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Directorate Equipment Capability (Special Projects)
Ministry of Defence, Room 362, Northumberland House,
Northumberland Avenue, LONDON. WC2N 5BP

Telephone: Military Network:
Fax: Fax:
E-Mail:

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PROJECT DUCKBOARD - WAY FORWARD

INTRODUCTION

1. Background. Project DUCKBOARD began life as a Cat C programme to replace Projects SNATCH and TAVERN, to provide light protected mobility for Counter-Terrorist (CT) and Public Order (PO) operations in Northern Ireland from 07/08 onwards. As such the DUCKBOARD concept was bounded by a well-understood threat and mature operating environments, CONUSE and CONOPS. ECM and communications integration requirements were clearly defined.

2. Current Position. Operational experience in Kosovo, Macedonia, Afghanistan (AFG) and Iraq has highlighted capability gaps in protected mobility for troops operating in Peace Support and post-conflict/CT situations. Most recently a number of SNATCH have been reallocated from NI for operations in Iraq and AFG, with UOR action to adapt them for the new environment; the requirement for light protected mobility is expected to continue to grow in future. In recognition of this trend, the DMB in Feb 04 endorsed an EP04 enhancement measure[1] to bring forward funding for a BG equivalent of new light protected vehicles into 04/05 and 05/06. Despite initial moves towards Normalisation, the requirement for protected mobility in NI, particularly in the Public Order (PO) role, remains enduring. Meanwhile the current fleet of SNATCH vehicles suffers from chassis corrosion[2], requiring an urgent upgrade programme in order to continue to support operations.

3. Issues. The way forward for the capability is beset with unresolved issues. These include:

a. A range of threats across the new operating environments such as Iraq and AFG, with ill-defined CONUSE, CONOPS, ECM and communications requirements.

b. No clearly defined Customer 2 focus or capability management mechanisms.

c. Incomplete definition of the Total Fleet Requirement (TFR).

d. No defined logistic vision or relationship with other mobility capabilities.

4. Aim. This letter defines the way forward for Project DUCKBOARD in order to support current operations, whilst initiating action to inform a Cat C Business Case (BC) by Sep 04.

[1] EP04SP205A.

[2] Recent evidence includes the SNATCH on Op TELIC whose chassis snapped in two whilst the vehicle was on suspended tow.

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ANALYSIS OF REQUIREMENT

5. Requirement Capture. DEC(SP) and SUV IPT held workshops in Jul and Dec 03 to capture the general requirement for light protected mobility across a broad stakeholder community. In overall terms 3 categories of vehicle are required:

Ser	Characteristic	Type A	Type B	Type C	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Role	Low level CT and PO operations (Typified by NI rural & PO role)	High threat CT operations (Typified by post-conflict operations ie TELIC, AFG etc)	High threat CT operations (Typified by post-conflict operations ie TELIC, AFG etc)	All roles are for operations other than war, although some war roles outside the direct fire zone (rear-area security, EOD operations etc) could be considered.
2	Protection	min, ideal (SNATCH)	B6 min (TAVERN)	B6 min	See Footnote 3
3	Capacity	2 + 4 + lt scales (ie NI patrol order for up to 8 hrs)	2 + 4 + lt scales (ie NI patrol order for up to 8 hrs) Payload c 700kg	2 + 6 + full kit *or* 2 + 2 + CUTLASS Payload > 1000kg	CUTLASS is the next generation Remote Control Vehicle (RCV) for RLC and RE IEDD/CMD use
4	Mobility	Roads & tracks only	Mainly roads & tracks. Limited off-road	Mainly roads & tracks. Limited off-road	
5	Firepower	Nil. Top cover hatches essential	Nil. Top cover hatches essential	Nil. No top cover hatches.	Top cover deters close-in attack and hand-held anti-tk wpns. Protection by dismounts/ foot patrols.
6	ECM	Fitted for whole range. ECM specific to role	Fitted for whole range. ECM specific to role	Fitted for whole range. ECM specific to role	
7	Comms	NI – J ROW - BOWMAN	CLANSMAN /BOWMAN	CLANSMAN/ BOWMAN	
8	Environment	Mainly NI. Fit for ACU but not with	Expeditionary – ACU fitted as standard	Expeditionary – ACU fitted as standard	Air Conditioning Units (ACU) have proved to be essential for Iraq/AFG
9	Deployability	C130 essential	C130 essential	C130 desirable C17 essential	
10	Target Cost	< £50K UPC	< £100K UPC	<£150K UPC	

6. Assumptions. In compiling the requirements matrix, necessary assumptions were made:

a. Role. DUCKBOARD should be optimised as a protected patrol vehicle (PPV) operating in a NI-style CT role. Conceptually it should be a logistic vehicle with a degree of protection added rather than a bespoke armoured vehicle. Size and capacity should be optimised for 2 plus the 4-man CT team. As such DUCKBOARD should not encompass the infantry requirement for an 8-man (ie sect) vehicle. The size/protection spectrum should be:

ASCENDING PROTECTION/THREAT SCALE					
Role	Logistic Veh	PPV	Liaison/Recce	Bfd Mobility	Inf AFV
Example	TUM, TUH	DUCKBOARD	CVR(T), FCLV	SAXON, FRES	WARRIOR

[3] : SNATCH equivalent, proof against TAVERN equivalent, proof against

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b. Protection. In CT operations, the terrorist will invariably overmatch the target[4]. Protection levels therefore should be optimised for blast, fragments, the "near-miss" etc rather than to defeat direct attack. Protection for a PPV is more a function of Tactics, Techniques and Procedures (TTPs) (examples include top-cover sentries, combined foot and mounted patrols, multiple vehicle patrols, helicopter top-cover etc) than thickness of armour.

c. Cost. Bespoke armoured vehicles are expensive to develop, build and maintain – the UPC for a basic FCLV[5] is some £260K. The need for large deployment numbers[6] leads to a concept of developing a "cheap and cheerful" PPV by adding protection to a basic logistic vehicle chassis. A broad range of COTS and MOTS products are available.

d. Supportability. A key lesson learnt from SNATCH and TAVERN, which are based on a different chassis/drive train to other in-service vehicles, is the need for as much system commonality as possible with the larger family of General Service logistic vehicles. Supportability, especially in an expeditionary context, is a key driver for PPV, reinforcing the concept of developing a standard logistic chassis rather than bespoke designs.

7. Other Factors. Other external factors are key to the emerging PPV requirement:

a. Imperative for Life Extension to Current Snatch Capability. The current SNATCH fleet is over 10 years old and heavily used operationally. Chassis corrosion leads to a requirement to rework some 45 vehicles/year to support the NI liability. The pressure of operational use means that the fleet in Iraq on Op TELIC will be increasingly difficult to sustain after Sep 05. Some form of project to maintain the current operational PPV capability will therefore be essential in FY 04/05. In the light of operational pressures, limited numbers of vehicles will be available as a "float".

b. Technical Assessment of SNATCH. Technical evaluation of the existing SNATCH fleet has identified that the main problems with the 10 year-old system are the chassis and the automotive train. The protected "pod" mounted on the vehicle has suffered little degradation and could be reused. The simplest and cheapest route to achieve a SNATCH life-extension/upgrade would therefore be to mount the existing "pods" on a new running chassis with automotive commonality with existing logistic fleets; upgrades to ECM and communications would be included. Indicative cost might be £30K to £35K per vehicle.

c. Programme Blight. The major savings measures enforced against DUCKBOARD in EP04[7] and the lack of an endorsed requirement for both numbers and capability mean that a full BC for the whole light protected mobility capability will not be available before Sep 04. However the programme to maintain current operational capability needs to start from Apr 04, especially in view of the operational imperatives and the limited numbers of vehicles that can be released for rework. A twin-track approach will be necessary.

d. Total Fleet Requirement (TFR). The DUCKBOARD TFR remains undefined. Broad scaling assumptions can be based on an NI bn planning figure of 80 x SNATCH for operations in the CT role. For other functions, such as the CMD/EOD area, Future Army Structures (FAS) work has already identified scalings. Current deployments are:

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[4] Historically PIRA destroyed SARACEN in NI. Currently Iraqi and other Middle Eastern terrorists are able to destroy tanks in IED attacks.

[5] FCLV will come into service from 07, at protection level . Variant with remote weapon station costs some £330K.

[6] The planning scaling for an infantry bn in the NI role is 80 x SNATCH and the total NI establishment was originally in excess of 1000 vehicles.

[7] Option No EP04 Ph3 205B reduced the scaling of DUCKBOARD in the expeditionary role (Type B) from Medium Scale (a bde equivalent) to Small Scale (a BG equivalent) in EP04.

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Ser	Role/Theatre	SNATCH	TAVERN	Remarks
(a)	(b)	(c)	(d)	(e)
1	NI (Rural/Urban)	550	-	Equips 6 x bn equivalents (480) with balance supporting enablers such as RE, RMP etc and a repair pool
2	NI (Urban/High Threat)	-	95	
3	TELIC	312	-	280 sourced from NI, 24 from SLE earmark, 4 misc. Includes repair pool. Original requirement 232 + Repair Pool = 278. Total figure includes 4 for
4	ROW	10	-	AFG = 6 and Bosnia = 4
5	Miscellaneous	110	-	Includes: 13 for 2 in Gibraltar: Airfd Sy 32 held by TMP Longmoor 10 with OPTAG for training
6	TOTALS	982	95	

An initial analysis of the TFR might be:

Ser	Role/Theatre	Type A	Type B	Type C	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	NI (Post – Normalisation for PO role	474	-	-	Equips 4 x bn equivalents (320) with supporting enablers (110) such as RE, RMP, Repair Pool (44),
2	Expeditionary Ops – Med Scale		(352)[8] 100		Equips 3 x bn equivalents (240) with supporting enablers (80) & Repair Pool (32)
3	Expeditionary Ops – Small Scale	100	(100)[9]		Equips 1 x bn equivalents (80) with supporting enablers (11) & Repair Pool (9). Could be Type A or B
4	Expeditionary Ops – CMD/EOD			110	Figures from HQ E-in-C FAS work. Equips 2 x sqns (90), enablers (10) & Repair Pool (10)
5	Training Pool	20	20	10	Coy scale for Type A/B, Tp scale for Type C
6	Miscellaneous	18	24	-	Includes: 16 for 2 x Type A in Gibraltar: Airfd Sy 24 x Type B @ SLE readiness
7	**TOTALS**	612	(396) 144	120	
8	Indicative Costs	@ £50K each: £30.5M	@ £100K each: £14.4M	@£150K each: £18.0M	Total Cost approx: £63M. If assume £35K each for Type A solution, Total Cost reduces to approx: £53.8M

e. Linkage to Other Projects. As identified at Para 6a DUCKBOARD occupies a different part of the protection/capability spectrum than FCLV. A potential major user of a Type C DUCKBOARD, 33 (EOD) Regt RE, was originally scaled for 24 FCLV for use by Bomb Disposal Officers (BDOs); these vehicles were removed as a savings measure in EP04. Replacement of these FCLV by Type C DUCKBOARD, which in any case better

[8] EP04 reduced the PPV expeditionary capability from Med to Small scale. Therefore the same scale as Ser 4 is mandated.

[9] Small scale operations might require Type A or Type B PPV. Assume Type A (with lower protection) on basis that small scale operations are likely to be in a more benign scenario.

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suits the requirement for BDOs to deploy RCVs such as CUTLASS, meets the EOD requirement for protected mobility. In a broader context DEC(ELS) plans to provide the next generation of logistic vehicle under the Operational Utility Vehicle System (OUVS) programme from 09 onwards. A protected variant of OUVS is envisaged but not until towards the end of the programme from about 2012. The DUCKBOARD programme, beginning in 04, can therefore expect at least 8-10 years of operational life.

f. Funding. Whilst the detail is still to be refined, the overall financial position is:

DUCKBOARD P9000330	04/05£ (M)	05/06£ (M)	06/07£ (M)	07/08£ (M)	08/09£ (M)	09/10£ (M)	10/11£ (M)	11/12£ (M)	12/13 £(M)	13/14 £(M)	Total £(M)
EP04 Phase 1											
R-DEL	0.226	0.308	0.557	0.985	1.169	1.135	0.567	0.000	0.000	0.000	2.544
C-DEL	0.808	1.732	19.081	18.55	18.988	21.411	12.435	0.000	0.000	0.000	93.005
EP04 Phase 2	Option No: EP04SP205A			B/F 1 x BG of PPV to 04-07, Reduce PPV from Med Scale to Small Scale							
R-DEL	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
C-DEL	+6.00	+7.50	+7.80	-14.40	-21.60	-14.00	-7.00	-1.10	0.900	0.000	-37.700
Final Profile											
R-DEL	0.226	0.308	0.557	0.985	1.170	1.140	0.570	0.000	0.000		4.947
C-DEL	6.810	9.230	26.88	4.150	-2.612	7.410	5.440	-1.100	-0.900	0.000	55.305

g. Affordability. The indicative analysis of the TFR at para 7d, costs the whole programme at some £62.5M, compared to available CDEL funding at para 7f of £55.31M. Therefore, post the DMB savings measure in EP04, the project is unaffordable even at Small Scale. However, if the Type A PPV solution were to be delivered by upgrading existing SNATCH[10] at an estimated cost of £35K per vehicle as opposed to £50K, the overall cost falls to some £53.8M CDEL, bringing the project into broad affordability. The RDEL requirement (for test, evaluation and bespoke development) has yet to be fully costed but is considered adequate.

WAY FORWARD

8. DEC(SP) Intent. DEC(SP) intends to take a twin-track approach to Project DUCKBOARD:

a. Initial Cat D BC. Acquisition action needs to start from Apr 04 in order to support current operations in NI, Iraq and AFG; delay until the full Cat C BC and COEIA are available in Sep 04 risks unacceptable capability gaps. DEC(SP) will therefore staff an initial Cat D BC to cover acquisition up to Apr 06 (ie Yrs 1 & 2). This project will:

(1) Start the programme to upgrade SNATCH to meet the Type A requirement. - a minimum of 100 SNATCH 2 to be available for operations by 31 Dec 04 and 200 SNATCH 2 by 30 Jun 05. This programme would maintain and gradually improve the NI fleet as well as provide a pool for operations in Iraq, AFG and elsewhere. On the basis of committing all available funding in 04/05 and 05/06, some 300 SNATCH 2s would be provided. Provision of the balance of the overall requirement of 474 Type A vehicles (para 7d, Ser 1(c)) will be addressed in the confirmatory Cat C BC.

(2) Conduct an initial Assessment phase for the main DUCKBOARD project, confirming the balance of the Type A and the Types B and C requirement. This

[10] This would have the added advantage of keeping the familiar and accepted SNATCH profile in NI. Other COTS solutions are more aggressive.

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Assessment phase will be funded[11] to a maximum of 2% of overall project value (£1.205M), found from within the 04/05 and 05/06 funding allocation. This process will inform the need for an IG/MG approach in Sep 04, or recommend a single Gate only. The Assessment phase will confirm or modify the 05/06 plans for SNATCH 2 delivery, reprofiling the whole DUCKBOARD line as part of EP05 Phase 2 staffing.

b. Confirmatory Cat C BC. The confirmatory Cat C BC and COEIA will be delivered from Sep 04, aiming to acquire the balance of upgraded SNATCH 2 (numbers TBC) and a BG equivalent of Type B PPV in FY 06/07, with Type C delivery in FY 07/08. Operational imperatives may require this timeline to be brought forward. The remaining vehicles in the existing NI SNATCH fleet will be phased out as and when the operational situation in NI renders them surplus to requirements.

9. Operational Risk. The initial Cat D action will provide enough upgraded SNATCH 2 to maintain current operations in Iraq and initiate the transformation of the NI SNATCH fleet. If an increased number of SNATCH 2 are required elsewhere before Dec 05, for example in AFG, prioritisation between theatres will be required. Alternatively UOR action will be necessary to deliver increases in capability earlier.

10. Logistic Factors. If SNATCH 2 were upgraded to a diesel engine, the logistic footprint would reduce, as would WLC via increased commonality. HQNI would run both variants in parallel, converting to SNATCH 2 by unit for ease of a single fuel policy and ES planning.

11. Future Work. The action matrix below captures the sequence of events and timings now required to guarantee continued support to operations and deliver the twin-track approach. Action addressees are requested to confirm their acceptance of the recommended branch leads:

Ser	Action	Lead	By Date	Remarks
(a)	(b)	(c)	(d)	(e)
1	Agree twin-track approach	DCRS	2 Apr 04	May require information note via IAB to Cat C Approving authorities
2	Baseline Type A URD	DEC(SP)	2 Apr 04	Based on SNATCH UOR for TELIC and input from HQNI
3	Deliver Cat D BC	DEC(SP)	9 Apr 04	
4	Confirm plan matches operational aspirations	D Jt Cap	9 Apr 04	Need early notice of any UOR requirements
5	Confirm TFR	D Jt Cap	30 Jun 04	
6	Establish overall Customer 2 for PPV	D Jt Cap	30 Jun 04	To include management mechanisms, role of DCI(A) etc
7	Detailed URDs for Type B and C PPV	DEC(SP)	30 Jun 04	With input from HQNI, HQ D Inf, HQ E-in-C, PATO LAND
8	COEIA in support of BC	DEC(SP)	31 Jul 04	
9	DUCKBOARD Cat C IG BC	DEC(SP)	30 Sep 04	May be possible to proceed on a single Gate basis

[11] Funding is needed for the purchase of trials vehicles and the conduct of assessment trials.

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CONCLUSION

12. To date light protected mobility in an expeditionary role has been something of an orphan capability, managed on an ad hoc basis from a base capability centred on the NI role. Operational imperatives and the bring-forward of funding now offer the opportunity to develop the capability in support of global expeditionary operations, delivering a coherent and integrated concept, whilst at the same time continuing to meet long-term NI commitments.

{Chots Signed}

DEC(SP)

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