and new announcements of force increases on Op HERRICK set against the backdrop of Force Level Reviews and newly emerging CONOPS attach a host of caveats to the numbers of MPPV required; the figures for Op HERRICK, in particular, are quite immature. Shown below is the currently assessed numbers, however given the cost in meeting this requirement it is unlikely that this will be met entirely by UOR resources and any subsequent EP uplift will enable a more refined assessment of the numbers to be made once the way ahead for transition is clearer and the situation on Op HERRICK is more settled.

Theatre	PPV Deployment Sep 06	PPV Liability Nov 06	Comment
Op TELIC	~420[6]	510	Should be all MPPV.
Op HERRICK	~300[6]	364[7]	166 VECTOR in 07. Mix of light and medium is required. MPPV requirement is probably ~150.

MANPOWER IMPLICATIONS

13. Not known.

TRAINING IMPLICATIONS

14. Any MPPV must come with an appropriately sized and fully equipped training fleet – it is suggested that these are controlled by the LWC recognising HQ LAND's role as the lead FLC for PPV.

SUPPORT REQUIREMENTS

15. The support solution must be capable of maintaining a level of equipment availability commensurate with operational commitments.

IN SERVICE DATE

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[6] Includes TUM/TUL that require up-armouring.

[7] This figure includes uplift for RAF FP, recent Engr & Inf enhancements and light B veh requirement – early indications that FLR may reduce light B veh considerably hence the assessment ~ 150 MPPV required.

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16. ISD for this capability is ASAP.

COST AND FUNDING

17. The cost of a medium PVV in the numbers requested is thought to be in the region of £300M - £400M.

SUMMARY AND RECOMMENDATIONS

18. **A requirement exists for a MPPV, which seeks to give a very high probability of defeating shaped charge and significant blast attack and addressees all the obsolescence issues of Snatch.**

{Signed on DII}

for CJO

Enclosure:

1. Reference A.

Distribution:

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