

# ADF hardening itself up for the 'long war'

## Key Points

- **The outcome of a Defence Capability Plan update undertaken in late-2006** by the Chief of the Capability Development Executive, LtGen David Hurley, has yielded a raft of new project recommendations for initial funding in both the 2007/08 and 2008/09 Federal Budgets.
- **Heading the list of additions is a ballistic missile defence capability acquisition program**, accompanied by a boost to the defence force's nation-wide chemical, biological, radiological and nuclear (CBRN) defensive capability.
- **The Government's efforts to boost military CBRN defence** are believed to be couched in a pending whole-of-government national domestic security statement, that seeks to elevate ADF capabilities well above those of the existing Incident Response Regiment.
- **A recent spate of Australian Security Detachment (SECDet) lethal shootings in Baghdad**, has also given military planners a push in forming a Joint Non-Lethal Weapons (NLW) Task Force to drive forward the acquisition of such weapons in 2008.

■ Trevor J Thomas/CANBERRA

Each year, the Department of Defence's Capability Development Executive (CDE) internally updates its capstone ten-year forward acquisition guide - more widely known as the Defence Capability Plan (DCP) - for consideration and approval by the National Security Committee (NSC) of Cabinet. When first launched as a procurement reform initiative in 2000, industry was promised annual updates to the DCP.

In practice, Defence has struggled to manage even a bi-ennial update, and with a huge log of projects now coming through the Defence system as a result of annual 3% real defence funding increases now running to 2016 (as confirmed in the 2006/07 Defence Budget), CDE officials were indicating to ADBR just prior to Xmas that a once every two year's public DCP update had now essentially become the norm.

With 2007 set to be dominated by the Federal election, and the Howard Government likely to want to keep its powder dry for timely defence capability upgrade announcements during the campaign, only selective insights into the formation of the 2007-2017 DCP have been provided, through either the texts of officials speak-



**UPGRADING THE 'WORLD'S BEST' TANKS:** In direct response to increasingly lethal attacks in Iraq, US Marines have resorted to raising M1A1 'Abrams' tank protection levels by adding layers of sandbags. The 2006 DCU has identified a raft of more sophisticated 'force protection' initiatives for the Australian Defence Force. USMC PHOTO

ing at privately-sponsored defence seminars such as the C3I 'Defence Watch' series, and/or publicly-released briefings given to the revamped Capability Development Advisory Forum (CDAF).

Research by ADBR into such materials has established the majority of programs added to the 2007-2017 DCP have been

scheduled towards the end of the acquisition decade, however, room is said to exist within the broad nature of the DCP for selected high priority entries to be moved forward should government priorities suddenly change.

The next opportunity for a public airing of DCP developments (given the next public DCP

is not due until 2008), is the official Defence+Industry (D+I) Conference, being held in Adelaide 20-23 August 2007. The strategic timing of this conference should not be overlooked, as it provides additional time to the Government before it confirms forward directions for the new project Sea 4000 air warfare destroyers, as well as selection of the preferred design for the JP 2048 amphibious ships.

As outlined in the adjacent *Insert Table* projects progressing from consideration in LtGen Hurley's 2006 Defence Capability Update (DCU) into the 2007-2017 DCP have been focused on Government national defence and domestic security (NDS) priorities considered most relevant to an election year.

In particular, this involves Ballistic Missile Defence (BMD) and a considerable stepped up 'whole-of-government' approach to countering the effects of Weapons of Mass Destruction (WMD) attacks - whether delivered by terrorists, rogue states or via a rival state adopting an asymmetric approach to warfare.

A range of acquisition project Initial Capability Development Statements (ICDS) are known to have emerged from the DCU, but apparently did not find their way into the 2007-2017 DCP. Instead, it appears their fuller definition has been held over to help form up the bulk of a revamped (and much more comprehensive) 2008-2018 DCP, which as noted above, is not expected to see the light of day until well after the coming Federal election.

While there are some new projects that have emerged from the 2006 DCU, most projects recommended to Cabinet for initial funding in the coming financial year relate to the routine task of ADF force modernisation, the rounding-out of earlier confirmed projects in a manner consistent with the 7 December 2006 Stage 1 of the Enhanced Land Force plan (ELF - see story page 29 - and set to increase the size of the Army along lines reconfirmed in November), and improving ADF force protection across each of the Air, Sea and Land domains.

# Defence Capability Plan Enhancements

## Insert Table: 2006 Defence Capability Update/Prospective New Acquisition Projects

New ADF Capability Initiative	Project Designation	Expenditure Band	Project Composition Notes
<b>Section A: Projects under consideration for inclusion in the 2007-2017 DCP from the 2006 Defence Capability Update (DCU)</b>			
Electronic Warfare	Defence 224 Ph4	\$150m to \$200m	Replacement/upgrade of the battlegroup/combat team level Close Light Electronic Warfare System (CLEWS) capability.
Intelligence Support System	Defence 7013 Ph5	\$30m to \$50m	Further evolution/upgrade of the Joint Intelligence Support System (JISS).
Ballistic Missile Defence (BMD) and associated Command & Control (C2)	Defence xxx TBD	\$250m to \$350m	Establishment of an Australian C2 and early warning capability for BMD, with linkages to the United States' BMD C2 system.
Chemical, Biological, Radiological and Nuclear (CBRN) Defence	Joint Project 141 Ph2	\$150m to \$200m	CBRN Defence cleanup equipment and ADF force protection (sealing, filters, etc) to counter the introduction of WMDs into the region.
Direct Fire Support Weapon	Land 40 Phase 3	\$150m to \$200m	Replacement for 84mm M2 'Carl Gustaf' Medium Direct Fire Support Weapon (MDFSW).
'Aegis' Ballistic Missile Defence (BMD)	Sea 4000 Phase 5	\$1500m to \$2000m	Acquisition of 'Aegis' BMD capability, including SM-3 missiles, for the air warfare destroyers (AWDs) to counter the introduction of ballistic missiles into the region.
<b>Section B: Projects not progressing to the 2007-2017 DCP from the DCU, but may be considered for inclusion in the 2008-2018 DCP</b>			
Aircraft Survivability	Air 5406 Phase 2	\$75m to \$100m	New fixed wing Aircraft Survivability Equipment (ASE) developed in concert with the US.
Helicopter Survivability	Air 5406 Phase 3	\$75m to \$100m	New helicopter ASE developed in concert with the US.
Electronic Warfare Self Protection	Air 5416 Phase 5	\$75m to \$100m	Electronic Warfare Self Protection (EWSP) for new ADF support aircraft + mid-life F/A-18F EWSP.
Long Range Strike Weapons	Air 5418 Phase 2	\$350m to \$450m	Acquisition of additional JASSM and/or -ER (extended range) missile variants.
Air Traffic Management Control System	Air 5432 Phase 2	\$50m to \$75m	New/enhanced Air Traffic Management Control System.
Geomatic Support Systems	Joint Project 2064 Ph4	\$30m to \$50m	Development of new methods for integrated acquisition, processing and presentation of geospatial information.
Enhanced Situational Awareness for ADF Aircraft	Joint Project 2089 Ph4	\$100m to \$150m	Data linking and communications bandwidth for networking sensor information amongst air warfare platforms.
Situational Awareness for the Land Force	Joint Project 2089 Ph5	\$100m to \$150m	High bandwidth data transfer and display networking sensor information in land combat vehicles.
Networking of Land Forces	Joint Project 2089 Ph6	\$50m to \$75m	Data linking for land force combat support systems.
Deployable Force Infrastructure	JP xxx TBD	\$30m to \$50m	Deployable accommodation shelters with protection, packaged in ISO shipping container form.
Joint Fires	JP xxx TBD	\$50m to \$75m	Raising an expanded ADF Joint Fires capability, espec for Terminal Attack (Close Air Support).
Battle Group Air Defence	Land 19 Phase 7	\$750m to \$1000m	10-15km range anti-aircraft and missile Ground Based Air Defence (GBAD) system.
Counter Rocket, Artillery, Mortar and Missile (CRAMM) System	Land 19 Phase 8	\$450m to \$600m	Short range, difficult target GBAD system, could be a missile, cannon or directed energy system and matched data fusion with Land 53 Weapon Locating Radar (WLR) sensors.
Night Fighting and Surveillance Equipment	Land 53 Phase 3	\$150m to \$200m	New night surveillance equipment including long-range thermal cameras, Ground Surveillance Radars (GSR) and Unattended Ground Sensors (UGS).
Field Vehicles, Modules and Trailers	Land 121 Phase 4	\$450m to \$600m	Top-up buy to provide full Field Vehicle fleet across ADF as current Land 121 Phase 2/3 expected to only fund a partial fleet.
Aviation Refuelling Trucks	Land 121 Phase 5	\$75m to \$100m	50-60 cross-country capable large capacity refuelling trucks for Army Aviation Forward Refuelling and Arming Points (FRAP).
Combat Service Support Network	Land 127 Phase 2	\$30m to \$50m	Battlegroup/Combat Team sustainment C2 system.
Lines of Communication Bridging	Land 139 Phase 2	\$50m to \$75m	Rapid mechanically deployed 20-40m MLC70 bridges for Army Engineers.
Protection for Ground Forces	Land 400 Phase 2	\$1000m to \$1500m	Additional armoured vehicles and unmanned land warfare systems. Numbers and types to be determined by Land 400 scoping study and Phase 1 'First Pass'
Main Battle Tank Upgrade	Land 907 Phase 2	\$150m to \$200m	Block upgrade of the M1A1 'Abrams' AIM tank fleet aka TUSK.
Non-Lethal Weapons (NLW)	Land xxx TBD	\$50m to \$75m	Less than lethal weapons as determined by new ADF Joint NLW Task Force.
Vehicle Survivability Enhancements	Land xxx TBD	\$350m to \$450m	Active Protection Systems (APS) and enhanced add on armour, Explosive Reactive Armour (ERA) or passive arrays for land warfare platforms to counter proliferation of Anti-Armour weapons.
Engineer Manoeuvre in Complex Terrain	Land xxx TBD	\$30m to \$50m	Anti-Structure munitions, wall breaching systems and urban obstacle crossing equipment for Army Engineers.
Navy Minor War Vessel Replacement	Sea 1444 Phase 2	\$450m to \$600m	Replacement of 'Armidade'-class patrol boats after 15-year life.
Enhanced Force Protection for Maritime Assets	Sea xxx TBD	\$450m to \$600m	Force protection for naval vessels & high value offshore platforms, including self-defence weapons & potentially unmanned vessels. <span style="float: right;">ADBR</span>

**NOTE:** The above is an ADF capability enhancement guide prepared by ADBR researchers. The Department of Defence has not released any official 2007 or 2008 Defence Capability Plans.

The likely addition of a Ballistic Missile Defence acquisition program to the DCP has already been addressed in ADBR's cover story (*refer page 16*), while the projected boost to the ADF's Chemical, Biological, Radiological and Nuclear (CBRN) defensive capability will most probably be combined with a wider whole-of-government response at Budget

time, or later substantive statement during the election campaign. The new CBRN defence capability statement is, nevertheless, expected to elevate aggregate national capabilities well above those of the existing Incident Response Regiment (IRR), which was hastily formed via Joint Project 2087 in the aftermath of the 9/11 terrorist attacks.

As it currently stands, the ADF provides direct CBRN response capability through the Special Operations Command (SOCOMD) IRR force, and in particular, the Chemical, Biological and Radiological (CBR) Response Squadron and an Emergency Response Squadron that adds firefighting, and search & rescue to the response mix.

The IRR, however, was only ever resourced with 300 personnel as an add-on to the Tactical Assault Groups, and if already tasked to deal with a localised CBR incident, would struggle to provide any effective response capability to a WMD attack instituted by a rogue state. As part of a wider Government approach just formed to



**NEW CAPABILITY GRAB BAG IN FUTURE DCPs:** Likely new initiatives to expand ADF capabilities coming in future budgets range from acquiring high mobility Aviation Refuelling Trucks like the 14,990 litre capacity MTVR-based tactical aircraft refueller adopted by the UK RAF (far left), mechanically deployed 'lines-of-communications' bridges (left centre), expanded Non-Lethal Weapons like this LRAD acoustic system (right centre), and enhanced weapons with potential to double existing strike ranges (ie: to in excess of 1,000km), as offered by the new JASSM-ER missile (far right).

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THAAD is said to provide much better detection and tracking of threat missiles over the legacy 'Aegis' SPY-1 radars, including discrimination of the actual missile warhead if decoys are deployed.

According to Ed Miyashiru, the Vice President of Raytheon Missile Systems, the Block II (or 'full-width' 21 inch diameter missile) will significantly increase missile thrust given they will have 1.5 times the velocity at burnout of Block I missiles - thus implying an intercept altitude as high as 300-400km. He told ADBR that "additional capabilities would potentially enable mid-course intercept of longer-ranged ballistic missiles," however, they currently remain to be fully funded.

Accordingly, one reasonable alternative to the 'Aegis' BMD system solution flagged by Dr Nelson after AUSMIN talks in Washington is the THAAD, which is on its way into military service after securing 4 January a US\$619m production order from the MDA. The contract, for the first two fire units, includes 48 interceptors, six launchers and two fire control and communications units, and is scheduled for fielding in Fiscal Year 2009 - four years before the RAN's first AWD is to be launched.

So, for roughly the same cost (as estimated to Japan) to fit out three 'Aegis' BMD systems on the RAN's new air warfare destroyers, Australia could acquire four THAAD systems on the back of the MDA order, and at much lower risk, and without the required integration with the AWD, and with three times as many interceptors. This means the ADF could provide ready BMD protection to multiple prime Australian cities, at all times providing at least twice the coverage of an AWD-based solution, and without compromising the initial concept of operations that has so far driven project Sea 4000.

Using the MDA's figures, eight THAAD batteries would cost upwards of \$3.5b, but after covering mainland capitals, would still leave one system for forward deployment with ADF expeditionary forces. Further, THAAD has been designed from the ground up for rapid relo-



cation, and is also capable of deployment by the RAAF's new C-17A heavy lift transports - requiring four flights to establish a minimal capability (ie: at least eight interceptors).

One of the most impressive elements of the THAAD system is its X-Band phased array radar, which is said to be populated with 25,344 transmit/receive modules across its 9.2m<sup>2</sup> aperture. As such, the radar is capable of detecting ballistic missile threats (without external queuing) launched up to 2,500km away, whilst also providing constant tracking and discrimination against decoys and missile kill assessment.

The THAAD 'hit-to-kill' missile construct provides two intercept opportunities from as high as 150km, and over a range of 200km against intermediate range threats (under 5,500km range or less than 6km per second re-entry), and when supported by a PAC-3 missile, can provide a third intercept opportunity.

Intercept opportunities against higher speed missiles will be limited, however, but are nevertheless claimed to be superior to the SM-3 Block IA as the THAAD system can engage both endo- and exo-atmosphere targets (ie: 'in' and 'out' of the atmosphere), while the SM-3 Block IA is more focused on exo-atmospheric engagements.

In short, and what should hopefully be in Defence's report when it goes to the government mid-year, is that the land-based THAAD offers much improved capability against short-range missiles, and additional intercept opportunities against longer-range missiles.

Further, and considered to be of increasing importance in the burgeoning cost of the project Sea 4000 air warfare destroyers if BMD is to be added to all three ships, is that the ADF's consideration of options for the acquisition of BMD capabilities might be much better tuned to budgetary limitations if the subsequent acquisition was limited to only one class of intercept system.

ADBR

## Project Air 8000 - Ctd from page 15

builds - followed by a pitch to rebuild the six existing CH-47Ds (to yield an eventual fleet of 9-10 helicopters) - Lockheed Martin has similarly not been slow in preparing itself for project Air 8000.

The company appears well positioned to supply additional C-130Js (of either the extended- or short-fuselage type) on the back of a trade-in deal for RAAF EWSP'ed C-130Hs, with the Royal New Zealand Air Force (RNZAF) one likely resale target.

The RNZAF currently operates five 'H'-models, and is subjecting them to an extensive L-3 Communications SPAR Aerospace-led Life Extension Program, after deciding to forfeit a new-generation 'Hercules' acquisition opportunity secured on the back of the RAAF's earlier 'J'-model purchase.

Acknowledging the economics of small numbers on battlefield airlifter support costs, and assum-

ing the JCA ends up favouring the C-27J, the consideration of issues related to commonality with legacy systems might just force the ADF down this path. Armed with 'Kinnaird'-process tender quality information, a more complete picture of the RAAF's future airlift force might just be ready for a government decision within the 2007 election year.

In terms of aircraft delivery precedents, the Italian Air Force gave permission in December 2006 to Alenia to divert a C-27J originally destined for delivery to its 'Pisa' Air Base to satisfy early delivery to Lithuania, which had previously ordered three aircraft on the basis the first was delivered by the end of 2006. Accordingly, it remains to be seen whether the speed of military acquisition processes displayed for the C-17As, has any hope of filtering down to the wider Australian military airlift fleet. ADBR

## 2006 DCP Enhancements - Ctd from page 22

ready fielded significant numbers of NLW systems into complex warfighting theatres such as Iraq.

The Royal Australian Navy (RAN) was an early adopter of NLWs via the American Technology Corporation's Long Range Acoustic Device (LRAD), which directs an acoustic beam effect onto selected targets to generate a 'mission-withdrawal' response.

Further, a recent spate of Australian Security Detachment (SECDET) lethal shootings in Baghdad, including the politically sensitive 22 June 2006 killing of bodyguards to the Iraqi Minister of Trade (Abdel Falah al-Sudany), might potentially have been avoided if the ADF had possessed an NLW capability.

The US Army and Marines in Iraq already make extensive use of non-lethal weapons to ascertain the intent of vehicle drivers and civilians approaching convoys and hardened positions.

In operational circumstances, the NLW is the weapon first fired, as a means of making it clear to drivers and non-combatants that further approaches to coalition forces is highly likely to generate a lethal response.

SECDET members in Baghdad again fired lethally 14 January on the occupant of a vehicle, said to have penetrated the first of a number of coalition check points in the vicinity of the Australian Embassy. According to officials, the incident occurred "when a vehicle failed to adhere to access control measures, and refused to stop despite specific signals to do so."

Preliminary assessments indicate the driver of the vehicle was a civilian contractor employed in the International Zone. A detailed investigation into the incident has since been instigated by Australian forces in conjunction with coalition authorities. ADBR