

# APDR

ASIA-PACIFIC DEFENCE REPORTER

A U S T R A L I A N D E F E N C E I N A G L O B A L C O N T E X T

May 2008  
VOL. 34 NO. 4

## Defence budget 2008



## Rethinking the NSC

**AIR 7000:** AUSTRALIAN DECISIONS TAKE TIME

**JP129:** CONFIRMED AS IN TROUBLE



# Defence Tech SA Ad (p2)





# CONTENTS ]

**Editorial** ..... 4

**APDR Events Directory** ..... 41

## Headlines

12 month growth pause in Defence funding ..... 6

New wave of classified ADF projects? ..... 8

Fast track review of defence procurement ..... 9

Super Hornet to carry JASSM ..... 10

## New Zealand

NZ appoints reviewer to probe MRV failings ..... 11

Activists strike NZ SIGINT facility ..... 12

New light utility helicopters for RNZAF ..... 12

## Cabinet

NSC neglecting big picture strategic planning ..... 14

## Defence Budget

Delayed projects expected to advance afresh ..... 18

Top 30 projects by 2008-09 forecast expenditure ..... 19

Fuel and ordnance dominate ADF sustainment ..... 21

Contractors warned to lift performance ..... 23

Operations to cost A\$1.229 billion ..... 26

CTD programme to undergo funding cuts ..... 27

Four year facilities spending boost ..... 28

## In Flight Refuelling

USAF taps KC-45A ..... 24

RAAF contracts interim tanker services ..... 25

Australian link to smart design ..... 26

## Air 9000

Tuning underway for ADF helicopter strategy ..... 34

Big dippers go deep and low ..... 36

## UAVs

Northrop wins BAMS ..... 30

Government confirms JP 129 in trouble ..... 32

RAN interested in follow-on small UAV trials ..... 33

## Obituary

Ross David Butler ..... 40

## Military IT

Emerald support tender released ..... 42

NEC releases new ruggedised notebooks ..... 42

## Companies

EOS continues loss making but flags near term turn ..... 44

Metal Storm files new losses ..... 45

## First Person

Australian Foreign Minister Stephen Smith ..... 46

**Cover description:** Northrop Grumman's RQ-N Global Hawk has been selected for the joint Australian-US BAMS programme, but acquisition for the ADF has yet to be confirmed. *Northrop Grumman artwork*

Contributor's opinions do not necessarily reflect those of the publisher or editor and while every precaution has been taken to ensure that the information contained in this publication is accurate and timely, no liability is accepted by the publisher or editor for errors and omissions, however caused. Articles and information contained in this publication are the copyright of Asia Pacific Defence Publications Pty Ltd (unless otherwise stated) and cannot be reproduced in any form without the written permission of the publisher. The publisher cannot accept responsibility for loss or damage to uncommissioned photographs, manuscripts or other media.

**Managing Director**

Marilyn Tangye

**Publisher & Editor-in-Chief**

Peter La Franchi

Phone: +61 (0)417 476 791

Email: peter.lafranchi@venturamedia.net

**Contributors**

Ehsan Ahrari, Dzirhan Mahadzir, Vladimir Karnozov, Richard Scott, Mark Farrer, John Haseman, Hank Schouten, Jean-Michel Guhl, Nicholas Merrett.

**Graphic Design**

Angela Otten

**Australia**Ventura Media Asia-Pacific Pty Ltd  
PO Box 88, Miranda  
NSW 1490 Australia  
ABN 76 095 476 065**Singapore**Raymond Boey  
Regional Manager  
Block 729 #04-4280 Ang Mo Kio  
Avenue 6, Singapore 560729  
Phone: +65 6457 2340  
Fax: +65 6456 2700  
Email: raymond.boey@venturamedia.net**Subscriptions**

Rose Jeffree

Phone: + 61 (0)2 9526 7188

Fax: + 61 (0)2 9526 1779

Email: subscriptions@venturamedia.net

**Advertising Offices****Australia and New Zealand**

David Tsang

Phone: + 61 (0)2 9526 7188

Fax: + 61 (0)2 9526 1779

Mobile: +61 (0)412 328 008

Email: david.tsang@venturamedia.net

**Europe**

Diana Scogna

Phone: +33 1 4315 9829

Fax: +33 1 4033 9930

Mobile: +33 (0)6 6252 2547

Email: d.scogna@dsmedia.com.fr

**Israel**

Talbar Media

Phone: +972 3 562 9565

Fax: +972 3 562 9567

Email: talbar@talbar.co.il

**Italy**

Ediconsult Internazionale

Ida De Mari

Phone: 010 583 684, Fax: 010 566 578

Email: genova@ediconsult.com

**Russia & CIS**

Laguk Co.

Yuri Laskin, Sergei Kirshin

Phone: + 7 495 912 1346

Fax: + 7 495 912 1260

Email: ylarmlml@mtu-net.ru

**USA & Canada, South East & South America**

Joan Daly

Phone: 703 938 5907

Fax 703 938 5910

Mobile: 703 407 3204

Email: joan@dalyllc.com

**West Coast Mid Atlantic and Canada**

Tony Calamaro

Phone: 610 449 3290

Email: tcalamaro@comcast.net

**New England Upper Mid West**

Maryann Johnston

Phone: 973 252 0680

Email: maryann.johnston@att.net

**Printer**

Sunrise Printing &amp; Supplies Pte Ltd

ISSN 1446-6880

**Australian Public Affairs Information Service.**Asia Pacific Defence Reporter is indexed in **APAIS**: Australian Public Affairs Information Service produced by the National Library of Australia in both online and printed form. Write to: National Library of Australia, Parkes Place, Canberra, ACT 2600 Australia. Addressing requests for **APAIS** online access to Ozline: Australian Information Network; Sales & Subscriptions hotline, phone +61(0)3 9925 8210 or fax +61(0)3 9925 8299 for **APAIS** online or printed **APAIS**.**LEADER**

PETER LA FRANCHI

SYDNEY

# Dismantling DSTO has to be looked at

The role of the Defence Science and Technology Organisation, as a supporting element of the Australian Defence Force and the Department of Defence, is again undergoing review as part of the current White Paper development process. While that review is timely, there is the very real risk that it will fail to look at the role and function of DSTO with fresh eyes. In so doing it is highly likely to miss the opportunity to provide Defence with a truly innovative and responsive level of science and technology support.

Not only is it time for DSTO's core roles and functions to be re-assessed; it is time for the very requirement for an organisation like DSTO to be looked at with the most critical eyes possible and the widest possible range of alternative models assessed.

There are three primary streams of concern about DSTO that drive the need for such a far reaching re-appraisal, respectively coming from the Australian Defence Force, defence industry, and the federal government.

Within the service arms DSTO is seen as a distant and frequently non responsive source of theory rather than a provider of near and medium term technological assistance. DSTO has sought to bridge that divide through the long term mechanism of posting scientific liaison officers to the headquarters of each service arm and the structuring of its funding arrangements along service lines, but the core challenge remains. Related to this is DSTO's continuing innate focus on pure research, meaning its corporate culture and underlying ethos is that of a scientific organisation, rather than an operational division of the Australian Department of Defence

Australian and international defence industry concerns incorporate several different facets. There is a collective assessment that while DSTO does periodically come up with real innovations in military technology, it frequently spends inordinate amounts of time re-inventing the wheel. Similarly, as DSTO reacts to the increased pressure on it for improved performance, the combination of its prevailing culture and its lack of appreciation for what represents benchmark military technology result in it seeking to actively encroach into the commercial arena. That encroachment frequently is in the form of offering developmental solutions where off the shelf products are already in place. Industry also has valid longstanding concerns about DSTO's very real lack of regard for commercial intellectual property.

The federal government's assessment of DSTO over the past two decades is a case study in long term loss of confidence. That confidence cycle was badly damaged in the last half of the Hawke prime ministership through the provision of non-responsive information, and in at least one critical case related to operational issues associated with the first Gulf War, the provision of fundamentally wrong information being placed before

Cabinet ministers. Government confidence in DSTO was also undermined by how the organisation interpreted the introduction of the commercial support programme – an issue that even today remains worthy of an independent review in its own right, particularly if one looks at the hard definitions of what is core and non-core in the Defence tail.

The early years of the Howard government saw active consideration being given to privatisation of DSTO, this being heavily inspired by the United Kingdom's highly successful corporatisation and divestment of its own military research arms with the creation of QinetiQ. DSTO's shrill reaction bespoke an organisation which totally failed to understand how rapidly the world was changing – a view widely reinforced when DSTO also announced that the additional funding being provided to it under the 1998 Defence and Industry Policy Statement for concept technology demonstrations would be channelled into new research on underlying science, as opposed to providing solutions to war fighters. The CTD programme may have survived for another ten years, but the gap between its stated objectives and its outcomes in the form of new capabilities for the ADF is more than apparent

The final phases of the Howard government saw DSTO funding arrangements overhauled to try and rebuild its responsiveness to the wider ADF, with the primary mechanism being tying funding to individual capability development and sustainment projects. That measure did mean DSTO was at last being exposed to real world pressures on an ongoing basis, but again the organisation has interpreted that as an opportunity to push developmental rather than extant technology solutions.

Finally there remain longstanding Federal government concerns at the lacklustre leadership that DSTO has produced over the past two decades. That the current search for a new Chief Defence Scientist is being conducted internationally says much.

There is no doubt that the Australian Defence organisation as a whole is in real need of scientific and technological support. What is not clear is whether DSTO is now the vehicle best placed to provide that support. The dismantling of DSTO has to be placed on the table; as does the transfer of its enabling and underlying pure research functions to other organisations such as CSIRO or outsourced to universities. The United States' small business innovative research programme offers another direction that might also have benefits for bolstering private sector spending on research and development.

Clearly there are multiple options available for what DSTO might become; what is critical is that the current review must look at them all, particularly given the hard budget pressures now gathering about the Defence portfolio as a whole. **APDR**



# Turbo Mecca Australia Ad (p5)



PETER LA FRANCHI SYDNEY

# 12 month growth pause in Defence funding

The new Federal Government has stepped back from sustained defence spending growth of 3 percent in real terms for its inaugural Defence budget but says it is committed to restoring that growth target from FY2009-2010 out to 2017-2018.

Defence allocations for FY2008-2009 have seen just 0.8 percent real growth, with total funding forecast at A\$22.6 billion or 1.8 percent of gross domestic product.

The reduction is a result of underspending by Defence as well as delays to capital acquisition on the back of last year's Federal election and the current White Paper review process.

The budget defers approved capital equipment outlays worth A\$1.065 billion planned for FY2008-2009 out over a ten year period with firm re-phasing dependent on the current the White Paper development process.

Delays in existing approved capital equipment acquisition efforts have also seen decisions to re-programme at A\$500 million from outlays for FY2009-2010 to FY2010-2011 and FY2011-2012.

The budget reschedules new start Defence Capability Plan measures worth A\$45 million from the FY2008-2009 to FY2013-2104.

The approved funding for FY2008-2009 is a net decrease of A\$966 million – or 4.1 percent – on the departments forecasts up until February this year. However it also represents a 7.1 percent increase over the forecast outcome of A\$21.179 billion for the current financial year.

Total Defence appropriations by Government are forecast at A\$19.392 billion, with the department also receiving an equity injection worth A\$2.365 billion. Own source revenue from internal savings is forecast at A\$811.89 million during the financial year.

Total funding allocations to the Defence Materiel Organisation are forecast at A\$9.323 billion, with \$4.781 billion to be spent outlayed in new capital acquisitions. Sustainment expenditure is forecast at A\$4.764 billion.

The budget formalises establishment of a new internal savings regime aimed at achieving savings worth A\$10 billion over the coming decade. Budget papers advise that “an initial



Two up: Defence spending has declined to just 0.8 percent real growth in the coming financial year, but with government promising to restore 3 per cent real growth from FY2009-2010.

exercise has identified savings and efficiencies in a range of non-operational areas across Defence” with this making available A\$477.6 million in the coming financial year.

The largest single source of that savings effort during FY2008-2009 will be an A\$86.2 million reprogramming of sustainment funding, and an A\$50 million reprogramming of facilities works.

Savings of A\$28.6 million in foreign military sales acquisitions are flagged as a result of the recently signed defence trade cooperation treaty with the United States.

Operations funding for the new financial year is forecast to reach A\$1.229 billion.

Defence minister Joel Fitzgibbon says the government plans to “invest a record amount over the next ten years in the Australian Defence Force to ensure it is ready to meet the challenges of an uncertain world”.

He says the budget commitment “to increase underlying Defence funding by an average of

three per cent in real terms every year to 2017-18, two years more than previously announced” is a major boost for Defence.

“The increase will provide an additional \$2.8 billion to Defence over two years in 2016-17 and 2017-18 and will ensure that our soldiers have the necessary equipment, training and the support they require to undertake their difficult work”.

Shadow minister for defence, Senator Nick Minchin, describes the budget as breaking “a key election promise and is silent on many of the key issues facing the Defence portfolio”.

He says the budget fails to make provisions “for a fourth air warfare destroyer, despite the contractual option for a fourth ship expiring later in 2008”. The budget also fails to deal with future air combat capability plans despite Fitzgibbon receiving the final report of the fast track review at the end of April: “There is no insight into the Government’s response.”

However Minchin also says the “lack of any major change in direction for Defence is to be welcomed and reflects the fact that the Coalition left our defence forces well resourced and well equipped. Our 2006 and 2007 recruitment and retention initiatives in particular are proving to be effective.

“If you ignore all of Mr Fitzgibbon’s political point scoring, the Defence Budget largely reflects a welcome bipartisan continuity of approach.”

Phillip de Courcey, Chief Executive Officer of the South Australian-headquartered Defence Teaming Centre, says the government commitment to 3 percent real growth in defence expenditure between FY2009-2010 and FY2017-18 “is good news for defence industry and provides a level of certainty in planning that will help Australian industry plan and execute projects efficiently and well in the future.”

“We would expect that the budget will build on the recommendations for industry engagement and efficient procurement practises that will come from the Defence White Paper, the Mortimer review as well as supporting reviews of innovation and skills.

“The DTC welcomes the budget as setting a benchmark for planning, skilling and development of innovation in the Defence Industry.” **APDR**



# Australian Aerospace Ad (p7)



PETER LA FRANCHI SYDNEY

## New wave of classified ADF projects?

The newly released Federal budget contains funding provisions that may signal the launch of a major new wave of classified Australian Defence Force projects intended to update its electronic intelligence and information operations capabilities.

The funding provisions also appear to contain provisions for a number of new Special Forces Command acquisition efforts, including new 'special access' capabilities intended for use in counter-terrorism operations.

The bow wave is signposted by two separate sets of budget paper figures.

The first is the flagging of initial funding allocations in the coming financial year worth up to A\$92.8 million in Defence capability plan outlays which are to be administered by "other defence groups". That funding line rises to A\$170.5 million in FY2009-2010, A\$201 million in FY2010-2011, and A\$363.6 million in FY2011-2012. Total outlays over the period under the funding line equal A\$827 million.

The funding line is identified separately to Defence's proposed information technology spend during the four year period as directly administered by its Chief Information Office directorate, with that area having in the past been used to conceal some funding allocations for development of information operations capabilities.

The second set of figures are the supplier accounts for Defence's intelligence capability group, with this line item forecast at A\$353.4 million in the FY2008-2009 financial year, but with a pronounced rise to A\$424.8 million in FY2009-2010. The same funding line is then forecast to settle at A\$413.4 million in FY2010-2011 and A\$417.5 million in FY2011-2012.

Coupled with the unallocated 'other defence groups' funding line, the projected A\$71.4 million 'hump' in the intelligence capability group figures reflects an identifiable trendline in Australian defence budgets that mirrors the launch of two separate waves of major classified projects activity over the past 18 years.

The first wave, launched in 1991-1992, was

dominated by the development of electronic intelligence capabilities, the centrepiece of which was the still highly classified 'Project Peacemate' conversion of a single Royal Australian Air Force Lockheed Martin P-3C Orion to act as a dedicated electronic intelligence gathering aircraft through linkages with the US navy Aries II modification programme. Planning for the replacement of that aircraft has been the subject of multiple studies by RAAF, the Defence Signals Directorate and the Defence Intelligence Organisation over the past three years.

That same first identifiable spending wave also included the super classified Galant, Neptune and Haybox projects.

The second wave of programmes was initiated soon after the Howard Government came to power in 1996 with its initial focus on counter-terrorism activities in the lead up to the Sydney Olympics in 2000, but was then redirected into electronic intelligence and information operations capabilities post the September 2001 terrorist strikes in the United States. **APDR**

KYM BERGMANN CANBERRA

## ASC privatisation risks flagged

The parliamentary secretary for defence procurement Greg Combet has confirmed that lobbying on options for the sale of ASC Pty Ltd has already seen an inflow of submissions from the private sector on the issue since the change of federal government in November, with stepped up interest anticipated.

Combet has carriage of the privatisation process at the planning and implementation levels, but with ultimate decisions on the divestment to be made at the Cabinet level based on the input of the ministers for Defence and Finance.

Combet has told APDR that ASC remains central not just to the future of the Sea 4000 air warfare destroyer build programme, but also to the ongoing support of the navy's Collins class submarines and the Sea 1000 future submarine project.

This month's Federal budget papers confirm that the sale process remains in the scoping stage, but with Defence now acknowledging divestment may have ramifications for its ongoing shipbuilding efforts.

Defence budget papers warn that "the sale of ASC poses challenges to the successful outcome of the air warfare destroyer project. The related external demands for information and the conduct of due diligence have the potential to disrupt the management of the air warfare destroyer alliance, while the culture of the new owner and their commitment to the air warfare destroyer alliance will significantly impact on project progress.

"This risk is assessed as medium and is being mitigated initially through close collaboration and cooperation between the Department of Finance and Deregulation and the Defence Materiel Organisation [DMO]."

The Defence budget papers warn that "within the alliance, both the DMO and Raytheon will need to work closely with the new ASC owner to minimise any project disruption".

Budget papers for the Department of Finance and Deregulation acknowledge progressing the sale is a key agenda item for the coming financial year, but "within the timing and budget set by the Commonwealth government." **APDR**



A big space in waiting: Federal member for Fremantle Melissa Parke and parliamentary secretary for defence Greg Combet look over ASC Pty Ltd's new Henderson facility.



PETER LA FRANCHI SYDNEY

# Fast track review of Defence procurement

**T**he Federal government has launched a fast track review of Defence's procurement and sustainment mechanisms with the objective of providing what is being referred to as a "programme of ongoing reforms".

The review, announced 7 May by parliamentary secretary for defence procurement Greg Combet, will also look at options to "optimise Australian Defence Industry involvement while maintaining a high level of marketplace competition and value for money for the Australian taxpayer."

Combet says the review is a direct response to "high-profile problem projects in the area of Defence procurement and the Government is committed to avoiding a repeat of past problems through an ongoing reform program".

He says the review will "consider further potential reforms to the acquisition and through-life support of defence equipment. It will also make recommendations on initiatives to further enhance delivery of capability to the Australian Defence Force in the most efficient and cost-effective manner.

The review is being headed by David Mortimer, chairman of Leighton Holdings, Australia Post and the Defence Procurement Advisory Board. He is being assisted by MAJGEN Tony Fraser, head of helicopter systems division in the DMO. It is expected to report by early August.

Combet says the review will include examination of "how DMO can continue to develop its commercial orientation and become more business-like in its operations."

The parliamentary secretary told a Canberra defence conference 15 May that "one area that I am keen to see developed is a series of reforms that will move DMO further towards a more businesslike and commercial operation. I believe this is essential if we are to achieve a more effective and efficient defence procurement process."

The review includes examination of DMO's future relationship with the Department of Defence. Combet told ABC radio 7 May that "whether there

are grounds for greater autonomy and accountability of the DMO, I don't wish to pre-empt, of course I can not, his investigation and findings in that regard but it is one of the things that will be looked at."

Potential policy reforms flagged by the review terms of reference include the "potential for greater and more effective use of private sector project management, financial and legal expertise; [and] the potential for utilisation of private sector involvement, such as through public-private partnerships, within defence procurement and sustainment."

Combet said the government accepted that "the last reform process initiated by the 2003 Defence Procurement Review - the Kinnaird Reforms - has delivered major benefits. For example, I think it has done a lot to help control cost blow outs in some projects, but not all, and has improved the operation of the DMO. However, I think that there are further areas where more work needs to be done."

These include options for better achievement of project schedules: "It appears to me that the large majority of the reported cost blow outs of the past have actually occurred prior to 2nd pass approval and the DMO responsibility. It might therefore be advantageous for the Mortimer Review to consider how the procurement process is handled and reported prior to 2nd pass approval."

Associated review elements will examine "mechanisms by which changes to the scope and specifications of procurement projects can be made more accountable following second pass approval; the potential advantages and disadvantages of greater utilisation of military off the shelf and commercial off the shelf purchases; methods to improve the planning, management and oversight of developmental projects involving a high level of technical risk; and ways to provide more effective government oversight of the Defence procurement process including the future of the Defence Procurement Advisory Board."

The launch of the review comes in parallel to the re-appointment of Dr Stephen Gumley as chief executive officer of the DMO. **APDR**

PETER LA FRANCHI SYDNEY

# New FMS applications

**A**ustralia is seeking a follow on buy of Aegis combat system components, including cooperative engagement capability systems, worth US\$450 million under a proposed foreign military sales purchase notified to the US congress 5 May.

The proposed acquisition comprises three AN/SPQ-9B horizon search radars; three cooperative engagement capability systems; three naval fire control systems; three multi-functional information distribution systems; the AN/SLQ-25A Nixie torpedo countermeasure suite; MK160 gun computer system; AIMS MK XII Identification Friend or Foe (IFF); communication and information distribution systems; system spares; training, and related logistics support.

The prime subcontractors will be Lockheed Martin

Maritime Systems and Sensors; Raytheon Systems Company; and Northrop Grumman Corporation.

Australia has also lodged an FMS sales case for the purchase of Raytheon XM982 Block Ia-1 Excalibur 155mm guided projectiles and modular artillery charge systems. The deal is projected at being worth US\$58 million.

The application, notified to the US Congress 21 April, proposed acquisition of 250 XM982 Block Ia-1 Excalibur unitary projectiles with base bleed units; 2,400 modular artillery charge systems; 43 portable Excalibur fire control systems; 43 IIT AN/PRC-119 single channel ground and airborne radio systems; training ammunition; containers; support equipment, spare and repair parts; technical publications and training equipment and services. **APDR**



Benchmark: FMS is central to Australia's Sea 4000 acquisition strategy.

PETER LA FRANCHI SYDNEY

## Super Hornet to carry JASSM

The Royal Australian Air Force's new Boeing F/A-18F strike fighters will be equipped with the Lockheed Martin AGM-158 joint air to surface standoff missile (JASSM) as a standard fit according to new details on the project released as part of the 2008-2009 Defence budget.

Budget documents released 13 May advise air force will "continue flight testing to authorise the Australian F/A-18F to carry JASSM whilst the US navy continues to develop the F/A-18F operational flight program software. Once cleared, the F/A-18F will carry the JASSM, and use the US navy developed operational flight programme in the Australian test and evaluation programme.

"This will culminate in live missile firings, conducted in both the US and Australia, to validate aircraft integration and missile capabilities".

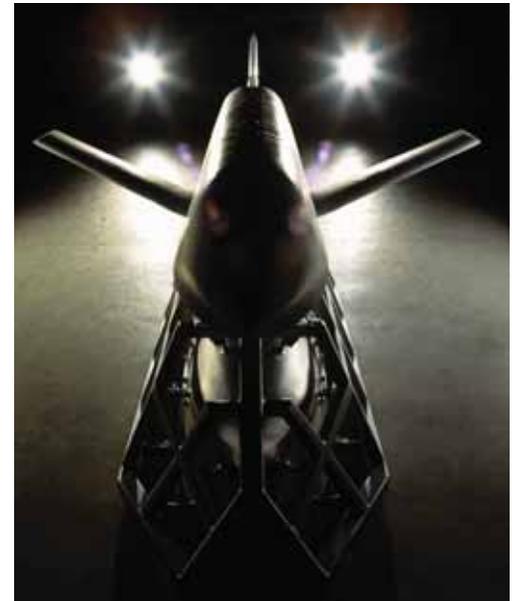
The existing integration effort to fit the missile to RAAF's Boeing F/A-18A/B aircraft is expected to "deliver an initial operational capability in 2009

to engage fixed targets".

Australia signed an FMS purchase order for JASSM in July 2006 to meet air force's project Air 5418 follow on stand off weapon requirement. Development of a moving target engagement capability for Australia's JASSM stocks remains "an option under the contract. Proceeding with this option depends on US air force development of a maritime interdiction capability that is suitable for the Australian application.

"Defence will continue to collaborate with the US air force on the definition of its maritime interdiction requirements, whilst independently continuing to fund Lockheed Martin to conduct simulation studies into the missile performance in a maritime environment".

Air 5418 has an approved funding ceiling of A\$373 million, with total outlays to the end of the current financial year expected to reach A\$99 million. Total planned expenditure during FY2008-2009 is A\$50 million.



LOCKHEED MARTIN

JASSM: The Super Hornet's new sting.

Lockheed announced 5 May that the US government has recertified JASSM procurement following a series of successful reliability tests that included strikes against hardened targets, underground bunkers and air defence systems.

The recertification allows JASSM Lot 7 production to proceed, as well as recommencement of work on the JASSM extended range variant, which has also been offered to Australia to meet future phases of Air 5418. **APDR**

# Airbus Ad



PETER LA FRANCHI

SYDNEY

HANK SCHOUTEN

WELLINGTON

## NZ appoints reviewer to probe MRV failings

**J**ohn Coles, one of Britain's most experienced and respected naval architects, has been appointed to lead a review into the safety and functionality of the Royal New Zealand Navy's new Multi Role Vessel (MRV) HMNZS Canterbury.

The independent review, due to conclude by the end of July, has been prompted by two Courts of Inquiry (CoIs) investigating separate incidents involving Canterbury since its delivery in May 2007. The first CoI, which reported in late 2007, addressed the loss of a rigid hull inflatable boat (RHIB) as a result of water ingress into a boat alcove on 10 July 2007; a second CoI, released on 17 April, examined the circumstances which led to the death of a sailor following the capsize of a RHIB alongside Canterbury on 5 October, 2007.

The review will examine the acquisition and introduction into service of Canterbury in order to identify concerns relevant to the operation of the ship, its design and/or performance and assess whether it is capable of performing the functions for which it was acquired. It will also make recommendations as to any remedial

action that may be needed to address any shortcomings.

However, the review will specifically exclude examination of government defence policy or the decision to procure the MRV in the first instance. The terms of reference also exclude examination of the tender process by which the contract with Tenix was entered into.

A former head of the Royal Corps of Naval Constructors, Coles had previously served as chief executive of the UK's Warship Support Agency and project team leader of the Future Carrier programme. He retired from the UK Ministry of Defence in 2007.

Tenix Defence is prime contractor for the seven-ship Project Protector programme. Canterbury, an 8,870-ton vessel based on the commercial ferry Ben My Chree, was constructed in the Netherlands by Merwede Shipyard under subcontract to Tenix.

New Zealand defence secretary John McKinnon has confirmed that "environmental operating limitations" have been imposed on the vessel to limit the likelihood of damage. A patrol to

the deep southern ocean, scheduled for the summer, was put off and the navy has stopped launching and retrieving RHIBs while the ship is moving.

A key design problem is the placement of the RHIBs in alcoves just three metres above the waterline, where they are exposed to wave damage in even moderate seas. There are plans to place sliding doors over the alcoves, but questions have been raised as to why this issue, identified in pre-construction model tests, was not dealt with when the ship was being built.

The October incident CoI report found it was highly unlikely the ship's boats met minimum safety requirement and best practice standards. It also found configuration management of the RHIB arrangement was poor.

Other remedial work required on the ship has included putting in higher specification gearbox bearings to protect the propulsion system from stress caused by propeller emergence in high seas. Investigations are also underway on options to add more ballast to slow the ship's high righting movement. **APDR**

# Airbus Ad

PETER LA FRANCHI SYDNEY

# Activists strike NZ SIGINT facility

An inflatable radome covering one of two main satellite communications intercept antennae at New Zealand's Waihopai signals intelligence station has been destroyed during a raid by activists from the Christian 'ANZAC Ploughshares' organisation.

The radome was sliced open during the raid using farming sickles. Three activists from ANZAC Ploughshares entered the base early on the morning of 30 April after holding a vigil outside its main gates over the preceding two days.

New Zealand police have arrested and charged three men in relation to the incident: Sam Land, a farmer from the north island of New Zealand; Peter Murnane, an Australian born Catholic priest; and Adrian Leason, a farmer and part time primary school teacher from the south island of New Zealand.

All three men were held in custody until 5 May before being granted bail. Court hearings will resume on 9 June.

The activists link themselves to the Catholic church and had spent several months planning the raid.

The Waihopai base is located in farmland near the city of Blenheim on New Zealand's south island. The facility has previously been linked by European Commission investigators

with the US-controlled ECHELON global signals intercept system.

New Zealand prime minister Helen Clarke has told national media that the attack represents "a senseless act of criminal vandalism and it will be dealt with through the justice system." New Zealand's Government Communications Security Bureau, which runs the base, says the repair bill may be as high as NZ\$1 million.

A statement issued by the activists on 30 April acknowledges entry into the base: "Our group, including a Dominican Priest, temporarily closed the

base by padlocking the gates and proceeded to deflate one of the large domes covering two satellite dishes. At 6am we cut through three security fences surrounding the domes - these are armed with razor wire, infrared motion sensors and a high voltage electrified fence.

"Once inside we used sickles to cut one of the two 30-metre white domes, built a shrine and knelt in prayer to remember the people killed by United States military activity. We have financed our activities through personal savings, additional part-time employment and a small interest-free loan from one of our supporters.

"We are responding to the Bush administration's admission that intelligence gathering is the most important tool in the so-called War on Terror." **APDR**

Waihopai's exposed 30m dish.



HANK SCHOUTEN WELLINGTON

# New light utility helicopters for RNZAF

New Zealand has signed a contract for the purchase of five Agusta-Westland A109 UH training and light utility helicopters, the final element in a NZ\$900 million programme to replace all of the air force's Vietnam War vintage rotary wing fleet.

The deal includes five A109s, a flight simulator, an extensive package of spares, on board equipment and tools with a total cost of NZ\$139 million, said defence minister Phil Goff.

The Italian-built aircraft will be delivered by 2011 and stationed at the Royal New Zealand Air Force's Ohakea base.

Air force chief AVM Graham Lintott said they would be used for training pilots and aircrew who will later fly the Nordic Helicopter Industries NH90 medium utility helicopters now under construction in France and the New Zealand navy's Kaman SH2G Seasprite naval helicopters.

They will also be used for lighter helicopter missions. As such they will do substantially more than replace the air force's 40-year-old twin-seat Sioux helicopters which were could only be used for basic pilot training.

The deal was foreshadowed last year after the Ministry of Defence completed an evaluation of tenders where the A109 was selected ahead of the similar-sized Eurocopter EC635. It was favoured because the A109 is fitted with retractable wheels rather than skids, which makes it more suitable for operating off ships and training crews to operate at sea.

The contract price is higher than the previously published estimate of NZ\$110 million.

Goff justified this saying that with aircraft expected to be in service for over three decades, it was important to go for capability rather than simply looking at the bottom-line figure.

It would have been cheaper if they had opted

for the EC635 or cheaper still if they merely sought a replacement for the Sioux.

However, the A109 would have a much wider role. As well as training, they would be used as a light utility helicopter in support of the eight new NH90s, which are also scheduled to come into service in 2011.

Meanwhile the RNZN's Seasprite helicopters have been fitted with new Belgian FN MAG 58M machine guns.

These replace old M60s which the navy says were less than reliable. It had catch boxes, which could only hold 150 spent cartridges, and some cartridges bounced out and back into the gun's working parts, causing them to jam.

The new guns have laser rather than open sights, a higher rate of fire and door mounts have been modified to prevent accidentally shooting off the nose of missiles on the Seasprite's weapons pylon. **APDR**



# Northrop Grumman Ad (p13)







# Lockheed Martin Ad (p15)



capability structure for 15-20 years from now. Once a course of action is decided it is important the NSC not become bogged down in the details of implementation but to pass that responsibility to a lead department or agency.

The NSC planning process has also suffered from Ministers tending to focus too much on immediate issues Babbage says. He says the body also periodically focuses on tactical matters that are the current focus of national and international attention, "even when they are more appropriately the province of field commanders and operational managers".

The paper is directly based on two closed workshops with senior defence and government officials held in October and December last year.

So-called 'Strategic NSC's' have proved to be only mixed successes, the paper says. "Despite the encouraging efforts of at least some senior officials, most ministers have had trouble focussing on more distant horizons".

It says senior defence and security planners have sometimes had to make do with poorly focussed policy papers, forcing them to work overtime to sharpen documentation themselves so it more closely meets the needs of the ministers. "The short-term focus of the NSC probably also encouraged some senior officials to neglect the development of these more strategic staff skills."

With almost all of the senior NSC officials stepping down in the next five years, the Kokoda paper says steps urgently need to be taken to strengthen the strategic analytical and policy advisory capacities of the rising generations of national security staff.

The paper also looked closely at the national security planning and coordinating systems of the United States, the United Kingdom, Sweden and Singapore, highlighting their relevant strengths for Australia.

"At the moment there is virtually no consideration by NSC of the total national security capacity or of the total force structure, they are looking at individual sub-elements," says Babbage.

Alternative models nominated by the paper include the 'perspective planning system' used by Sweden, with this based on a total defence planning approach covering military, economic, civil and psychological defence capabilities, as well as a far-sighted planning process.

It says the Singaporean model, which supports a strong tradition of training and preparing

personnel for work within the national security community, has overcome organisational stovepipes and enabled whole-of-nation security planning.

The UK uses an annual "horizons scan" to get its NSC equivalent to focus more on the longer term issues.

### ROLE OF THE NSA

The Kokoda paper backs the proposed creation of a new national security advisor [NSA] posting. Babbage says "there needs to be strengthening in the centre, in my view, and the NSA has the potential to play a very, very important role in doing that..."

"The preferred model is that the NSA would best be located within the Department of Prime Minister and Cabinet (PM&C) and be of secretary rank, just modestly below the secretary of the department in terms of seniority.

"He is the guy that the NSA potentially will report to but the NSA will have a direct line to the

committee to replace the current Foreign Intelligence Committee so that all national intelligence can be coordinated by one body. It suggests the new committee be named the National Intelligence Committee, which would be chaired by either the NSA or the secretary of the Department of Prime Minister and Cabinet.

Were a new minister for Homeland Security to be appointed, that person should be made an NSC member says the paper. Occasionally, it might also be useful to invite external experts to participate in NSC and SCONS discussions when they have strong expertise on matters under consideration.

### OVERCOMING SECURITY STOVEPIPES

"While the members of the NSC have generally been aware of the need to shift some government agencies out of their 'comfort zones' and into national security operations, the NSC's success in fostering change has been limited so far," the paper says.

"Some departments have a deeply ingrained culture of separateness that will need to be modified," including parts of the Department of Foreign Affairs and Trade, Attorney-Generals, health, education, AusAID and the Australian Federal Police, it says.

"No matter how imaginatively they might be employed, elements of the ADF, AFP, and AusAID project staff will not, on their own, be capable of achieving much

more than holding actions when committed to places like the Solomon Islands."

The paper says the NSC needs to explore development of new 'whole-of-nation' capacities need to be developed alongside new command and management mechanisms and new modes of operations.

It says that if such reforms were undertaken, by 2015 the NSC should be able to "commit at short notice complex multi-disciplinary task forces, the likes of which have not been seen in Australia for many decades."

Babbage argues that "mostly what needs to be done is not particularly difficult but the really good news is that we don't have to wait until 2015 to make the changes. One of the biggest surprises that came out of this report was that it could actually all be implemented in 12 months...so I think we will see evolution of the NSC in the next 12 months." **APDR**

***"One of the biggest surprises that came out of this report was that it could actually all be implemented in 12 months" - Babbage***

prime minister. He would be the primary advisor to the prime minister on national security issues minus intelligence. The director-general of the Office of National Assessments, through the Office of National Assessments, should be retained in our view with a direct line to the prime minister. This is an important matter of principle - to maintain the separation of intelligence SCONS and policy SCONS."

Babbage says the NSA should enforce the prime minister's strategic direction - not only by implementing decisions and actively consulting with other departments and agencies - but actually formulating advice and researching the new emerging challenges, such as information warfare in 2020, nuclear proliferation and chemical, biological, radiological and nuclear strategies, and then suggesting what needs to be done to the NSC.

The paper argues there is a need for a new



# Techport Ad (p17)



PETER LA FRANCHI SYDNEY

# Delayed projects expected to advance afresh in FY2008-2009

The 13 May Defence budget confirms at least four new capability development projects have been raised in recent months with planning now underway for first pass approvals from the federal government during the coming financial year.

The new starts are dominated by the creation of a new sea 1000 project to oversee planning of new submarines for the Royal Australian Navy. The initial project phase, designated sea 1000 phase 1A, will be the vehicle for implementation of concept studies of future submarine options ordered by the Federal government at the end of 2007.

A new joint project, JP 2110, has been raised to develop new chemical, biological, radiological and nuclear [CBRN] defence capabilities. Defence's last major CBRN capability modernisation effort was conducted as part of project Bluefin ahead of the Sydney Olympic games.

Navy's longstanding sea 1397 programme handling acquisition of the Nulka hovering decoy system has received approvals for a new project phase, designated sea 1397 phase 5, to support self protection requirements for the sea 4000 air warfare destroyer and JP 2048 amphibious ship programmes.

Army's land 121 Overlander field vehicles requirement has had a fourth phase confirmed, with this reflecting changing fleet structure arrangements emerging from acquisition decisions for land 121 phase 3.

Total projected funding for new Defence Capability Plan project approvals during the coming financial year is forecast by budget papers to cost \$405.7 million during FY2008-2009, and reach \$6.8 billion by FY2011-2012. The new project approvals are expected to take the total value of new capability projects approved since the release of the 2000 Defence White Paper to \$48.3 billion.

Budget papers confirm that delayed first pass consideration of the air force's project air 5428 phase 1 pilot training system, air 8000 phase 1 refurbishment or replacement of its Lockheed Martin C-130H Hercules aircraft and air 9000 phase 5B Boeing CH-47D Chinook helicopter

midlife upgrade are expected to proceed in the coming financial year.

Similar delayed first pass approvals for the navy's JP 2048 phase 3 amphibious watercraft and sea 1439 phase 6 replacement sonar for the Collins class submarines are also rescheduled for the coming financial year.

Capability projects scheduled by the 2006-2016 Defence Capability Plan for first pass approvals during 2008-2009 and confirmed by budget papers as progressing to that milestone include the JP90 phase 1 Australian Defence Force identification friend foe and JP2069 phase 2 high grade cryptographic equipment programmes, and navy's sea 1778 phase 1 deployable mine counter measures – organic mine countermeasures programmes.

New capability projects established after the release of the 2006-2016 Defence Capability

Plan and now being prepared for second pass approvals during FY2008-2009 include the JP 154 phase 1 joint improvised explosive device programme; the air 5440 phase 1 Lockheed Martin C-130J block upgrade programme; the new air 5416 phase 2A programme to acquire additional radar warning receiver systems for ADF helicopters; and air 9000 Sikorsky S-70B-2 Seahawk capability assurance programme [SCAP] phase 1. The SCAP 1 programme replaces the former air 9000 phase 3 Seahawk upgrade project.

The budget papers also confirm that the existing air 5416 phase 4B requirement for improved electronic warfare systems for air force's C-130Js has now been broken into two distinct capability sub phases. Air 5416 phase 4B.1 will be responsible for acquisition of a new radar warning receiver for the aircraft while

*Collins class: Replacement sonar requirement is back on the agenda.*



DEFENCE

# Top 30 projects by 2008-09 forecast expenditure

Source: Defence portfolio budget statements FY2008-2009

Project number	Project name	Approved Project Expenditure(A\$m)	Estimated Cumulative Expenditure to 30 June 2008(A\$m)	Budget Estimate 2008-09 (A\$m)
JP 129 – Phase 2	Airborne Surveillance for Land Operations	126	7	25
JP 2008 – Phase 4	Next Generation Satellite Program	790	17	79
JP 2043 – Phase 3A	High Frequency Modernisation (HFMOD)	637	364	28
JP 2048 – Phase 4A/4B	Amphibious Deployment and Sustainment	2,949	240	132
JP 2077 – Phase 2B.1	Improvements to the Logistics Information Systems	126	82	30
JP 2077 – Phase 2B.2	ADF Deployable Logistics Systems	90	4	27
JP 2070 – Phase 3	Lightweight Torpedo Replacement	287	91	52
JP 2085 – Phase 1B	Explosive Ordnance Reserve Stocks	202	140	33
JP 2086 – Phase 1	Mulwala Redevelopment Project	348	56	171
AIR 87 – Phase 2	Armed Reconnaissance Helicopter	2,026	1,270	172
AIR 5077 – Phase 3	Airborne Early Warning and Control Aircraft	3,472	2,526	68
AIR 5276 – Phase 8B	AP-3C Electronic Support Measure Upgrade	117	16	30
AIR 5333	New Air Defence Command and Control Systems for Control and Reporting Units 2 & 3	263	116	27
AIR 5376 – Phase 2	F/A-18 Hornet Upgrade	1,875	1,277	125
AIR 5376 –Phase 3.2	F/A-18 Hornet Upgrade – Structural Refurbishment	874	157	100
AIR 5402	ADF Air to Air Refueling Capability	1,750	682	260
AIR 5416 – Phase 2	Electronic Warfare Self Protection for Selected ADF Aircraft – Echidna	307	178	67
AIR 5418 – Phase 1	Follow-on Stand-Off Weapon	373	99	50
AIR 5349 –Phase 1	Bridging Air Combat Capability Super Hornet	3,156	215	564
AIR 6000 – Phase 1B	NACC: Detailed Analysis and Acquisition Planning	95	33	40
AIR 7000 – Phase 2	C-17 Globemaster III	134	2	51
AIR 8000 – Phase 3	Multi Role Helicopter	1,838	1,298	23
AIR 9000 – Phase 2	Upgrade of M-113 Armoured Vehicles	3,557	814	273
LAND 106	Bushmaster Infantry Mobility Vehicle	624	297	100
LAND 116 – Phase 3	Project Bushranger	893	383	82
SEA 1390 – Phase 2	Guided Missile Frigate Upgrade Implementation	1,504	1,165	118
SEA 1390 – Phase 4B	Standard Missile Replacement (SM-1)	575	168	79
SEA 1429 – Phase 2	New Heavyweight Torpedo	432	213	26
SEA 1439 – Phase 3	Collins class Submarine Reliability & Sustainability	396	253	42
SEA 4000 –Phase 3	Air Warfare Destroyer – Build	7,197	320	600
<b>TOTAL ESTIMATE</b>		<b>37,013</b>	<b>12,483</b>	<b>3,474</b>
Other Approved Project Estimate		36,606	32,321	825
<b>Total Program Estimate for Major Capital Projects</b>		<b>73,619</b>	<b>44,804</b>	<b>4,299</b>



*C130H: First pass approvals for a replacement or refurbishment are scheduled for FY2008-2009.*

phase 4b.2 will acquire a large aircraft infra-red countermeasures suite for the type. Phase 4B.2 is baselined on the Northrop Grumman AAQ-24 NEMESIS system.

Existing projects scheduled for second pass approvals during the new financial year and reconfirmed as progressing to that milestone by budget papers include the air 6000 phase 2A and 2B new aerospace combat capability programme; the land 17 phase 1 army artillery replacement programme; the JP 2068 phase 2B.1 computer network defence programme; and the sea 1439 phase 3.1 Collins class obsolescence management programme.

The budget papers confirm that delayed second pass approvals for the army's land 40 phase 2 direct fire support weapon, the land 125 phase 3 soldier enhancement version 2, the land 75 phase 3.4 mounted battlefield command support system and the JP2089 phase 2 tactical information exchange domain projects have all been rescheduled to undergo that milestone in the coming financial year.

## BOEING CHALLENGES

Air force's delayed project air 5077 Wedgetail airborne early warning and control project is assessed by the budget papers as still subject to high levels of schedule risk. The papers confirm that Boeing presented Defence with a newly revised delivery schedule early this year, replacing its two year 'get well' plan provided in March 2007.

The latest rescheduling is the result of fresh delays in the "developmental test and evaluation programme. Boeing is still planning to deliver

the first aircraft in March 2009, a total delay of 28 months against the contract baseline. However, Defence is still working the underlying results of the revised Boeing schedule and assesses there is still residual technical and schedule risk to delivering in March 2009."

Budget documents advise that continuing "major risks" facing the project comprise "radar and electronic support measures technical maturity, mission computing development, integrated system performance and the complexity and concurrency of the test and acceptance program.

"Technical risk continues to be assessed during developmental test and evaluation, which will be used to assess integrated system maturity, stability and performance prior to entry into formal test. Close coordination of the test program and resources is being undertaken with Boeing, including the key processes leading to acceptance and introduction into service."

Boeing Australia Ltd completed modification of the third aircraft at RAAF Amberley in January 2008 with that aircraft now in the US undergoing flight testing. Delivery of remaining aircraft from the Australian modification programme into the flight test effort are being delayed until around mid-2009. However, delivery of the operational flight trainer system by BAE Systems Australia is expected to occur this month with its final acceptance planned for August.

Budget papers avoid providing an in-service target date for Air force's massively delayed air 5333 'Vigilaire' air defence command and control system project, but confirm a critical design review expected for the current financial year and commencement of integration and

test phases have slid into FY2008-2009.

"Both of these activities were expected to be completed within 2007-08; however, delays resulted from an underestimation of required effort by the contractor, particularly in the tactical datalinks, human machine interface, and integrated logistics support areas. Mitigation action is underway to address delivery delays and the contractor is applying greater resources to complete the work."

Boeing Australia is the prime contractor for the project. Budget papers advise that "due to the overall complexity of integration and the large number of unique interfaces involved, the project remains a high risk project. The highest risk on this project is the delivery of integrated tactical datalinks."

Completion of the Boeing Australia managed JP2043 phase 3A high frequency communications modernisation project is likewise experiencing new delays. Budget papers advise that DMO is currently negotiating a new schedule with that company based on an incremental delivery model. The project phase is planned to "provide increased levels of automation, improved capability, enhanced security and survivability, reduced reliance on staff, and will incorporate the new equipment into selected mobile platforms.

"Introduction of the second stage fixed network capability is planned for 2008, however, due to prime contractor delays, completion is now expected early in 2009. This delay will also impact upgrades to mobile platforms in the scope of the project, currently planned for completion by end 2010. Platform availability may further impact completion of the mobile platform upgrades," warn the budget papers. **APDR**

KYM BERGMANN CANBERRA

# Fuel and ordnance dominate ADF sustainment spend plans

**T**he Defence Materiel Organisation is forecasting expenditure of A\$4.764 billion during FY2008-2009 on sustainment of Australian Defence Force specialist military equipment.

The projected outlays represent half its overall budget allocations, with the spend dominated by fuels and lubricants purchasing for the three services. Budget papers forecast total cost of fuels and lubricants is expected to reach A\$442 million.

The second largest line item is an A\$373 million outlay for explosives and ordnance for the three services with Defence now looking at options for increased local production.

Budget papers advise that the "ability to provide "explosive ordnance in the required quantities to navy, army and air force for raise, train and sustain activities is being impacted by the increased consumption rate of munitions in, and the allocation of resources to, the support of current operations.

"This impact is exacerbated by the requirement to procure munitions in a world market characterised by high demand. To this end increased indigenous manufacture of high consumption and critical items is being actively explored."

Little change is anticipated in the ADF's stockholdings of guided weapons, despite the new Raytheon Javelin missile being deployed as part of current operations in Afghanistan and Iraq. "Relatively minor requirements for guided weapons in support of current operations have

enabled the availability levels of the inventory to be maintained within allocated resources".

However, budget papers also note that "opportunities to improve missile availability and lower sustainment costs are being progressed in close consultation with industry partners and key suppliers".

Outlays on fuel, lubricants, explosives and ordnance together account for around 20 percent of the total proposed sustainment spend during the new financial year.

The total cost of air force platforms sustainment is forecast at A\$757 million, with this dominated by a proposed A\$135 million spend on in service support for the service's 18 Lockheed Martin AP-3C maritime patrol aircraft and single EP-3C electronic intelligence gathering aircraft. Budget papers advise the 19 aircraft "will undergo a series of block upgrades to key systems over the next

*Liquid gold: Fuel requirements dominate Defence's planned sustainment spend in FY2008-2009.*



decade to address major system obsolescence and capability upgrades. The weapon systems also face increased deeper maintenance and obsolescence costs associated with an ageing aircraft."

Budget papers warn that "some AP-3C aircraft recently reached their structural safe design life, and as a result a safety-by-inspection regime of targeted additional structural inspections will be required as aircraft reach certain flying hours".

The cost of supporting the air force's remaining 18 General Dynamics F111C aircraft is forecast at A\$120 million, almost the same as the forecast sustainment spent on the services 71 Boeing F/A-18 A/B Hornets, which is placed at A\$133 million.

Budget papers confirm that all air force F-111G model aircraft have now been retired with planning for final withdrawal of all remaining C variants from service in 2010 reiterated. Existing support contracts are currently being "recast" to align with that strategy.

The DMO anticipates new contract arrangements for sustainment of the F/A-18A/B fleet to be enacted midway through the new financial year: "A new contracting strategy is currently being developed to provide through life support for deeper maintenance and modifications to the Hornet. Interim contracting provisions will remain in place for the continuance of the Hornet upgrade and maintenance, until new support contracts are enacted at the end of 2008. Outsourcing of engine support through a performance based contract and the application

# Aero resource (p21)

of other performance-based logistics contracts to specific systems continue to be pursued.”

Sustainment outlays for the air force's 33 BAE Systems Hawk Lead-In Fighter training aircraft are projected at A\$88 million. Budget papers warn that “major challenges arising in the future will be the eradication of asbestos items in the aircraft, obsolescence of components and ageing training systems.”

Sustainment of the air force's 12 Lockheed Martin C-130J Hercules aircraft is forecast at A\$127 million, while the considerably older fleet of 12 C-130H models is around half that at A\$68 million. Budget papers advise that tender evaluation for performance based through-life-support contracts for the C-130Js is continuing with this aiming to establish a revised support arrangement from FY2009-2010. Planning is also underway for the C-130J to take on new roles as part of the Enhanced Land Force programme, “ramping up to the mature requirement by 2009-2010”.

Air force's four Boeing C-17 Globemaster aircraft are forecast to cost A\$86 million to operate for the 12 month budget period, making them proportionally the most expensive of all current RAAF transport aircraft. The budget papers advise that expansion of the roles of the aircraft during the coming financial year will include air drop and aero medical evacuation “as specialised equipment is procured, personnel trained and airworthiness accreditation obtained”. Full operational capability for the type is forecast for 2011 following the completion of in-country training facilities and associated permanent infrastructure.

The Army's Sikorsky S70A-9 Black Hawk helicopters are forecast to require sustainment outlays of A\$73 million over the budget period, with the type now facing pressures given its high rate of operational tempo. Budget documents advise that “Select upgrades will continue through 2008-2009 to address system obsolescence to ensure operational viability is maintained until the Black Hawk is replaced under project Air 9000 phase 4.

Phasing in of the Army's new Eurocopter MRH-90 helicopters is expected to result in sustainment costs during the new financial year of A\$127 million. Two aircraft have been delivered with a further seven to be accepted during the budget period. The relative high outlays are attributed to the development of new operational and deeper level maintenance capabilities by Army and prime contractor Australian Aerospace.

No data is provided on sustainment costs for the navy's Sikorsky S-70B2 Sea Hawk helicopters, nor the Army's Boeing C-47D Chinook aircraft.

Operations of the Jindalee over the Horizon HF Radar network are forecast to cost A\$76 million over

the course of the financial year. The budget papers warn that Radar 3, located north of Alice Springs, “is becoming increasingly prone to obsolescence and facilities issues” due to its age and ongoing role in research and development activities. “These issues continue to be managed as they arise in concert with a suite of upgrades to all three radars being delivered through major and minor projects”.

Sustainment of Defence's family of battlespace communications systems are expected to cost A\$70 million for the year, with this including a proposed spend of A\$37 million supporting Enhanced Land Force components, remaining subject to finalisation of Army requirements.

The budget papers confirm Defence will proceed with a single consolidated contract for maintenance of the Australian Defence Force battlespace trunk communications suite, with this to “incorporate obsolescence and other broader fleet support responsibilities.”

Total naval platform sustainment spending is forecast to reach A\$724 million. The budget papers confirm that the six Collins Class submarines remain the most expensive asset operated by the RAN in class terms. Sustainment of that type is estimated to reach A\$296 million, or nearly A\$50 million per platform. Class priorities for the new financial year include progressing “schedule activities; optimise availability of the platforms by completion of maintenance and equipment activities; and recommission the Australian Submarine Rescue Vehicle - Remora.”

Navy's eight Anzac Frigates are expected to see sustainment outlays of A\$255 million, while the four Adelaide class FFGs are projected to cost A\$112 million. The RAN plans to introduce a new integrated materiel support contract for the latter class during the new financial year, as well as introduce so-called Type C contracts for specific ship systems maintenance and support.

Sustainment of the four Huon Class Mine Hunter Coastal is expected to cost A\$61 million. Major preventative maintenance activities in the new financial year will include 12 maintenance periods and one refit for the type. Budget papers reveal that Defence implemented a new whole-of-ship performance-based in service support contract arrangement with Thales Australia in December.

Spending on Army's B Class vehicle fleet is expected to reach A\$117 million. Sustainment spending on the wider Defence commercial vehicle fleet is projected at A\$94 million, with budget papers flagging the procurement of 1,858 vehicles in the new financial year. Defence plans to simultaneously divest itself of 1,737 vehicles during the same period. Additional reporting by Peter La Franchi. **APDR**



Not cheap: RAAF's Boeing C-17 Globemaster's will cost A\$86 million to operate over the course of the coming financial year.

DEFENCE



Give your career a  
**boost...**  
With a postgraduate degree  
from UNSW@ADFA, Canberra

Articulated coursework programs from  
Grad Certificates through to Masters in:

Aerospace Engineering  
Defence Capability  
Development and Acquisition  
Defence Operations Research  
Defence Studies  
Engineering Science  
Enterprise Architecture  
Equipment and Technology  
Information Technology  
Project Management and many other areas

Programs delivered on campus and by  
distance education.

Higher Degrees by Research -  
**What's your topic?**

Interested? Find out more...

Call for more information or visit  
our website

Telephone: 02 6268 6000  
Email: sas@adfa.edu.au  
Web: www.unsw.adfa.edu.au

## Short Courses

UNSW@ADFA runs a number  
of managerial short courses suitable for  
defence personnel and defence related  
industries looking to keep in  
touch with current trends in  
systems engineering,  
project management,  
communication  
and defence.

For Short Course  
Information contact the  
Business Services Unit

Telephone: 02 6268 8135  
Email: business.office@adfa.edu.au  
Web: www.unsw.adfa.edu.au/bdo

www.unsw.adfa.edu.au

KYM BERGMANN CANBERRA



Warfighting focus: The budget is not about industry says Greg Combet.

# Contractors warned to lift performance

The parliamentary secretary for defence procurement, Greg Combet, has delivered a blunt warning that industry has to lift its game in meeting contracted project schedules. The secretary leaves no doubt at his frustration at what appears to be a culture of companies signing up to unachievable milestones: He wryly observes during an interview with APDR that some companies seem to believe that the real purpose of the defence budget is to support them.

As a parliamentary secretary, Combet wields considerable authority with a mandate not just from the defence minister but also the prime minister. One of his first challenges was to investigate the matter of the long-delayed Seasprite contract, and ultimately to recommend its cancellation. He describes that decision as being “very tough to make” because it involved writing off more than A\$1 billion of taxpayers money, but one that just had to be taken because of the never ending series of delays. Combet remains critical of the former Government for not having cancelled the project at a far earlier stage when the size of the financial loss would have been smaller.

But Seasprite is a symptom of a wider problem he notes. Speaking at a Canberra defence conference 15 May, he warned “delivering capability in an effective way means delivering capability on schedule.”

He says failure to meet schedule has been a major underlying reason for reprogramming A\$1.065 billion of the approved major capital investment program from 2008-09 and A\$1.767 billion over the forward estimates into later years as part of the 13 May Federal budget

“It is not as simple as saying that we have A\$1.767 billion of projects that have been poorly managed by the DMO. That is not the case. Nor is it correct to say that we are cutting the capability budget by this amount – this money will be there when it is needed. Nor is this the result of the White Paper providing some sort of hiatus in the work program.

“Basically the reprogramming of these funds reflects the fact the DMO will be unable to spend previously allocated funds for acquisition at the time it was originally forecast to do so. It is true to say that in some cases this is affecting the timely provision of capability to our ADF and that is why a large part of my time is spent trying to remediate projects behind schedule.”

Combet says analysis of the A\$1.066 billion of approved major capital expenditure that has been reprogrammed from 2008-2009 budget shows that:

- Industry delays, including an inability to meet contracted milestones by payment dates, has contributed approximately 53 per cent to the reprogramming;
- DMO processes – including administrative and contracting requirements have resulted in 12 per cent of the delayed expenditure;

- Issues relating to the United States Foreign Military Sales System have resulted in 28 per cent of the delays; and
- The unavailability of platforms for upgrades or work needed resulted in four per cent of the delays.

But says Combet, “cost savings have resulted in three per cent of the reprogramming which means that the money can be directed to other future capability projects – a very positive outcome.

“This suggests that the majority of the reprogramming has had to occur because of industry delays in the delivery of the project. This does not necessarily mean a delay to the in-service date.

“Industry has faced some significant problems meeting their agreed schedule.

Industry players have at times overestimated their ability to deliver the agreed schedule. I would ask industry to consider this carefully when they are tendering for projects as the Government expects contracted milestones to be met.”

The government accepts, Combet says, that “there are some significant capacity constraints within the economy that are contributing to these industry delays – notably in the area of skills and infrastructure.

Speaking with APDR, Combet said he also accepts that of the programs which are running late because of industry failures, a disproportionate number are in fact the responsibility of a single company – Boeing – and are not necessarily representative of industry across the board. He points out that those delays are not necessarily reflective of the US defence and aerospace giant’s Australian subsidiary.

He says that another high profile and seriously delayed project, the Sea 1390 FFG upgrade, is now starting to see positive developments and is expected to soon be back on track.

Industry compliance with schedule may remain a major challenge, but Combet remains keen to see a strong and sustainable industrial base in Australia. He has told APDR that despite some creeping industry uncertainty emerging out of the current underspend the acquisition budget is large and will become progressively larger over the next ten years.

There are also industry positives. Combet says that even though the project is still in its early days, Australian involvement in the Lockheed Martin F-35 Joint Strike Fighter is progressing satisfactorily, especially from the viewpoint of local industry. He says while he is aware of some views to the contrary, the fact that there are more than 20 companies already involved as part of that projects’ global supply chain, this would become a long term success story.

Similarly, he says government remains happy with progress on the Air Warfare Destroyer contract. **APDR**



# EADS Ad

## (p24)





# EADS Ad

## (p25)



PETER LA FRANCHI SYDNEY

# Operations to cost A\$1.229 billion

**F**unding for ongoing Australian Defence Force operations is forecast to reach A\$1.229 billion in the coming financial year with real outlay increases of A\$764.1 million planned to support ongoing deployments in Iraq, Afghanistan, Timor Leste and the Solomon Islands.

Total offshore operations funding has been set at A\$1.190 billion, with the remainder to support Australian coastal surveillance requirements.

Defence budget papers released 13 May advise the bulk of outlays will be met wholly through savings in existing defence funding allocations.

The total cost of operations from the start of FY1999-00 through to the end of FY2010-2011 is now forecast to reach A\$8.675 billion.

The bulk of the new offshore operations spending during the coming financial year will support continued Australian military deployments in Afghanistan, with A\$375.6 million allocated.

Previously planned funding for operations in that country had been forecast at A\$243.3 million in FY2008-2009 and A\$30.9 million in FY2009-2010.

The new budget allocations include a proposed additional spend of A\$50.2 million in FY2009-2010 and a new line item providing an initial A\$2.9 million to support operations in FY2010-2011.

Total outlays for operations in Afghanistan to the end of the 2011 financial year now total A\$702.8 million. Current Australian government troop deployment approvals run to the end of June 2009 with 1,100 personnel expected to be on station in that country by the end of the current financial year.

The existing ADF reconstruction task force in Oruzgan Province will transition over the coming year into a mentoring and reconstruction task force. The restructured organisation will include an operational mentoring and liaison team to support Afghani forces carry out more security and reconstruction tasks in the province.

The existing special operations task group will continue to provide security in the province by targeting and disrupting Taliban forces as part of NATO-led operations.

## Sources of internal savings and efficiency measures FY2008-2009 to support continued ADF operations

Measure	A\$M
Rationalisation of access control to Defence facilities	2.9
Efficiencies in the garrison support contracts	9.8
Reduction in administrative operating costs	13.4
Reduction in the use of external service providers	19.4
Efficiencies in the use of civilian workforce	0.8
Reduction in administrative travel	5.7
Efficiencies in telecommunication contracts	13.0
Reduction in the scope of IT projects	6.8
Reduction in minor capital project procurement	26.0
Efficiencies in the sustainment procurement cycle	89.3
Efficiencies in the delivery of sustainment services	22.3
Total	209.4



Another year: Operations will continue in Timor-Leste to the end of June 2009 under current funding plans.

Funding for operations in Iraq are forecast to cost A\$215.7 million over the course of the coming financial year, with this comprising a previously agreed outlay of A\$83.9 million plus an additional outlay of A\$131.8 million. Forward funding approvals for FY2009-2010 now total A\$51.7 million with budget papers allocating an additional A\$23.6 million to reconstruction and security activities.

The Australian government has approved a limited ongoing role in Iraq to the end of this calendar year, with budget papers indicating all funding provisions for that operation coming to an end at the close of FY2009-2010. Total funding for the forward two year period is now placed at A\$267.4 million.

Operations in Timor Leste are forecast to cost A\$174.3 million in the coming financial year and A\$193 million over the two year period to the end of FY2009-2010. The funding represents a rise of A\$165.9 million over previously planned outlays for operations in the troubled fledgling nation, with previously agreed outlays for continued operations by Australia totalling just A\$27.1 million for FY2008-2009.

The new Timor-Leste operations allocation comprises an A\$147.2 million spend in the coming financial year and a planned spend of A\$18.7 million in FY2009-2010. Current government deployment approvals will see the continued presence of peacekeeping forces in that country until June 2009.

Continued ADF deployment as part of the now controversial Regional assistance mission to the Solomon Islands [RAMSI] will see forecast outlays of A\$27.1 million in the coming financial year with no current provisions for operations beyond June 2009. Previously agreed Defence funding plans had allocated A\$13 million to the mission for the coming financial year, with an additional A\$14.1 million added by the new budget.

Australian coastal surveillance operations are forecast to cost A\$39.1 million over the next three financial years, with outlays of A\$12.8 million in FY2008-2009, A\$13 million in FY2009-2010 and A\$13.3 million in FY2010-2011.

Defence is required to absorb A\$1.035 billion of the proposed operational outlays during FY2008-2009. Of that A\$209.4 million is to come from efficiency measures with the remaining A\$826.5 million to come from “increases in the non-gross domestic product deflator that is used to adjust Defence funding for price increases” advise budget papers. **APDR**

PETER LA FRANCHI SYDNEY

# CTD programme funding cuts

**D**efence's capability technology demonstration [CTD] programme is to undergo a major scale down over the next twelve months as part of savings measures being implemented as part of the 2008-2009 federal budget.

CTD programme funding will remain unchanged for the coming financial year, but then decline by A\$4.3 million in 2009-2010.

Defence budget papers show government expects to achieve savings of A\$13 million a year between 2010 and 2018 from the programme, or a total of A\$108.3 million over the entire period.

Minister for defence science Warren Snowden says that total CTD funds over the next three years will total A\$61 million. This will be managed "to ensure the CTD programme achieves better outcomes for Defence."

The CTD programme is administered by the Defence Science and Technology Organisation [DSTO].

DSTO is also taking a once off A\$2 million reduction in direct scientific research allocations, with that saving to be implemented in the 2008-2009 financial year.

The budget cuts come in parallel to the launch of a comprehensive internal review of the future role of DSTO as part of the development process for the new Defence White Paper. Budget papers confirm that the White Paper companion reviews ordered by

*CTD casualty: After being dumped by Defence, the Jandu CTD demonstrator has a new life as a UAV for the Malaysian headquartered Sapura group.*



PETER LA FRANCHI

the federal government include examination of all science and technology activities.

The budget papers also foreshadow a high level overhaul of linkages between defence industry and the DSTO as a key element of its revised Defence wide business reform agenda for the coming financial year. "In line with a government election commitment DSTO is developing additional measures to strengthen its links with industry and academia" budget papers advise.

Total DSTO funding for FY2008-2009 has been set at A\$351.9 million, with this projected to rise to A\$390.3 million in FY2009-2010, A\$399.4 million in FY2010-2011, and A\$406.8 million in FY2011-2012. The main driver behind those rises is an anticipated A\$63 million increase in personnel costs over the four year forward period. Employee costs are forecast at A\$252.4 million in the current financial year, rising to A\$315.9 million FY2011-2012.

DSTO supplier costs are forecast at A\$106 million in the coming financial year, rising to A\$116.7 million in FY2009-2010, but then falling to A\$108.7 million in FY2010-2011 and A\$104.4 million in FY2011-2012.

The FY2009-2009 DSTO budget will partially be sustained by the bringing forward of A\$10.2 million from FY2010-2011 and FY2011-2012 budget allocations, with A\$5.1 million to come from each of those two fiscal periods.

Total approved new major capital investment programme outlays to be administered by DSTO between FY2008-2009 and FY2011-12 are forecast at A\$60 million over the four year period. Outlays in FY2008-2009 will total A\$27.6 million, but will fall to A\$19.6 million in FY2009-2010, A\$9.3 million in FY2010-2011 and A\$3.5 million in FY2011-2012.

The next round of proposals for the CTD programme closes 18 July this year. DSTO says that candidate areas of interest include "sensors/weapons applicable to urban operations; non-lethal weapons; networking of sensors, information and decision support systems; protection and survivability of military platforms; collision avoidance technologies for smaller unmanned air vehicles; innovative weapons; robotics in the land environment; automated asset tracking and supersonic aerial targets." **APDR**



## Defence Simulation Week

14 - 18 July 08

National Wine Centre, Adelaide

Including 3 big events:

### DEF.NET

14 July 2008

Defence Symposium on Operational Analysis, Modelling & Simulation

Registration \$220 inc GST before 27 June or \$275 inc GST after (dinner included)

### OPNET®

Defence User Forum

15 July 2008

First ever OPNET user forum in Australia

Free registration

Supported by OPNET Technologies & Tenfold Network Solutions

### Defence Simulation Training

16-18 July 2008

A beginner's course for developers, managers & users of modelling & simulation

A joint initiative of the University of Adelaide & Cranfield University

Hosted by:

Centre for Defence Communications & Information Networking

Dushy Tissainayagam

T: +61 8 8303 3238

E: dushy.tissainayagam@adelaide.edu.au

Supported by  
The Simulation Industry  
Association of Australia



REGISTER ONLINE NOW  
[www.cdcin.adelaide.edu.au/DefSimWeek](http://www.cdcin.adelaide.edu.au/DefSimWeek)

KYM BERGMANN CANBERRA

# Four year facilities spending boost

The Department of Defence plans to spend A\$4.582 billion over the next four years on major facilities projects with A\$838.3 to be spent during the FY2008-2009 financial year.

The spend plan includes new project outlays worth a total of A\$2.773 billion, the bulk of which will be spent in FY2010-2011 and FY2011-2012.

The A\$838.3 million spend in the coming financial year comprises already approved outlays of A\$624 million plus an additional A\$123.8 in new project funds plus an operating fund worth A\$90.5 million.

Existing approvals for FY 2009-2010 total A\$469.3 with budget papers flagging new approvals worth A\$593.9 million plus an increase in operating costs to A\$133.5 million.

FY2010-2011 will see A\$1.035 billion released for approved capital facilities outlays with existing estimates for that period currently totalling just A\$214.2 million. Operating costs are forecast at A\$127.2 million, taking total outlay forecasts for the financial year to A\$1.376 billion.

The proposed FY2011-2012 facilities spend is expected to fall slightly to A\$1.171 billion, with just A\$16.8 million in the existing spend plan and proposals for the addition of A\$1.020 billion flagged by budget papers. Operating costs for the year are forecast at A\$133.2 million.

The spend profile for FY2008-2009 is dominated by projects in Queensland with that state alone accounting for A\$307 million of new outlays, followed by New South Wales with a proposed new spend of A\$87.5 million and Victoria with new spending forecast at A\$80 million.

The Queensland spend is dominated by the ongoing redevelopment of RAAF base Amberley, with A\$130 million allocated to that project for FY2008-2009. This supports new trainee live-in accommodation, mess facilities, fitness facilities and new offices. The works are expected to complete in late 2010. Separate works at Amberley to develop new permanent facilities for the RAAF's Boeing C-17 Globemaster III aircraft are forecast to cost A\$80 million during the new financial year.

RAN facilities redevelopment at HMAS Cairns are forecast to cost A\$18 million, while continued works at the Army's Lavarack Barracks in Townsville are forecast at A\$69 million.

The Australian Defence Force's new Headquarters Joint Operations Command facility near Bungendore in New South Wales dominates planned outlays in that state in the new financial year. The project is expected to see spending of A\$42.1 million during FY2008-2009.

Continued development of the new Special Operations Command facilities at the Army's Holsworthy base in southwest suburban Sydney is forecast to cost A\$13 million. Ongoing development of new facilities for Army's 171 Aviation Squadron, also located at Holsworthy, will see outlays

of A\$17 million to support construction of permanent facilities including work areas and accommodation. The project is expected to complete in mid 2009.

The air force's Williamstown base near Newcastle in New South Wales will this year see construction of a new ordnance loading complex with completion expected during 2009. Total outlays during FY2008-2009 are forecast at A\$15.4 million.

In Victoria the redevelopment of the Defence Force School of Signals at Watsonia will see outlays of A\$60 million, supporting construction of new working accommodation, improved security arrangements and upgraded living-in accommodation. Works are due to commence this calendar year and complete in late 2010.

Construction of new facilities for the Army's Land Engineering Agency at Monegeetta, north of Melbourne, is expected to see expenditure

of A\$20 million during FY2008-2009. The project, which received parliamentary public works committee approvals in March this year, will allow relocation of existing Land Engineering Agency material test and evaluation facilities from Maribyrnong in the inner western suburbs of Melbourne. Construction work on the new facilities is expected to commence in late 2008 and complete in 2010.

The facilities budget provides A\$34 million to support the commencement of new redevelopment works at the air force's Pearce base, north of Perth. The project includes "new and refurbished operational, training, domestic support and aircraft maintenance facilities,

improvements and upgrading of engineering services and demolition of redundant facilities," say budget papers.

The Northern Territory, a major focus for new facilities expenditure by Defence over the past two decades, sees budget outlays for just two infrastructure projects. The largest of these, the ongoing Timber Creek—Bradshaw Field Training Area project, will see outlays of A\$7.6 million with works including roads, training force maintenance area, a base camp, and range control and caretaker facilities. Residual works on the project are scheduled for completion by late 2008.

The continuing upgrade of the navy's Darwin patrol boat facilities to support the new Armidale class is nearing completion with total outlays of just A\$1.4 million planned for the new financial year.

Spending on the HMAS Creswell redevelopment project in the Australian Capital Territory is forecast to total A\$9.7 million, covering "upgrades of engineering services and infrastructure, new and refurbished classrooms, office and living-in accommodation and specialised training facilities."

Additionally A\$14 million is being spent on improvements to RAAF Butterworth in Malaysia. **APDR**



Inside the new Special Forces Training Centre Facility in Holsworthy. Another A\$13 million will be spent on the project this year.

KYM BERGMANN CANBERRA

# Analysis: A steady passage but change is in the air

The FY2008-2009 defence budget is likely to achieve the existing Defence Capability Plan, but much depends on the new White Paper on national security now in development.

In keeping with the overall structure of this year's Federal Budget, Defence has done well, but not overly so. Because of the conflicting aims of reining in Government spending, but not being seen as soft on national security, the budget of AS\$21.7 billion is only a very slight decrease on the previous year and as a proportion of GDP has slipped from 2 percent to 1.8 percent.

While there have been multiple DCP deferrals, no programme's have been cut and the Government remains committed to a high tempo of operations – especially in Afghanistan – with an increase in the operational budget to around AS\$1.2 billion.

It is perhaps not surprising that the budget has not sought to make major changes since it is the role of the White Paper and the newly announced Mortimer Review to better define the future direction, content and structure of funding – especially as it affects capability and therefore procurement. There has been so little controversy over its parameters that even the Federal Opposition has been largely silent to date, with only a minor quibble about funding for Defence Family Healthcare Centres.

Notwithstanding, there are concerns within defence industry about a possible slowdown in acquisition caused by the combination of a procurement underspend and the formulation of the White Paper. The DMO budget of AS\$9.6 billion is a significant decrease due to an underspend of more than AS\$1 billion which is attributed largely to industry not meeting schedule. Parliamentary secretary for defence procurement Greg Combet says that DMO itself is only responsible for 12 percent of current project delays. However the underlying fundamentals of the budget are very good and not only has the Government stuck to the overall commitment of an increase in Defence spending by 3 percent per annum, it has extended this increase until 2018.

This solid level of funding should make it possible to acquire all, or most, of the equipment outlined in the Defence Capability Plan – especially when combined with the projected AS\$1 billion of annual internal savings required by the Government (actually AS\$10 billion over 10 years, which might not be quite the same thing).

The Defence Materiel Organisation will receive a total of AS\$9.323 billion, of which AS\$4.781 billion is for procurement. Sustainment and support of existing systems and equipment will cost AS\$4.145 billion. The Defence Housing Authority received an AS\$20 million hike to AS\$443 million.

The budget's overview of military personnel indicates that the ADF is well on track, after a slow start, to reach targets of 54,000 by 2010 and another 3,000 on top of that by 2017. The total Defence workforce, excluding the

DMO civilian workforce is forecast to reach more than 90,000 this financial year. The total wages bill for the coming year – again excluding DMO – is some AS\$7.9 billion.

The budget makes clear the critical ongoing role of the DMO in achieving the existing Defence capability plan: "Over the next decade, more than 80 percent of the ADF's warfighting assets will be replaced or upgraded. The DMO and Australian industry have a major role to play in this transformation and will manage acquisition and sustainment in excess of AS\$100 billion, of which an estimated 65 percent is to be spent in Australia."

Priorities for the DMO during the new financial year will include stepped up emphasis on "reducing the cost of ownership". This includes focussing

on efficiencies in the management of in-service platforms and equipment – which accounts for more than half the DMO's budget spend. As well as contributing to economic restraint, the intent is to provide more capability to the ADF within existing funds. Budget papers make clear that "any proposed solution that reduces capability, sustainability, or safety will not be pursued."

The budget papers also make clear that the DMO's own footprint is continuing to grow. The organisation is currently managing 236 major projects, each with a value of more than AS\$20 million, and more than 180 minor projects. Its

staff is now found at 40 locations across Australia. Overseas posts include the United States, United Kingdom, France, Spain and New Zealand. DMO will have around 7,700 on its payroll across the course of the financial year, with budget papers also noting that this is expected to remain steady for the next five years.

The budget provides another AS\$600 million for the new air warfare destroyer; AS\$564 million for the new Super Hornets; AS\$273 million for Army's new multi role helicopters; AS\$260 million for the air force's new air-to-air refuelling tankers; and AS\$225 million for ongoing Hornet fighter upgrades.

But it is in the actual management of projects where DMO's performance is ultimately judged, and budget papers make clear that there remain real challenges ahead. AS\$172 million has been allocated to the Army's armed reconnaissance helicopters but they remain two years late. The troublesome Air 5077 airborne early warning and control project receives another AS\$68 million on the AS\$2.5 billion already spent, with the project now 28 months late and further delay is possible.

Lastly there is a planned spend of another AS\$118 million on the FFG upgrade project – on the way to a total of around AS\$1.5 billion for four ships which will hopefully re-enter service by 2009. That target, it should be noted, is long before their ultimate retirement from service. **APDR**



*A long, long time coming: Wedgetail continues to dominate the DMO's list of delayed projects.*

PETER LA FRANCHI SYDNEY

# Northrop wins BAMS

## But protests raise new challenges for proposed Australian buy

The United States navy has announced the Northrop Grumman RQ-4N Global Hawk as its preferred solution for its broad area maritime surveillance (BAMS) programme but with the US Government Accountability Office [GAO] now reviewing the selection after a protest by rival contender Lockheed Martin.

A final determination is expected by early August; however Northrop Grumman says it is continuing to mobilise to meet project schedules.

Decisions on any follow on Australian buy are dependent on both the outcome of the protest, as well as review of the Royal Australian Air Force's Air 7000 phase 1B requirement as part of the review of all capability requirements linked to development of the new Defence White Paper.

Australian Defence budget papers released 13 May confirm that an intermediate review of phase 1B is scheduled to occur during the coming financial year, but provide no target timeframes.

The previous Federal government gave first pass approvals for the project to proceed as a collaborative effort with the USN in July 2006. A two nation agreement was signed in January 2007 with Australian government intermediate approvals initially planned for late last year.

A delay in the USN source selection effort had seen the rescheduling of that intermediate approval milestone to third quarter this calendar year; however the White Paper process plus the protest adjudication now means it is unlikely to occur until first quarter calendar year 2009.

The Lockheed Martin protest, lodged 5 May, alleges that "information provided to us during our debrief indicated that we offered a technically compliant and awardable solution at significantly lower cost, leading us to request a GAO review."

Lockheed Martin competed the project in a teaming arrangement with General Atomics Aeronautical Systems, offering a derivative of

that company's Predator B air vehicle designated Mariner.

GAASI declines to comment on the protest, referring all questions to Lockheed Martin.

In a written statement Lockheed Martin says that the company "protests contract awards infrequently, and only when we believe that the benefits of our offerings were not fully considered during the evaluation process."

Boeing had also contested the project in a teaming arrangement with Gulfstream, proposing an optionally piloted Gulfstream V business jet.

The USN announced Northrop Grumman was announced as the winner of its extended BAMS competition on 22 April, awarding an 89-month, US\$1.16 billion contract for system development and demonstration. The service could ultimately buy as many as 50-60 of the air vehicles. Australia is expected to buy 5-8.

The USN said in its own 5 May statement that it is "confident the source selection process considered all proposals fairly, equally and in full compliance with the stringent [US] federal acquisition regulations. The selection was based on an evaluation of the best overall value to the government in meeting the criteria set forth in the solicitation."

Northrop Grumman describes its win as the result of a "deliberate and meticulous source selection process designed to make a best value determination on behalf of the Navy. Northrop Grumman's BAMS UAS offering provides the most technically capable, lowest risk and best overall value system for our Navy customer and our nation's war fighters. We are confident the award will stand. Until we have reviewed the details of the competitor's protest, we have no further comment."

The RQ-4N airframe is based on the RQ-4 Block 20 aircraft with modifications to support changed sensing and mission requirements. The aircraft will carry the new Northrop Grumman Electronic Systems BAMS Multi-Function

Active Sensor [MFAS] active electronically scanned array radar, Raytheon Night Hunter II electro optic and infra-red sensor suite, and an extensive communications suite to be supplied by L-3 Communications. Electronic warfare self protection systems are being sourced from Sierra Nevada Corporation.

Australian unique requirements for the project include Australia exploring fitting a more capable maritime mode radar to its planned fleet of broad area maritime surveillance (BAMS) endurance UAVs rather than accept the system adopted by the US Navy under the two nation programme. That alternate radar would be capable of detecting small wooden hull vessels - what Australia refers to as "type III targets"

Australia is also seeking some additional overland requirements, comprising ground moving target identification and automatic moving target indication.

Northrop Grumman, however, says that its new MFAS radar is expected to meet all operational requirements.

The Australian intermediate approvals process was originally designed to synchronise air 7000 phase 1B decision making with the USN's milestone B decision point, and to give a green light to plans for the appointment of an industry capability partner (ICP) to develop an integrated ground environment for the BAMS system.

Second pass approval for air 7000 phase 1B is also intended to be synchronised with the USN's milestone C decision. The notional target date for that second pass had been scheduled for third quarter calendar year 2013; however that would place it ahead of the USN Milestone C decision timeline and is therefore also likely to change.

The second pass approvals decisions by Australia would be preceded by the release of a restricted request for tender to the USN's selected BAMS prime contractor in mid 2010.

APDR





# Elbit Ad (p31)



PETER LA FRANCHI SYDNEY

# Govt confirms JP129 in trouble

## Delayed TUAV systems for Army to be delayed even longer.



How long does it take? The Army isn't getting its new TUAVs until 2011.

The Australian Army's long delayed Joint Project 129 phase two tactical unmanned air vehicle [TUAV] acquisition has been elevated to the list of projects acknowledged by the federal government to be at major risk with initial operating capability now not expected to be achieved until April 2011.

Parliamentary secretary for defence procurement Greg Combet confirmed 15 May that the project, acquiring Israeli Aerospace Industries I-View 250 aircraft, now shares the same risk status as the air force's Air 5077 airborne early warning and control acquisition and the navy's Sea 1390 FFG upgrade.

He says that "Some of the projects that have been experiencing industry delays include Wedgetail, the ARH Helicopters, the Tactical UAV and the Guided Missile Frigate upgrade.

"It is no coincidence that these are some of the much advertised 'projects of concern' that the Government is currently working hard to remediate. The tactical UAV has recently made this list."

The prime contractor for JP129 is Boeing Australia.

The project received second pass government approvals on 8 November 2005, but with an eleven month lag before contracts worth A\$102.8 million were signed 14 December 2006.

Defence signed a separate twelve year commercial in-service support agreement with Boeing on 2 February 2007.

The purchase contracts were structured in two parts, a primary acquisition contract for the I-View 250 UAV and its sensors worth A\$74.5 million, and a systems integration award worth A\$28.4 million. The second contract supported acquisition and integration of the L3 Systems tactical common datalinks (TCDL) by Boeing Australia.

Both contracts are fixed price and run from 21 December 2006 to 31 December 2010. The IAI component of the primary contract is worth

US\$45 million.

Defence is separately spending some A\$17.5 million on development of basing facilities for the UAV systems at the Australian Army's Gallipoli Barracks in suburban Brisbane.

The project has a current total expenditure approval of A\$126 million, with A\$7 million expected to be spent by the end of the current financial year. Total projected outlays for 2008-2009 are A\$25 million.

The year long delay between source selection approvals for the Boeing bid and contract signature was caused by a stand-off over acceptance of liability provisions in the draft contract.

The I-View 250 aircraft had never flown at the time the type was selected by the DMO, with Australia remaining the only customer for the type. Defence budget papers released 13 May advise that "the contractor has experienced delays in progressing system design; however, major achievements for 2008-2009 will be completion of detailed design engineering for both the mission and support systems. The main risks to the project schedule relates to Australian airworthiness certification, fielding of the Australian Defence Force's first UAV system [sic] and with integrating the wide-band secure datalinks".

TCDL integration was identified by all contenders for the project during the tender response phase.

The original tender specification, copies of which are in the possession of APDR, was predicated on bidding a system which was proven and in operational service with another defence force. Boeing and IAI successfully argued that while no I-View 250 had ever been built, a smaller version demonstrator had been flown while the production aircraft wing was derived from the IAI Searcher 2 aircraft family which had amassed thousands of operational hours in Israeli and Singaporean service.

As signed by Boeing, the JP 129 acquisition contract is predicated on supply of two TUAV

systems, each comprising four air vehicles, plus ground control stations, communications system, and support equipment. The contract also calls for supply of four attrition aircraft, taking the total to twelve.

The I-View 250 has a maximum take-off weight of 250kg (550lb), an endurance of 6-8h and a wingspan of 6.7m (22ft). It has a fully automatic take-off and recovery capability, using a catapult launcher and a precision parafoil landing system to allow recovery to confined areas.

The TUAV system is intended to be operated by the 20 Surveillance and Target Acquisition Regiment. That formation also manages the Australian Army's existing Skylark mini UAV system and commercial UAV services contracts for the Australian and British army's using the Boeing-Insitu Scan Eagle long endurance low altitude (LALE) system.

Boeing and IAI won the JP129 competition against rival bids by Thales Australia, offering the Elbit Hermes 450 in its Watchkeeper 450K configuration, and BAE Systems, which bid the same AAI Shadow 200 system as operated by the US army.

The Shadow 200 is the world's largest series production TUAV type. The US army's most recent order, announced 8 May, comprises two systems, each of four Shadow 200 air vehicles with fully integrated TCDL capability. That order carries a total price tag of US\$45 million with deliveries to be completed by May 2010.

The first Australian government confirmation of the I-View 250 selection was made by former defence minister Robert Hill in a 12 December 2005 statement which advised that the first TUAVs would enter service during 2008.

The December 2006 acquisition contract called for deliveries in late 2009 - two years later than originally sought during the competitive tender phase. The April 2011 target means at least 18 months has since been added to the contracted schedule. **APDR**



PETER LA FRANCHI SYDNEY

# RAN interested in follow-on small UAV trials

The Royal Australian Navy is eyeing a potential follow-on trial of small unmanned air vehicles from its Armidale class patrol boats, with lessons from the December 2006 deployment of an Aerovironment Aqua Puma system pointing to a need for a system with increased endurance but minimal ship impact.

The RAN's official report detailing the Aqua Puma demonstration calls for the next trial system to also provide improved sensor capabilities aboard the UAV.

The report, released internally within the Defence 7 January 2007, recommends a follow on trial provided enhanced capabilities are available.

It says that the Aqua Puma demonstration, carried out 6-13 December 2006, saw ten successful flights out of a total of 12 attempted launches: "The demonstration of small UAV operations on HMAS Armidale meet the contracted aims. It showed that an Armidale Class patrol boat [ACPB] is able to successfully integrate and use a UAV for a range of missions. The size of the Aqua Puma allowed easy integration into the ship from a weight and space perspective, and was suitable for rigid hull inflatable boat [RHIB] operations."

However, "to be effective on an ACPB, a UAV needs greater range than demonstrated by the Aqua Puma and an increase in the performance of the sensors. The greatest benefit is believed to be achieved through improved management of the mission control and processing of the available imagery; allowing a more stabilised picture, automated processing of information; and tighter integration into the ships sensor suite"

Aerovironment received an A\$164,404 contract from the RAN in September 2006 to carry out the trial. The flights had been planned to be carried out during that same month but were delayed after the Armidale class, which was at that stage still being transitioned into service, were temporarily suspended from operations after problems were found with the boats' fuel supply system. Aerovironment first proposed a patrol boat demonstration to the RAN in February 2006.

Trial parameters included examining UAV performance in performing coastal and near shore surveillance; surveillance support to small boat parties; support to boarding parties; evidence collection to support potential legal action against illegal fishing boats; search and rescue support, and surveillance in shoal or poorly charted waters.

Hand launch of the UAV was carried out from the bridge deck of the Armidale as well as from RHIBs. Recovery was carried out using a RHIB, with the Aqua Puma using a deep stall landing profile to land on the sea.

The trial report says that "possibly the task where the UAV performed best" was during a flight to search for a hidden illegal fishing boat. "The task was to find and observe a vessel hidden in amongst a complex area of reef, islands and mangroves...The UAV was launched and proceeded to search a 25nm section of coastline. The search was completed in under two hours. On a previous occasion, a similar area was searched using six personnel in two RHIBs over a period of around three hours. The ability to gain the overhead view allowed the searching behind mangroves, and in areas at the back of the beach where the RHIB was unable to search.

"Route planning was done on the fly; however it is envisaged that an automated system could offset flight routes from shoreline vector data to produce a more thorough search path with significantly less effort."

Support for boarding parties revealed challenges for manpower capacity aboard the

Armidale class. The report says that "personnel constraints with the current scheme of complement reduce the ability to deploy the UAV and a full boarding party simultaneously. It is possible to run a four person boarding party and the UAV simultaneously for low threat level boardings."

During a flight on 10 December 2006, the UAV was launched in response to a radar contact resulting in the detection of a 7m vessel. "The UAV provided real time imagery of the target vessel to the boarding officer and specific details of the vessel in relation to navigational dangers. This same flight demonstrated the apprehension of potential illegal immigrants in a reef atoll, and again helped in both locating the personnel and in navigating the RHIB towards the atoll.

"Limitations of the Aqua Puma UAV included the lack of camera steerability / stabilisation and the ability to autonomously loiter over a designated target.

"The imagery, although very coarse, allowed a greater appreciation of target vessels activity before boarding and higher resolution would have added value to this information. It was not possible to detect what individuals were doing."

The report also notes that "imagery was often just off target at critical moments" during the boarding operation.

It says that the trial demonstrated ability for a small UAV to be used in additional roles such as natural resource management and disaster relief operations. **APDR**

*UAV mother ship? Trials of Aqua Puma have strengthened RAN interest in a small UAV capability for the Armidale class.*



# Tuning underway for ADF helicopter strategy

RAN requirements take lead in new financial year budget plans.

**D**efence budget papers confirm that key government approvals for the Royal Australian Navy's Sikorsky S-70B-2 Seahawk helicopter capability assurance programme will proceed in the coming financial year but with the overarching Air 9000 rotary wing aviation master project currently being reviewed as part of the development process for the new Defence White Paper.

The budget papers also confirm the Defence Materiel Organisation [DMO] is nearing a settlement with Australian Aerospace on settlement of an ongoing contract dispute linked to the project Air 87 Eurocopter Tiger armed reconnaissance helicopter acquisition project.

The Seahawk capability assurance programme phase 1 [SCAP1] replaces the former Air 9000 Phase 3 Seahawk project, which had included consideration of either replacing or carrying out a major upgrade for the existing aircraft.

The new project phase is baselined on sustainment of the Seahawk in RAN service as an integral part of its frigate weapon systems for the medium term, but with pending White Paper decisions to guide scheduling of a replacement aircraft effort.

Two replacement options have been already been assessed by Defence and the Federal government – acquisition of new Sikorsky MR-60R/S Seahawks baselined against the current US navy build programme, or a follow on buy of Eurocopter MRH-90 aircraft. Both options were looked at as part of Government review of the future of the RAN's project Sea 1411 Kaman SH-2G(A) Super Seasprite review during February and March this year, resulting in a cancellation decision.

The MRH-90 is already on order for the RAN as a replacement for ageing Westland Sea King helicopters from 2010 under project Air 9000 phase 6. The type is also on order for the Australian Army for its Air 9000 phase 2 and 4 requirements for additional troop lift helicopters with initial operational capability of one troop of four aircraft planned for mid 2011. The combined orders will

see a total of 46 MRH-90 in Australian service by 2014.

The FY2008-2009 budget forecasts a potential spend of up to A\$13 million to cover potential legal costs associated with the termination of the Kaman Sea Sprite contract. However, that amount is described as being indicative, and "will be offset by the Australian Government receiving at least 50 per cent of the proceeds from any sales Kaman Aerospace make on return of the aircraft, training equipment and spares". Under the terms of the settlement negotiated with Kaman during March-April this year the sale process has a guaranteed return to the Commonwealth of A\$39.5million.

## TIGER TEMPEST TAMED

Resolution of the DMO-Australian Aerospace dispute over late delivery of the project air 87 Eurocopter Tiger armed reconnaissance helicopter project is anticipated before the end of the current financial year.

Budget papers confirm that Australian Aerospace and the DMO entered a formal contractual dispute resolution process on 9 October 2007 with this addressing issues linked to both the sustainment and acquisition contracts. "Both parties worked collaboratively to achieve an appropriate resolution which is expected to be executed through a Contract Change Proposal and resumption of payment by July 2008" the documents state.



Sea Hawk: Now the focus of a capability assurance programme with bigger decisions on replacement dependent on White Paper findings.

A total of 11 Tiger aircraft out of 22 ordered had been accepted by Defence as at 21 April 2008, along with a software support facility; ground mission management system; facilities in Darwin, Northern Territory, and Oakey, Queensland; training courseware and four of the six ground training devices.

Budget papers advise that "support has been established at RAAF Edinburgh, South Australia, for the instrumented aircraft. The full flight and mission simulator was accepted for pilot transition training on 13 December 2007."

Delivery of operational capability to the Army "has been delayed by 24 months, primarily because of delays in training that resulted from delays in the Franco-German program. The training delay was the main reason for stopping payment to the contractor under the acquisition contract for not achieving the Initial Operational Capability milestone," budget papers state.

The dispute resolution process "enables the project to proceed to address the main risks and schedule pressures. The initiatives to increase training through-put include training of some Australian pilots at the Franco-German school and contractor provision of two advanced training helicopters to be based in Darwin. Whilst some increase in cost has been agreed the support contract has been revised to maximise aircraft availability while reducing total cost of ownership to the Commonwealth over the contract period."

Deliveries of the remaining 11 aircraft is planned to continue across 2008 and complete in late 2009. Budget papers forecast achievement of at least 5,520 flying hours for the type in the coming financial year, up from 1,010 hours achieved by six aircraft during FY2006-2007.

## MRH-90 ROLL OUT

Army took delivery of its first two MRH-90 on 18 December with those aircraft built in France. The collective Air 9000 build plan for the type is predicated on French build of four aircraft with the remaining 42 to be assembled at Australian Aerospace facilities in Brisbane from kits. Initial training for aircrew, maintenance and support



*Tiger: A resolution of the ongoing contract dispute between Australian Aerospace and DMO is near.*

personnel was completed in France in 2007.

Budget papers advise that “over the course of 2008-09 a further seven helicopters will be delivered...The aircraft will be utilised for initial training and test and evaluation activities during the period, operating out of RAAF Townsville. The planned rate of effort for the year is 600 hours, which will build over the following years to the mature state of 10,300 hours per year.”

The budget papers note that “the MRH-90 aircraft is at a far more mature state of development than the Tiger armed reconnaissance helicopter was for this stage of the project and is a less complex helicopter and thus the major risk is workload related rather than technical.

“The contractor and French equivalent to the DMO have given the Australian program high priority for resources. This enabled the schedule to be maintained, however, international demand for the MRH-90 - known as the NH-90 - is very high.”

Risk mitigation efforts for the acquisition are drawing heavily in lessons from Air 87 the budget papers note.

The bulk of deeper sustainment arrangements for the new type will be carried out under contract by Australian Aerospace, with operational level of maintenance to be performed by the Army’s 5 Aviation Regiment from facilities in Townsville. “Australian Aerospace will be building on their capacity to conduct deeper maintenance of the helicopters during the next year, as well as ensuring that their spares stocks are sufficient to support the required training operations” say budget papers.

The Army’s existing medium helicopter, the Sikorsky S70A-9 Black Hawk, is now the focus of a remaining life of type sustainment effort though

pressure continues within the Special Forces community for retention of the type as exclusive to that service.

The Army operates 34 Black Hawks, with Sikorsky Australia closely involved in supporting the type. BAE Systems Australia is contracted to provide deeper maintenance support for the fleet under a performance-based contract that also includes the Army’s Boeing CH-47D Chinook helicopters. Budget papers advise that “actions have been taken in 2007-08 to add additional deeper maintenance contractor capacity that will mature throughout 2008-09” for the Black Hawk type.

The budget papers warn that Black Hawk sustainment faces risks emerging from high intensity usage of the type in operations as well as availability of spares.

The type is forecast to fly 7,500 hours in the coming financial year, down from an achieved total of 6,157 hours in FY 2006-2007.

“The high utilisation rate for operational tasking has seen an increase in spares usage and in damage sustained by aircraft, which has placed additional pressure on the deeper maintenance capacity,” budget papers state.

“Selected upgrades will continue through 2008-09 to address system obsolescence to ensure operational viability is maintained until the Black Hawk is replaced under Project AIR 9000 Phase 4.”

### ECHIDNA MACHINATIONS

Development of a new electronic warfare self protection suite for the Black Hawk suite is being progressed under the project Air 5416 phase 2A Echidna programme.

Budget papers advise that the “Echidna Phase 2A Program has completed detailed design

against Black Hawk aircraft design, electronic warfare controller software development and mission support system development. The first Black Hawk will be modified around mid-2008, in preparation for ground and flight testing, planned to commence late 2008...”

“During 2007 the Echidna 2A Program took responsibility for the implementation of an approved Army Minor Project which provides interim early delivery of a subset of the Echidna 2A capability, a Missile Warning System and Counter-measures Dispensing System, onto 12 Black Hawk aircraft. As a consequence, the delivery of the full Echidna 2A capability on the first Black Hawk aircraft was extended by six months.”

Parallel development of a version of the Echidna suite for Army’s Chinook helicopters was delayed “due to aircraft availability issues”.

Budget papers also advise that work on the Chinook fit is being suspended “on conclusion of the detailed design phase, with first article modification being removed from the current prime contract with BAE Systems. Funding for the Chinook modifications will be retained within the project budget to allow for the modification of the fleet once aircraft can be made available.”

The budget papers also warn that the software development requirements of the Echidna suite electronic warfare controller system “are extremely complex. There is a significant risk that software developmental problems could affect the overall project delivery schedule. To mitigate this risk the program has been restructured in a two build approach which allows the potential of an incremental delivery of capability if more complex areas of the software development start to cause schedule slippage.” **APDR**

# Big dippers go deep and low

**N**avies searching for a high-end active dipping sonar to provide their anti-submarine warfare (ASW) helicopters with an organic long range acoustic sensor can today choose from one of two system solutions pitched head-to-head in the marketplace: in one corner is the Helicopter Long Range Active Dipping Sonar (HELTRAS) DS-100 dipping sonar manufactured by L-3 Communications Ocean Systems; and in the other is the Folding Light Acoustic System for Helicopters (FLASH) system

produced by Thales. Both are low frequency systems with a substantial sales pedigree behind them, but discriminated by their different technical approaches and performance characteristics.

Heli-borne active dipping sonars remain a key tool in the 'team game' that is anti-submarine warfare (ASW), whether operating in the littoral, blue water or a combination of the two. They function as monostatic, variable depth transmit/receive sources which can be rapidly re-deployed to support the search, tracking and prosecution

of submarine targets. They are complementary to long-range shipborne sonars and patterns of air-dropped sonobuoys, and, in the future, will play an important role employed within bistatic and multistatic sonar networks.

The Royal Australian Navy has a potential requirement for a high performing dipping sonar system to support its proposed Sikorsky S-70B mid-life update programme. This would form part of a major sonics upgrade for the aircraft that would additionally address the acquisition of a successor for the AQS-503 sonobuoy processor

*FLASH: Ordered by the French navy in 2001 to equip its Nordie Helicopter Industries NH90 helicopters.*



originally supplied by CDC.

So what is the form of the two contenders? L-3 (previously Bendix, then AlliedSignal) began development of the HELRAS dipping sonar in the 1970s, adopting low-frequency flex disc transducer technology. HELRAS was nominated by the Italian Navy as early as 1985 as the preferred dipping sonar for its new Agusta Westland EH 101 anti-submarine helicopter force.

Similar in size and weight to L-3 Ocean Systems' widely sold mid-frequency AN/AQS-18(V) dipping sonar, the HELRAS has subsequently been selected for variants of the EH-101, S-70 and NH90 helicopter (the cable interface, sonar processor, sonar control unit, display, reeling machine and control devices are common between the 10 kHz AQS-18 and the 1.38 kHz HELRAS).

Capable of reaching depths of up to 500 m, L-3 states that the system has "a figure-of-merit sufficient to achieve convergence zone detections in deep water, and transmission/receive characteristics optimized for extremely long ranges in shallow water," adding: "In addition to HELRAS's long range surveillance and search capability, it is also well suited to redetection, target localization and weapon delivery against deep and shallow water targets."

The company further claims that results from tests conducted by the US Navy, the Royal Australian Navy, the Italian Navy and the Royal Norwegian Navy in waters ranging from the Timor Sea, Mediterranean, to the Vestfjorden have demonstrated HELRAS "outperforming even ship-borne systems against diesel-electric submarines".

Low frequency operation designed into HELRAS uses proprietary transducer and beam forming technology to allow multiple boundary interactions and reduced reverberation contamination of the received signals. The wet end incorporates separate transmit and receive arrays, the latter having eight hydraulically driven arms that open out to a diameter of 2.6m when deployed.

The reeling mechanism lowers the wet end at 2.1m/sec and raises it at 4.6m/sec. The transmit array has eight projector elements (including an underwater telephone transducer), which together form a vertical array, 5.2m long, let down from within the wet-end central body during deployment. The transmitted beam can be from -15° to +15° in elevation and through 360° in azimuth.

Maximum operating depth is 550m, the range scales being graduated between 1, 1.5, 2.5, 4, 6, 10, 16, 25, 40 and 60 nm. Operating modes include active CW to 10sec pulses (FM to 5sec pulses),



*HELTRAS: In operational service with the Italian navy aboard its Agusta Westland EH101 helicopters.*

passive and underwater telephone. Total weight is 326 kg, including 152 kg for the wet end, 115 kg for dome control, reeling machine, reel and cable, 45 kg for the processing electronics and 14 kg for the sonar control and flat-panel display.

Its high source level (218 dB/μPa/yd) and somewhat low-operating frequency range (1.31-1.45kHz) is claimed by L-3 to give HELRAS performance advantages in littoral waters over the rival FLASH, which has a higher standard frequency range (3.5-5.5 kHz).

L-3 also asserts that in deeper waters HELRAS can provide about six times the area coverage of FLASH while achieving a 20-40% improvement even in difficult littoral waters. This, it argues, has a clear benefit to the helicopter's en-route fuel economy and subsequent endurance while actually on station.

L-3 claims that HELRAS not only has the longest detection range in its class - said to be better than 35 nm, reaching out as far as the second convergence zone in optimum conditions - but that it also has all the capabilities needed for relocation and target prosecution. CW pulse transmissions are used for long-range detection in the sonar convergence zone, with FM and short CW pulses employed for target re-acquisition, location and attack.

Use of high resolution Doppler processing and shaped pulses enables detections of targets even at speeds below 1 kt, according to L-3. Extended duration FM pulses are additionally available to detect the near-zero Doppler target.

Up to 10 targets can be tracked simultaneously. Active display formats comprise: all beam Doppler range; bearing-range/Doppler-range; bearing-range; and A-scan.

Although HELRAS began development in the 1980s, the current product has been fully updated with commercial off-the-shelf (COTS)

electronics. The first HELRAS contract, to supply an initial 10 HELRAS dipping sonar-only systems to the Italian Navy for fitting aboard its EH 101 fleet, was approved in December 1998 and the order was placed with L-3 by prime contractor AgustaWestland the following year. According to the Italian Navy, operational testing and exercise use has demonstrated detection ranges approaching 50 nm in favourable water conditions.

The Netherlands, German and Italian navies have also chosen HELRAS for the anti-submarine version of the NH 90 multinational helicopter programme, with L-3 Communications Ocean Systems' German subsidiary ELAC Nautik awarded an initial production contract in 2003.

Turning to the Sikorsky Seahawk, both Greece and Turkey have selected HELRAS for their respective S-70B variants, and, while never publicly announced, it is understood that HELRAS equips the S-70B Seahawk variant being acquired by the Republic of Singapore. Additionally, HELRAS has been selected for the Canadian Forces' maritime helicopter project, where it will equip the Sikorsky CH-148 Cyclone, a version of the S-92 aircraft.

### FLASH SONAR SYSTEM

FLASH development began in France around 20 years ago by Thomson Sintra Activities Sous-Marins, a predecessor company of Thales. However, the system had in fact made considerable inroads into the export market well before the French Navy, through AgustaWestland, which placed an order in late 2001 for 14 FLASH systems to equip its Nordic Helicopter Industries NH90 helicopters.

Indeed, a first sales success had come in December 1991 - a full decade before - when a FLASH variant, combining the folding lightweight array and AQS-950 acoustic processor under the designation Sonar 2089, was selected as the active dipping sonar for the UK Royal Navy's 44 Agusta Westland Merlin HM.1 anti-submarine helicopter programme. The following year it was announced that, after a competitive evaluation, the US navy had also selected a version of FLASH to meet its Airborne Low-Frequency Sonar (AQS-22 ALFS) requirement. This variant is primed through Raytheon Integrated Defense Systems.

Sonar 2089 is operational with the RN with frontline feedback being very positive. Merlin operators praise the ability of the sensor to find small, quiet diesel-electric boats hiding in difficult bottom conditions - for instance, adjacent to wrecks - even when those target boats are stopped.

## AIR 9000

In 2000 Thales also completed delivery of five sonar-only derivative Alcyon systems to Eurocopter, which were ordered in 1996 for AS 532C Super Puma/Cougar helicopters for the United Arab Emirates (UAE). The first of these helicopters was handed over to the UAE in 2001.

In the United States, the implementation of ALFS has been tied to the development of the MH-60R multimission helicopter, which involves both dipping sonar and a sonobuoy processing capability. Using six prototype systems, ALFS formally completed at-sea operational testing (OT-IIA) in March 2000. The system entered low rate initial production in October 2002 and entered full rate production in 2004.

For the ALFS programme, the FLASH reeling machine is supplied direct from Thales in Brest, while the sonar transmitter/receiver is licence-produced by Raytheon. Processing is the responsibility of MH-60R prime contractor Lockheed Martin Systems Integration, Owego, which has subcontracted the work to L-3 Ocean Systems.

Full rate production of AQS-22 has been accelerated since the initial fielding date of 2006. As of March 2008, Raytheon had delivered 14 systems and was under contract for an additional 28.

FLASH has a nominal detection range of 27,000 yards, with range scales out to 45,000 yards, necessitating a complete change in tactics compared with earlier UK or French systems (typical detection range under similar conditions using Sonar 2069 is understood to have been only 5-6,000 yards). In favourable conditions, exploiting channelling effects, detection ranges of over 40,000 yards have been achieved.

Thales points out that FLASH has a much smaller receive transducer array diameter than HELRAS (70cm versus 2.6m) because its operating frequency is higher, and its unitary transmit array configuration does not require a second electric deployment motor and its associated negative impact on mean time between failures. Furthermore, its 1.5m long transmit antenna embodies eight conventional ceramic ring transducers operable down to 750m, whereas flex disc transducers cannot be used at depths below 500-550m. The company adds that the positive gradient FLASH exploits at 700m water depths may imply a shorter absolute range than the negative gradient used by HELRAS at 500m, but it affords FLASH a continuous detection capability with no gaps or shadow zones, as happens with convergence-zone systems.

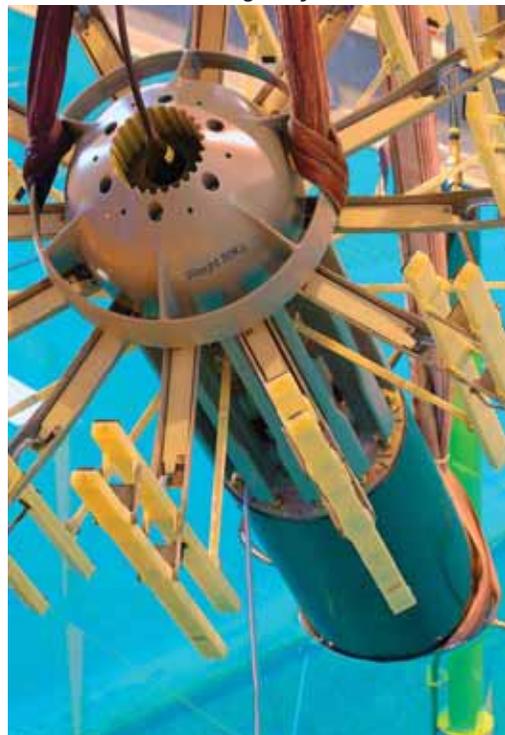
For practical operational and safety reasons, submarines almost invariably have speed limitations in shallow water, so their Doppler

signals are unlikely to be pronounced. In shallow waters, not only reverberation but also noise generated by the helicopter blades can become a problem, although this is more perceptible at frequency ranges below those used by FLASH. The latter retains a large bandwidth (1000Hz FM), giving the superior definition needed for analysing low-doppler echoes and combating reverberation. HELRAS frequencies allow an FM bandwidth of around 300Hz.

Apart from cycle-time and reliability issues, Thales points out that the FLASH dome is almost half the weight (80kg) of its rival, which has an obvious effect on practical platform choices, and the sonar's ease of handling: the USN requires that two crew members be able to replace a failed drum and cable or a dome unit while under way in Sea State 3 within the 20-minute time period it takes to refuel the helicopter.

Rather than using an existing unit, FLASH has a dedicated reeling and control system that gives the wet end maximum descent and ascent rates of 4.5m/sec and 9m/sec respectively. This translates into a dip cycle time at 700m that is no greater than that of HELRAS down to 450m. Thales says that theoretical assessments show that, against a worst-case target (for example a submarine escaping radially at 30kt), the FLASH-equipped helicopter potentially has as many as three dipping opportunities while the target remains within torpedo-detection range.

*Wet end: FLASH's folding array.*



According to Thales, testing at the Atlantic Undersea Test and Evaluation Centre and in UK waters has supported this.

Norway's decision to purchase six FLASH units was announced in June 2002. The version ordered is the same as that adopted by the French Navy for its NH90 sonics suite (combining FLASH and the TMS 2000 sonobuoy processing system) apart from a requirement to work bistatically with the CAPTAS shipboard sonar that Thales is supplying for the Royal Norwegian Navy's Fridtjof Nansen-class frigates. This requires an additional link for co-ordination between the two systems.

Another FLASH variant has been sold to Sweden. Following a competitive evaluation against a rival bid from L-3, a contract for development and delivery of five so-called FLASH-S systems was awarded to Thales in April 2002 by Saab Systems on behalf of the Royal Swedish Navy to equip five NH 90 helicopters being acquired under the Nordic Standard Helicopter Project.

In order to provide optimum performance for the Baltic environment, FLASH-S features a unique wet end combining, in the same body, a medium frequency search array and a very high frequency classification array. It retains the same winch parts in conjunction with a modified array and transmitter, plus altered software to take account of its higher operating frequency.

The French and Norwegian navies have specified a palletised system designed to enable their multimission NH 90 helicopters to be re-configured in 30-60 minutes. The pallet comprises the dome, reeling machinery and electronics cabinets, the heaviest element of which is the dipping sonar.

Although such equipment forms part of ALFS, US passive algorithms and acoustic data are largely non-exportable and Thales has therefore had to develop its own common acoustic processor (CAP) for the NH90. This CAP is based on a COTS PowerPC G4 computer, as used in surface-ship applications. In French Navy service it will handle the 3-5 kHz dipping sonar data plus that from up to 16 DIFAR or SSQ-62E DICASS buoys, collectively giving coverage over the full 0-9.5kHz band.

The Sonar 2089 system fitted to the RN's Merlins will be upgraded under the Merlin Capability Sustainment Programme. This will see a new CAP, based on Pentium processors, introduced to handle both dipping sonar and sonobuoy processing. Other improvements include new shallow water detection and tracking algorithms and colour-enhanced Windows-style display formats. **APDR**



# Australian Airshow Ad (p39)



# Ross David Butler

## 19 December 1954 – 13 May 2008

Musician, hairdresser, salesman, soldier, journalist and publisher.

**R**oss Butler, group publisher of Asia-Pacific Defence Reporter, Asian Aviation and Defence Review Asia magazines, passed away at 8.50PM on the evening of 13 May at the Westmead Hospital in Sydney. He spent his final hours in the company of his wife Marilyn, his stepchildren Ben and Lauren, daughter in law Casey, his grandchildren, and close friends.

Butler fought a long and often difficult struggle against cancer, but his bravery, his optimism, and his joy at the very act of living gave him the most incredible reserves of strength. He never gave up and indeed did not regard himself as sick, rather as simply having “a few dud genes”. He entered hospital in late February this year for a stem cell transplant – which was successful – but with complications caused by viral infections ultimately responsible for his passing. The final three weeks of his life were spent in a coma.

Born in Glasgow, Scotland, to a small business family, Butler's journey was to encompass almost every corner of the globe before settling to a new home in Australia. His strength of character and natural ease with people allowed him to make friends easily; for the duration of his life he won and retained the trust and confidence of many people in many different walks of life.

Butler's initial life interest was the bagpipes, a skill encouraged by his mother who was herself a talented pianist. He was on a trip to Iceland at the age of 16 as part of a junior pipe band when his mother succumbed to a previously undiagnosed ovarian cancer. Butler was found alone in the hills playing his mothers favourite pieces when the news reached him. He left home at the age of 17, briefly exploring the options of a career in the Royal Air Force and in theological studies, but then in 1972 took on an apprenticeship with Steiner's of London where he learnt the craft of hairdressing.

Butler continued in that career stream and through longstanding links between Steiner's and Cunard, secured a place aboard the liner SS Queen Elizabeth II as head hairdresser. He made several visits to Australia aboard that ship and in 1978 decided to migrate permanently, settling in Sydney. He worked in and out of hairdressing until 1989, with side interests including serving as a steward aboard the NSW state railway's north coast service where his eagerness to help work colleagues once resulted in a 48 hour shutdown of train services by trade unions because he breached strict workplace demarcation rules. During that same period he met his future wife Marilyn, and by 1988 had set up home with her.

In 1989 Butler joined the Federal Publishing company as an advertising salesman, leveraging his existing commercial skills experience in this new arena which quickly became the dominant passion of his professional



PETER LA FRANCHI

career. He worked on a variety of small business to business publications, and then in 1992 joined Dun and Bradstreet working on specialist trade catalogues. That same year friends in the Australian Army convinced him to apply his now formidable pipe skills as part of a service band and he joined the reserves to facilitate this. As ever, Butler took on this new challenge with vigour and systematically learnt all he could about the heritage of the Army as well as core issues facing those who serve in reserve units.

In 1993 Butler left Dun and Bradstreet to briefly join Reed Business Publishing, then returned in 1994 briefly to Federal Publishing as an associate publisher. He swapped to APN News and Media in 1995 with responsibility for advertising sales on Asia Pacific Defence Reporter. This was a major turning point in Butler's life, with that magazine having just come under the editorship of Tony Grazebrook, a formidable defence reporter and analyst who was fundamental to the re-invention of how the best defence journalism is now practiced in Australia. Guided by Grazebrook, Butler himself

began researching and writing on defence topics under a variety of pseudonyms. At the same time the professional relationship between the two men developed into a deep and lasting friendship, and when Grazebrook succumbed to cancer in 2000, Butler was at his side. Butler himself was first diagnosed with non-Hodgkin's lymphoma in 1994, but with this responding successfully to early treatment.

Butler and his wife acquired APDR in 2001 after the title had undergone a series of rapid ownership changes. Ambitious from the outset in his new capacity as a media proprietor and publisher, he launched Asian Aviation magazine in 2003 and then Defence Review Asia in 2007, attaining international recognition of his skills and commercial acumen. He continued to work on and refine highly detailed plans for the advancement of his existing titles as well as the launch of new publications up to just a few short weeks before his passing.

Butler's final fight with cancer began in 2004 when he was again diagnosed with the disease. He successfully managed the condition for three years and in February 2007 underwent his first, but unsuccessful bone marrow stem cell treatment. The following month he married Marilyn in a small and moving ceremony in the backyard of their Sydney home. His final powerful struggle between February and May this year was a testimony to the sheer strength and capacity of will that had always carried Butler forward.

Butler leaves behind a resilient and highly capable publishing company that combines solid foundations with a deep capacity for growth. His name will long remain as one of the greats of the global defence business publishing sector. **APDR**

# The APDR Events Directory

Submissions for events should be sent to [peter.lafranchi@asianpressgroup.com.sg](mailto:peter.lafranchi@asianpressgroup.com.sg)

## AUSTRALIA

### 27-29 May 2008

UV Pacific 2008, Royal Pines Resort, Gold Coast.

Organiser: Shephard Group  
Email: [mailto:da@shephard.co.uk](mailto:mailto:da@shephard.co.uk)  
URL: <http://www.shephard.co.uk/events>

### 27-29 May 2008

HeliPacific 2008, Royal Pines Resort, Gold Coast

Organiser: Shephard Group  
Email: [mailto:da@shephard.co.uk](mailto:mailto:da@shephard.co.uk)  
URL: <http://www.shephard.co.uk/events>

### 9 June 2008

Defence Watch Chief Information Officer briefing Canberra Club, 45 West Row, Canberra.

Organiser: C3I Pty Ltd.  
Email: [mkreibig@c3i.com.au](mailto:mkreibig@c3i.com.au)  
URL: [www.c3i.com.au](http://www.c3i.com.au)

### 2-3 July 2008

Global Forces 2008, Hyatt Hotel, Canberra

Organiser: Australian Strategic Policy Institute  
Email: [lynnegrimsey@aspi.org.au](mailto:lynnegrimsey@aspi.org.au)  
URL: [www.aspi.org.au](http://www.aspi.org.au)

### 6-7 August 2008

Defence Logistics 2008, Radisson Plaza Hotel, Sydney

Organiser: Informa Australia  
Email: [registration@informa.com.au](mailto:registration@informa.com.au)  
URL: <http://www.informa.com.au>

### 19-21 August 2008

IDLs 2008, Sydney Convention Centre, Sydney, Australia

Organiser: International Data Links Society  
Email: [ids2008@consec.com.au](mailto:ids2008@consec.com.au)  
URL: [www.idls2008.com](http://www.idls2008.com)

### 2-5 September 2008

Radar 2008 – Maritime Surveillance, Hilton Hotel, Adelaide

Organiser: University of Adelaide and IEEE  
Email: [events@plevin.com.au](mailto:events@plevin.com.au)  
URL: <http://www.radar2008.com/index.html>

### 12-15 October 2008

Australian Institute of Project Management annual national conference, National Convention Centre, Canberra

Organiser: Tour Hosts Pty Ltd  
Email: [aipm2008@tourhosts.com.au](mailto:aipm2008@tourhosts.com.au)  
URL: [www.aipm2008.com.au](http://www.aipm2008.com.au)

### 27-31 October 2008

Australian Land Warfare conference and exhibition, Convention Centre, Brisbane

Organiser: DSTO  
Email: [lwcc@dsto.defence.gov.au](mailto:lwcc@dsto.defence.gov.au)  
URL: <http://www.dsto.defence.gov.au/events/lwc2008/>

*(NOTE: DSTO undertakes this event as a profit-making in-house activity. There is a clear historical pattern of delays in announcement of details due to longstanding organisational inefficiencies within the project team, with this remaining below the professional best practice standards for events of this type in Australia and internationally. The limited information made available on the DSTO website during April 2008 follows industry and media criticism of conference organisational arrangements across the course of first quarter 2008.)*

### 4-6 November 2008

Underwater Defence Technology (UDT) Pacific

Organiser: Nexus Media  
Email: [pearl.donvin@nexusmedia.com](mailto:pearl.donvin@nexusmedia.com)  
URL: <http://www.udt-pacific.com/homepage.asp>

### 6-7 November 2008

Submarine Institute of Australia Biennial conference, The Shine Dome, Australian National University, Canberra

Organiser: Submarine Institute of Australia (SIA)  
Email: [execmgr@submarineinstitute.com](mailto:execmgr@submarineinstitute.com)  
URL: [www.submarineinstitute.com](http://www.submarineinstitute.com)

### 11-13 November 2008

Asia-Pacific Defence Security Exhibition, Adelaide

Organiser: Tangent Link Pty Ltd  
Email: [suzy.pallett@apds exhibitions.com](mailto:suzy.pallett@apds exhibitions.com)  
URL: [www.apds exhibitions.com](http://www.apds exhibitions.com)

### 18-20 November 2008

MilCIS 2008, National Convention Centre, Canberra

Organiser: University of New South Wales / Australian Defence Force Academy  
Email: [mailto:milcis2008@consec.com.au](mailto:mailto:milcis2008@consec.com.au)  
URL: <http://www.milcis.com.au/>

## CHINA

### 4-9 November 2008

Airshow China 2008, Zhuhai, Guangdong province, China

Email: [zhuhai@airshow.com.cn](mailto:zhuhai@airshow.com.cn)  
URL: <http://www.airshow.com.cn/en/>

## INDONESIA

### 19-22 November 2008

INDO Defense Expo and Forum, Jakarta, Indonesia

Organiser: PT Napindo Media Ashatama  
Email: [benny@indodefence.com](mailto:benny@indodefence.com)  
URL: <http://www.indodefence.com>

## JAPAN

### 1-5 October 2008

Japan Aerospace 2008, Pacifico Yokohama, Japan

Organiser: The society of Japanese aerospace companies  
Email: [ja2008@sjac.or.jp](mailto:ja2008@sjac.or.jp)  
URL: <http://www.japanaerospace.jp/english/index.html>

## MALAYSIA

### 18-20 November 2008

3rd International Hydrographic and Oceanographic Industry conference and exhibition, Kuala Lumpur convention centre, Kuala Lumpur, Malaysia.

Organisers: Royal Malaysian Navy hydrographic department and the Malaysian National Oceanography Directorate.  
Email: [info@fr-exhibitions.com.my](mailto:info@fr-exhibitions.com.my)  
URL: [www.fr-exhibitions.com.my](http://www.fr-exhibitions.com.my)

## PAKISTAN

### 24-28 November 2008

International Defense Exhib and Seminar (IDEAS), Karachi, Pakistan

Organiser: Defence Export Promotion Organisation Pakistan  
Email: [info@depo.org.pk](mailto:info@depo.org.pk)  
URL: <http://www.ideaspakistan.gov.pk>

## THE PHILIPPINES

### 24-27 September 2008

Aviation Maritime and Defense Exhibition (AMD) 2008, Manila, Philippines

Organiser: [exhibitions@gsmi.com.ph](mailto:exhibitions@gsmi.com.ph)  
URL: <http://www.gsmi.com.ph/gevents/AMD/index.asp>

## EUROPE

### 27 May – 1 June 2008

ILA 2008 International Airshow and Exhibition, Berlin, Germany

Organiser: Messe Berlin and the German Association of Aerospace Industries  
Email: [ila@messe-berlin.de](mailto:ila@messe-berlin.de)  
URL: [http://www.ila-berlin.com/ila2008/home/index\\_e.cfm](http://www.ila-berlin.com/ila2008/home/index_e.cfm)

### 10-12 June 2008

Unmanned Aircraft Systems 2008, 10th International Conference & Exhibition, Paris, France

Organiser: UVS International / Blyenburgh and Co.  
Email: [pvb@uvs-info.com](mailto:pvb@uvs-info.com)  
URL: <http://www.uas2008.org/>

### 16-20 June 2008

Eurosatory international defence exhibition, Paris, France

Organiser: COGES  
Email: [coges@eurosatory.com](mailto:coges@eurosatory.com)  
URL: <http://www.eurosatory.com/>

### 9-10 July 2008

UV Europe 2008, London, United Kingdom

Organiser: Shephard Group  
Email: [hn@shephard.co.uk](mailto:hn@shephard.co.uk)  
URL: <http://www.shephard.co.uk>

### 14-20 July 2008

Farnborough International Airshow, Farnborough, United Kingdom

Organiser: Society of British Aerospace Companies  
Contact: [mailto:enquiries@farnborough.com](mailto:mailto:enquiries@farnborough.com)  
URL: <http://www.farnborough.com/intro.aspx>

### 26-27 September 2008

9th Unmanned Underwater Vehicle Showcase, Southampton, United Kingdom

Organiser: Reed Exhibitions  
Email: [paul.wilson@reedexpo.co.uk](mailto:paul.wilson@reedexpo.co.uk)  
URL: <http://www.uuvs.net>

## UNITED STATES

### 10-12 June 2008

Unmanned Systems North America, San Diego Convention Centre San Diego, California

Organiser: Association for Unmanned Vehicle Systems International  
Email: [info@auvsi.org](mailto:info@auvsi.org)  
URL: [www.auvsi.org](http://www.auvsi.org)

## MILITARY IT

PETER LA FRANCHI SYDNEY

peter.lafranchi@asianpressgroup.com.sg

# Emerald support tender released

The Department of Defence has released tenders for the commercial support of its proprietary “Emerald” engineering business process and decision toolset for up to five years pending its future replacement as part of Joint Project 2077 phase 2D.

The anticipated contracted workload comprises just one person for a forecast 220 days per year. However, the tender requirements include maintenance and support of the existing suite, and its evolution.

More significantly, the contractor will be required to “assist with the design and scoping of system improvements associated with JP 2077 and similar initiatives”.

The contractor is also required to support review of the system by external agencies, with the tender citing the Australian National Audit Office and Defence’s own management audit branch. That requirement reflects ongoing high profile monitoring of Defence’s logistics support systems driven by long term problems with the department’s ability to accurately account for stockholdings in its annual accounts.

Likewise the contractor is required to support data requirements emerging from investigations by Defence’s director general technical airworthiness.

Defence anticipate a three year contract period



Emerald is central to configuration management by the ADF.

with tenderers also required to provide options for an additional three years in either one or combined year increments. The initial contract period is planned to run from 1 July this year to 30 June 2011. Tenders were released 9 May and close 10 June.

Emerald is a core element in Defence’s capability configuration management processes. Tender documents describe the toolset as recording “engineering design decisions made by Defence personnel (mostly in system programme offices); controls the routing of the engineering approval and acceptance process within the organisation; and provides engineering managers with a tool to control the assignment and exercise of engineering authority”.

Development began within the department in the late 1990s and was rolled out in 2000 with the system currently supporting 2,100 users across all three service arms as well as within

the Defence Materiel Organisation. The toolset’s development and sustainment is managed by Defence’s Directorate of Logistics Systems Sustainment [DLSS]

Tender documents suggest that while the toolset is written in Microsoft’s SQL Server and Access programmes, it may have had a troubled birth: “Emerald has evolved to the point where it is now a stable system. The continual development of the system, new installations and the software upgrades arising from the standard operating environment of the Defence restricted network using new version of the database engine...require that continuing maintenance support services be provided to support Emerald capability and capacity”.

The maintenance and support requirement excludes immediate system help desk activities – designated by Defence as level one service desk activity – but does include provision of advanced assistance to the existing DLSS help desk for investigation and development of solutions to new issues – what Defence refers to as level two service desk activity. That level two support requirements includes development of work arounds, and development of help desk personnel skill sets. Typical contractor response times are estimated at up to 8hrs.

The contractor will be largely responsible for more advanced service desk functions – what Defence calls levels three and four support. This includes management and maintenance of the underlying Emerald system databases; analysis and resolution of production failures; technical investigations; database updates and revisions; and development of electronic user manuals.

The contractor will also be responsible for setting up new Emerald sites and creation of databases within the system for new users, and assist with the conversion of databases for other engineering management databases to work with the toolset. **APDR**

## NEC releases new ruggedised notebooks

NEC has released its new ShieldPRO ruggedised convertible notebook and tablet computer onto the Australian market and is offering full in-country support service at a state-based level.

The A\$4,600 plus GST recommended retail price units are being pitched at the defence market in parallel to the emergency services, mining and construction sectors.

NEC says the purpose developed units are water and dust resistant and “can withstand the ingress of dust at all levels and water from all directions”. The company also claims the computers will meet MIL and CENELEC industry standards.

NEC says the notebook have “one of the brightest 12.1-inch touch-panel LED backlit screens on the market – ideal for use under the harsh Australian

sun; [and are] rated to endure a 900mm drop – much higher shock ratings than its competitors. The computers use a magnesium ally case with rubber corners and seals.

The standard model weighs 2.5kg with eight-hour rated battery life. NEC says the design has a “low heat generation profile for optimised performance versus battery and heat dissipation”

NEC says laboratory and field tests have demonstrated an ability for the units to operate in temperatures ranging from minus 20 degrees C to 50 degrees C, and at altitudes of up to 15,000ft.

The core processor is an Intel Core Solo U1400 ultra-low voltage unit running at 1.2GHz. The operating system is Windows XP professional.

Two hard drive options are offered, a 60GB Serial ATA or 40GB Ultra ATA wide temperature hard-disk drive. **APDR**



# IDLS Ad (p43)



PETER LA FRANCHI SYDNEY

# EOS continues loss making but flags near term turn

The Australian Stock Exchange listed Electro Optic Systems has recorded pre-tax losses of A\$20.734 million for the full calendar year ending 31 December 2007 with revenues reaching just A\$38.716 million, down from A\$52.140 million in 2006.

The losses include provisions for the winding down of EOS operations in the United States after its loss of key contracts on the US army's common remotely operated weapon station [CROWS] programme. The company's latest annual report, released 21 April, says that ongoing investment in CROWS related technologies have since been written down by A\$9.6 million.

However, the company also says it intends to continue pursuing opportunities on the CROWS programme, with the US army expected to seek a second source for weapon stations from 2010. "EOS is actively re-positioning itself for future order. The first steps in this process were to downsize US operations substantially, vertically integrate US customer links into EOS itself, and specifically focus resources on the new customer requirements. These steps are being executed".

Revenue growth for the first half of 2008 is forecast at A\$23 million.

EOS says that remote weapon stations will remain a core market for the company with an active strategy in place to diversify its dependence on the US army.

It says that current and emerging US military requirements for remote weapons stations represent half the estimated global market. In turn the CROWS programme represents around 40 percent of all expected US military demand. The balance however, "is likely to be expressed through a variety of programmes initiated by army, navy, US air force and the US marine corps. These programmes will require a wide range of weapon system configurations to meet diverse operational requirements.

"EOS has the core technology and product

family to meet many of these requirements. These smaller programmes have different configurations from CROWS, and EOS is not disadvantaged by not having CROWS in volume production. The level of procurement activity in this segment will increase rapidly from 2009. To best address this market, EOS has continued to improve its key metrics for efficiency, especially for short production runs of 50-200 units".

A near term target is the US army 'Lightening' requirement. EOS says that "this US army programme is essentially a lightweight version of CROWS that is expected to be funded for production from 2009. The programme value for all versions will be US\$1.6 billion over five years. EOS is well-positioned for this programme. Competition will be at least as strong for CROWS in 2007".

EOS has undergone a major share price reduction since August 2007 after the US army awarded the primary CROWS contract to Kongsberg. EOS had been teamed with Recon Optical Systems for the requirement, and had received a series of US army developmental contracts between 2001-2006 to develop and design the basic CROWS configuration. A total of 500 operational CROWS systems were delivered by the company prior to the August 2007 downselect.

EOS shares declined substantially from August through until mid April this year when they bottomed at A\$0.26, but have since been rising in parallel to improved overall Australian market trends and broke A\$0.50 in early May.

The company finished 2007 with cash reserves of A\$12.614 million, but with A\$6.140 million of this held in escrow as guarantees on current contracts. Net cash used in operating activities in 2007 reached just A\$582,034.

New military orders received in 2007 totalled A\$46 million, with a total backlog at 31 December worth A\$56 million representing 18 months of production activity. "EOS is still aiming to increase this backlog - excluding US army programmes

- by 31 December 2008. This backlog is from diverse customers and for products not identical to CROWS. The EOS global business development and diversification efforts over the past 18 months have ended EOS dependence on CROWS for the viability of its military business".

EOS last year introduced three new configurations of remote weapon station with this including the EOS dual weapon [DW] variant. The annual report confirms that "this system has been ordered by an overseas customer and is now entering production. More orders are expected during 2008 for this unique system".

The company is preparing to productionise a new generation laser rangefinder, with this claimed to be capable of operating at ranges of 10km "which sets new industry benchmarks".

It is also continuing joint development work with Metal Storm and Singapore Technologies on the Redback weapon system with this "approaching the maturity level required for functional testing within 2008. This weapon system is intended to provide unique offensive and defensive capabilities to a wide range of vehicles and customer interest in a successful product will be strong".

The annual report says EOS's space systems business unit is being progressively re-focused to concentrate more on military space requirements, particularly optical gimbals, with no new commercial orders for astronomical telescopes secured during 2007.

It says that standing teaming arrangements with Northrop Grumman Space and Mission Systems for laser based space surveillance services and technologies are expected to result in small initial contracts being secured during 2008. Opening up of a commercial space surveillance market may also become a growth area with the annual report forecasting potential contracts this calendar year that would "if successfully concluded, lead to significant commercial activity by 2009". **APDR**



Bushranger barb: EOS and teaming partner Recon Optical are fitting Australian Army's Thales Bushmaster vehicles with RAVEN R-400 stabilized weapon mounts under ongoing contracts.

PETER LA FRANCHI SYDNEY

# Metal Storm files new losses

**M**etal Storm Limited has recorded a net loss of A\$9.998 million for calendar year 2007 with revenues of A\$3.205 million.

Total accumulated losses now total A\$77.782 million, up from A\$67.784 million at the end of CY2006.

The latest loss represents an A\$5.338 million improvement on the company's position at the end of CY2006, when it reported losses of A\$15.337 million.

In its latest annual report to the Australian Stock Exchange, released 22 April, the company advises its actual receipts from customers during the year totalled just A\$1.052 million, or almost half the A\$2.015 million achieved in CY2006. The remainder of revenues for CY2007 were generated from investment activities.

The company has current cash reserves of A\$14.727 million, down from A\$23.830 million at the end of 2006. Its non current asset base is valued at A\$1.718 million.

Metal Storm shares have undergone sustained devaluation over the past year, and particularly over the past six months, falling from A\$0.10 in late 2007 to bottom at A\$0.05 in mid April. It has averaged in the A\$0.055-A\$0.065 range on the back of the general market rally from late April onwards.

Writing in the annual report Metal Storm chairman Terry O'Dwyer says that share price reduction fails to match the company's assessment that 2007 has seen real gains in outlook: "To those who have seen the constant decline in the share price over that period it may not seem so, but the company is making progress on its strategy to develop one of its many potential applications and concentrate on its profitable delivery to market".

He confirms that Metal Storm strategy is now dominated by the company's 3G ammunition and Redback weapons system being jointly developed with Singapore Technologies and Electro Optic Systems. "The strategy is simple; show the capacity and capability of 3G and Redback with all the design and engineering issues solved for both the delivery system and the ammunition, and the market for every other product and application will be reachable."

Taking a defensive posture, O'Dwyer acknowledges that "those sceptical about the technology's value may view the length of development time and the dollars spent thus far

without a contract for products as demonstrating a defective technology or defective engineering and or defective design. The unstated but necessary assumption inherent in these sorts of negative assertions is that the time taken and the costs incurred are excessive. But any fair examination of the 'too long, too much' argument shows it is not well based.

"The time to achieve what has been done to date is about seven years. In that time the company has spent about A\$43 million. Consider this comparison: it is not uncommon for the cost of an upgrade to an already existing motor vehicle to be in the order of A\$400 million and to take upwards of three years to develop".

Metal Storm chief executive officer Dr Lee Finniear says the company anticipates three

***"any fair examination of the 'too long, too much' argument shows it is not well based."***

"major revenue streams going forward" over the near to medium term. This will initially be dominated by research and development contracts, mostly from the company's wholly owned US subsidiary Metal Storm Incorporated [MSI] via awards from the US army, the US office of naval research and the US Marine Corps warfighting laboratory.

Medium term growth will come from "higher margin, low volume sales of multi-barrel systems for niche applications, the delivery of which will not require dedicated manufacturing facilities. Finally the largest, but the most long term is the delivery of large volume products such as 3GL, MAUL and munitions where full scale manufacturing, production engineering and tooling is needed.

"MSI plays a lead role for the company for the first two revenue streams, and for the third MSI has an important role to play in developing the US market".

MAUL is an 18mm four shot accessory shotgun that can be fitted under the barrel of a standard



*Redback: Being cooperatively developed with Singapore Technologies and EOS.*

infantry assault rifle with initial development carried out under contract for the US Marine Corps.

Finniear says that the primary focus of activities for the remainder of 2008 will be the qualification of 3GL munitions in a cooperative arrangement with Singapore Technologies Kinetics that was signed in February this year.

The annual report reveals that the initial round of 3GL life testing last year found the Metal Storm ammunition tail piece design "required too many fine tolerance machined parts to be cost effective. Put simply, it would cost too much to manufacture, potentially making Metal Storm munitions too expensive to sell," Finniear writes.

"Over the last six months the engineering team has delivered a brand new tailpiece design, dropping manufactured cost by 80 percent while improving performance and in-field reliability. In my view the design is a work of art and while the re-design and re-testing delayed our progress, I am now confident that we have a practical, cost-engineered product to work with. It is this new design that we will take forward to qualification".

Finniear also confirms the collaborative agreement with Singapore Technologies Kinetics will support full scale productionisation of Metal Storm ammunition. It also covers using that firms' existing sales and distribution network "while keeping some key markets as Metal Storm exclusive sales territories. This is also important as Metal Storm itself does not have the channels to market its products in most countries". **APDR**

# A modern Australian foreign policy for a new era...

Australian foreign minister Stephen Smith has told an Australian Strategic Policy Institute's seminar in Sydney 9 April that a new foreign policy architecture requires an overturning of a number of core precepts that have dominated national security thinking over the past decade, including that of 'punching above our weight'.

**W**e came to office believing that Australia is a country with global interests, positive values and virtues, and a deep interest in the wellbeing of others. Against this background, the Government has a clear but simple starting point: for Australia to make the most of these characteristics.

We need to take every opportunity available to us in international affairs - working with major powers, globally, regionally, bilaterally and, importantly, taking much greater advantage of international institutions to make a positive contribution to international security and increasing the wealth and prosperity of nations.

If we fail to take advantage of these opportunities, no matter how difficult some may be, if we hesitate to step up, we will find our capacity to protect and enhance our national interest reducing, and our security and wellbeing declining.

National security is a broad and malleable concept these days. The traditional approach focuses narrowly on individual nation states and their conventional military assets and threats. In a modern, globalised world, this approach only represents one dimension of the challenge and does not encompass a range of factors relevant to a nation's security in the twenty first century.

Today, there is no doubt that factors like international terrorism, weapons proliferation -including the risk of nuclear, biological or chemical weapons falling into the hands of terrorists, transnational crime, including organised people smuggling, environmental degradation, energy security, health pandemics, or even just plain old fashioned poverty and inequality as a cause of instability, are all seen rightly in my view, as key factors affecting Australia's security, and more particularly, the personal safety and security of ordinary Australian citizens.

It is also a truism that internal and external threats to national security have blurred. Addressing these threats more often than not requires both an external and a domestic dimension. In Australia it demands the attention and resolve of the Commonwealth, State and Territory Governments.

The Australian Government is determined to look afresh at our strategic and national security challenges and how to respond to them. We need to adapt and respond to new challenges.

This century, a globalised world demands more than ever a committed and active bilateral, regional and multilateral diplomacy from Australia.

Or as the Prime Minister has said: active, creative middle power diplomacy.

You have often heard that expression: 'Australia punches above its weight'. Frankly, it's an expression I hate, largely because I don't believe that it has been true in the recent period!

As a good international citizen, Australia can and should do more in the

world. While we are only the 50th or so largest country in terms of population, we are in the top 15 largest economies. In terms of living standards measured by income per capita, we are among the top 20 countries and we are also among the top dozen military or peacekeeping spenders.

We are a significant and a considerable nation. We are a regional leader. We are not, however, a powerhouse. Regional and multilateral institutions work well for a nation like Australia.

Working internationally to strengthen the mechanisms of international order helps underpin Australia's safety and prosperity. Australia benefits immensely from a global and regional order based on principles, norms and rules which regulate relations between nation states...

We need to shape and help others shape a stronger, rules-based order for the modern world. A more stable secure international system is fundamentally in Australia's national interest.

It is why we are committed to the United Nations and have made a bid for a seat on the United Nations' highest decision-making body on international peace and security.

It is why we remain committed to the US alliance and to the system of US alliances in our region.

It's why we will do all we can to contribute to the evolution of security architecture in Asia and to build genuine partnerships in the Pacific.

This is what the new Australian Government is committed to, and determined to deliver on.

We have begun with certainty: in our first months we have ratified the Kyoto Protocol, responded strongly to the security crisis in East Timor, and outlined our approach to development challenges in the Pacific.

We plan to continue as we have started, by being a government of ideas, one that is prepared to contribute to the debate but more importantly to help shape it.

We want to be active and principled. We are clear-eyed about the challenges and steadfast in prosecuting our values and virtues as a nation.

It means helping those less well off than ourselves to tackle the poverty and despair that give rise to the modern terrorism, transnational crime environmental degradation and disease which challenge our national security.

It means helping to strengthen the institutions of governance and democracy in our region and the world. It means contributing fresh thinking to solving regional and global security challenges. And it means upholding the standards of civilised international behaviour, by being a good international citizen.

It means a modern Australian foreign policy, for a new era. **APDR**



*We are not... a powerhouse.*



# APDS Ad

## (p47)





# lockheed Martin Ad (p48)

