



The Cost of Defence

ASPI Defence Budget Brief 2006–07

Fifty-three million, seven hundred & fifty-one thousand, thirteen dollars & seventy cents per day.

Prepared by:
Mark Thomson
Program Director
Budget and Management

Top 24 Project Briefs compiled by:
Gregor Ferguson
Daniel Cotterill
Tom Muir
Editor and senior writers of Australian Defence Magazine

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Australian Strategic Policy Institute (ASPI)
Level 2, Arts House, 40 Macquarie Street
Barton ACT 2600
Australia

Tel: + 61 (2) 6270 5100
Fax: + 61 (2) 6273 9566
Email: enquiries@aspi.org.au
Web: <http://www.aspi.org.au>

Note on title:

The figure of \$53,751,013.70 represents one three-hundred-and-sixty-fifth of the total funds available to Defence for financial year 2006–07. This does not include funds appropriated to the Defence Housing Authority, those administered by Defence for military superannuation schemes and housing support services, nor the additional funds provided directly to the Defence Materiel Organisation.

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DIRECTOR'S INTRODUCTION

This is ASPI's fifth annual Defence Budget Brief. Our aim remains to inform discussion and scrutiny of the Defence budget and the policy choices it entails. As was the case last year, we will be producing a short Defence Budget Summary in the next couple of months.

This year we've included two new sections. The first deals with the Defence Housing Authority (DHA). We thought it was worth looking at how DHA operates because around 17,000 defence force personnel and their families rely on it for relocations and accommodation. The second new section looks at comparative defence economics by continuing the analysis started last year under the heading of 'Strategic Weight', this year we've called it 'Australian Defence Economics'. It looks at how Australia's military capability stacks up relative to our population and economic strength, and those of comparable countries.

This Brief has been the result of intensive cooperative work by many people, mostly over the past two weeks. An ASPI intern, Ms Alanta Colley, worked long and hard to make the Brief a reality and Ms Karla Bogaart from Optimum Business Consulting provided invaluable assistance on accounting matters and especially on the Defence Housing Authority.

Once again our colleagues from the Australian Defence Magazine have done a great job of capturing informative snapshots of the top 24 Defence projects. Many others have helped by providing comments, offering advice, and checking facts. Our thanks go out to them all.

Also, Defence was kind enough to look over a preliminary draft of this Brief and provide valuable comments. This helped clarify some important points and resulted in improved accuracy in many areas. Of course this does not in any way imply that Defence endorses this document or even supports its conclusions.

My colleague Dr Mark Thomson, who is the Manager of ASPI's Budget and Management Program, has once again pulled together the Brief in the short time available. For this I extend my sincere thanks. As always, responsibility for the judgements contained herein lie with Dr Thomson and me alone.

Lastly we should acknowledge that we at ASPI are not disinterested observers of the Defence budget. Our funding from government is provided through Defence at the rate of seven thousand one hundred and nine dollars and seventy-six cents (\$7,109.76) per day. Details can be found in our 2004-05 Annual Report.

Peter Abigail
Director

EXECUTIVE SUMMARY

This was a significant budget for Defence. The government finally agreed to continue the 2000 Defence White Paper commitment of 3% per annum growth in defence spending for another five years beyond the end of this decade. And there was also more money in the near term to expand and reshape the defence force.

Unfortunately, notwithstanding all the new money flowing into Defence in this budget, there is a mismatch between plans and funding. Put simply not enough money has been set aside in the future to operate our current equipment, let alone that which is now being purchased.

How much are we spending?	\$19.6 billion in 2006-07
	\$1.9 billion more than last year
	1.9% of GDP

Total Defence Funding for 2006-07 will be \$19.6 billion, which is an increase of \$1.9 billion on 2005-06. Continued growth is planned across the next four years with a budget of \$21.1 billion estimated for 2009-10. As a percentage of GDP the 2006-07 budget represents 1.94%. This will probably only erode a little over the next few years given predicted economic growth.

3% real growth continues	An extra \$10.7 billion from 2011-12 to 2015-16
	Funding spread across all areas of the budget
	Compound rather than average growth

The big news in the budget was that the government agreed to continue the 3% per annum real growth delivered by the 2000 White Paper from 2011-12 to 2015-16. This amounts to an extra \$10.7 billion over five years. Importantly, while the 2000 White Paper delivered *average* 3% growth, the extended commitment is built around a more generous *compounding* real growth. The funding is spread across all areas of the budget – not just investment in new equipment.

Plus an extra \$4.5 billion over 10 years including \$3.7 billion over 4 years	\$1.9 billion for C-17 strategic lift aircraft
	\$1.5 billion for a ‘Hardened and Networked Army’
	\$625 million of <i>accelerated</i> capital investment*
	\$623 million for ADF deployments
	\$560 million for personnel initiatives
	\$342 million for miscellaneous measures
	\$252 million to reactivate two minehunters
	\$661 million <i>less</i> due to savings measures

**accelerated funds over four years, net impact on 10-year total is -\$55 million due to inflation.*

Aside from the 3% funding post-2010-11, the major initiatives in the budget are:

- The purchase of up to four C-17 strategic lift aircraft at a cost of \$2.2 billion of which \$1.9 billion is being provided by the government and \$0.3 billion is being allocated from within Defence's existing investment budget. Each C-17 will have a carrying capacity four times larger than current ADF C-130 Hercules transports.
- \$1.5 billion over ten years for the second phase of the Hardened and Networked Army initiative. This will see the Army restructured into combined arms battle-groups and the addition of 1,485 more permanent personnel. The Army Reserve is also being revitalised through the creation of a high-readiness Reserve component that will be integrated with permanent units. And Army's existing parachute battalion is going to be moved from Sydney to South Australia and developed into a mechanised capability.
- \$625 million of previously deferred capital investment spending has been accelerated forward across the next four years in recognition of the improved performance of the Defence Materiel Organisation (DMO). This will hasten the delivery of the equipment contained in the Defence Capability Plan.
- \$623 million over three years for military operations, including \$393 million to continue operations in Iraq for another twelve months, and \$233 million for our continuing role in Afghanistan for two years. This brings the total cost of our role in the invasion, stabilisation and rehabilitation of Iraq to \$1.6 billion, with the corresponding figure for Afghanistan at \$840 million. This budget also included an extra \$12 million for coastal surveillance.
- \$560 million over the next ten years will be spent on a range of enhanced remuneration measures for both the active and high-readiness Reserve. These include additional allowances, health benefits and annual completion bonuses. In addition, \$194 million over four years will be spent to improve recruitment and retention and remediate the shortfall by hiring civilians to work in non-operational roles. The money for these initiatives will come from funds originally allocated for military personnel within the Defence budget.
- \$342 million over ten years will be spent on a range of measures including the redevelopment of the Mulwala munitions plant (\$131 million), defence communications (\$80 million), logistical funding for naval aviation (\$26 million) and charting of northern waters (\$19 million). In addition, \$213 million of investment funds earmarked for the new Joint Operations Command Headquarters has been handed back because the project will now be pursued as a private finance initiative.
- \$252 million over ten years has been provided to reactivate and operate the two mine hunting vessels withdrawn from service by the 2003 Defence Capability Review. The two vessels will now conduct coastal surveillance in the north.
- \$661 million will be cut over ten years through an efficiency dividend (\$405 million) and the hand back of \$256 million following the reorganisation of ADF command and control arrangements.

Is there enough money?	No. More money will be required or capabilities will have to be cut.
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On current plans, rising personnel costs and escalating investment levels look certain to squeeze the money available for operating costs from 2008-09 onwards. In part, this is due to a failure to continue around \$200 million per annum in logistical shortfall funding that was started in 2004-05. More generally, a significant number of new capabilities will arrive over the next several years placing extra pressure on scarce resources. Put simply, there is not enough money in the budget to operate all the equipment currently being purchased.

People	For three years in a row the size of the full-time ADF has fallen, at a time when the goal has been to grow the force.
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Despite spending \$500 million on initiatives to improve the recruitment and retention of military personnel over five years, the process of building up the size of the ADF has worse than stalled, it's gone backwards. In 2003-04 the average strength of the permanent ADF fell by 46 positions, in 2004-05 it fell by 221 and in 2005-06 it's projected to fall by another 624 positions. This adds up to a cumulative loss of 891 personnel over three years, at a time when earnest attempts have been made to grow the force. In both 2004-05 and 2005-06 the final result was around a thousand below target.

The problem is not spread evenly. Air Force is in the best position benefiting from the lowest separation rate in over a decade plus good recruitment. Navy and Army are in a less favourable situation. All Services are feeling the pressure in skilled trade areas where demand is high across the broader economy. Unless personnel numbers start to rise soon, the situation will become more difficult once the new capabilities being delivered through the Defence Capability Plan start to enter service.

Performance	There are signs that the extra recent funding Defence has received is making a difference in the delivery of capability.
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Over the past seven years the ADF has continuously done what was asked in demanding operational environments around the globe. But this has only ever involved a small part of the total force. We are entitled to ask just how ready for action the ADF as a whole is, especially given all the extra funds that have been provided in recent years.

The only real source of information we have are the Defence annual reports, which provide surprisingly detailed data on how well equipped, trained and prepared the ADF is. Here the picture is reassuring. After pretty static and unspectacular results in 2000-01 and 2001-02, performance in 2002-03 posted a solid improvement. This was

repeated again in 2003-04. In 2004-05 things levelled out somewhat – but at a reasonable level.

Defence Management	2004-05 Financial Statements qualified
	Defence Materiel Organisation reforms continue.

Once again, Defence's financial accounts were qualified. The qualification reflects the difficulty in valuing some of the vast inventory held by Defence, and more seriously, accounting for the quantities of some types of stores. A plan is now in place to remediate the financial statements, but it will take several years to fix the problem. While much of the problem with the accounts is of a technical nature, the recent Audit Office report on the procurement and management of explosive ordnance showed that there are some very real problems in how Defence manages billions of dollars of assets.

The reforms to Defence and the Defence Materiel Organisation (DMO) following the 2003 Defence Procurement Review continue. The acceleration of \$625 million of previously deferred capital investment money in this budget is a vote of confidence from the government that DMO can deliver.

How goes the Defence Capability Plan?	The process of approving new projects has stalled significantly.
	A new Defence Capability Plan (DCP) is due out in the next month or two.

One of the unintended impacts of the reforms flowing from the 2003 Defence Procurement Review is that the more stringent process of project approval is proving very time consuming. This has seen the approval of many of the projects in the 2004 version of the DCP delayed. With the next version of the plan due in a month or two, there's an opportunity to put things back on track.

What's next?	We need a funded long-term plan for the ADF.
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It makes no sense to spend billions of dollars on new equipment unless it's certain that there will be enough money to operate it. The current piecemeal cycle of investment followed by bids for additional personnel and operating costs is no substitute for coherent long-term planning.

While the current approach might seem workable in today's buoyant economic climate, it's a very risky proposition. Once the business cycle turns and demographic factors hit the government's bottom line, it will be a lot harder to come back and simply ask for more.

SECTION 1 – BACKGROUND

1.1 Strategic Context for the Budget

Thirty years ago, Defence policy was relatively straightforward, as the opening sentence of the Fraser Government's 1976 *Defence White Paper* shows: 'The first responsibility of government is to provide the nation with security from armed attack and from the constraints on independent national decisions imposed by the threat of such attack.'

The priority at that time was squarely on the physical defence of Australia, which was understandable for a nation adjusting to Nixon's Guam doctrine and trying to forget the Vietnam War. A lot has changed since then. And when the Howard Government reworked the 1976 gambit in its latest defence policy statement *Defence Update 2005* it came up with a much broader statement: 'The first duty of the Australian Government is to provide for the security and defence of Australia and Australian interests.'

While no single sentence can ever hope to capture a nation's defence policy, the differences between these two opening statements say a lot about how things have changed over the years and where policy sits today. Three things stand out:

First, armed attack no longer warrants an explicit mention. This is not simply a matter of wording. The main body of *Defence Update 2005* only briefly talks about the territorial defence of Australia in its introduction and conclusion, and nowhere in between. In fact, the *Update* reassures us that for the foreseeable future it remains unlikely that Australia will 'face conventional threats'. What used to be the overriding focus of Australia's strategic policy has – in the view of the *Update* – been relegated to little more than a perfunctory aside. In its place is a pair of competing priorities: Australia's role in the immediate region and its interests further afield on the global stage.

Second, security and defence rate separate and equal mention in the opening to the *Update*. In the sense they are used, they imply the equal importance of defending against traditional military threats and securing against non-traditional threats like terrorism, transnational crime, drug smuggling and unauthorised border crossing. Of course, one of the key features in recent years has been the melding between these two areas. This has seen an increasing whole-of-government response to many security problems and the involvement of the defence force in humanitarian assistance, domestic security and offshore Federal Police operations.

Third, in today's world it's not just Australia that needs to be defended (and secured) but also Australian *interests*. Indeed, if the *Update* has a theme it's 'Australian interests' – a forgivingly malleable term can and does mean many things. At the very least it includes the safety of Australians abroad and, to some extent, our various overseas economic, political, trade and financial relationships. More generally, the *Update* argues that our security interests are global and says that 'Australia's vital interests are inextricably linked to the achievement of peace and security in the Middle East'.

Whatever Australia's interests might be, two clearly stand out in understanding our recent military endeavours: the alliance with the US and the security of our local region. The reasons are simple. We cannot be secure unless we live in a secure region,

and we need a powerful ally to underwrite our security more broadly. Moreover, while we have many ‘interests’, most of them are shared problems that we cannot make a decisive difference to anyway. Not so with the alliance and the region – these are unique to us. That’s what elevates them from mere interests to responsibilities. None of this is new; it was explicit thirty years ago in our defence policy. What’s changed is that both the immediate region and the United States are more demanding now than at anytime since the 1960s.

In response, Australia is undertaking the most comprehensive and expensive military build-up since the mid-1960s. This has two threads: first, the force structure is being modernised and expanded, and second, the preparedness of the ADF for rapid deployment is being steadily improved along with its capacity for strategic mobility. What’s more, the ADF is now being used more often and in more diverse theatres than at any time over the past five decades.

In the process, it’s unavoidable that a balance has to be struck between our local and global interests. Finding this balance is likely to remain a key strategic challenge for Australia in the coming years.

Balancing the force of tomorrow

If *Defence Update 2005* made anything clear, it was that the old practice of developing military capabilities exclusively for the defence of Australia and the local region is over. The recently announced fleet of C-17 Globemaster transport aircraft is a case in point. While the aircraft will be useful within our neighbourhood, their RAAF designation as the ‘Responsive Global Airlift Capability’ clearly announces the intent. Developing a Hardened and Networked Army (HNA) that’s adaptable for up to ‘medium intensity warfighting in a coalition setting’, arguably falls into the same category – although some would disagree.

But, so far at least, initiatives like the C-17 and HNA are *in addition* to a Defence Capability Plan that remains focused on a balanced force capable of independent action in our local region. In fact, both the C-17 and HNA were explicitly funded above and beyond the 2000 White Paper commitment. Nothing has been sacrificed and the ADF has been strengthened – including for operations locally.

There are, of course, very active debates over other proposed capabilities – like the Joint Strike Fighter, larger amphibious vessels and air warfare destroyers – but these are generally *not* about deciding between a defence force optimised for local or global operations.

But there is a risk. The current fiscal and strategic environment enables and predisposes the government to invest in defence capabilities. We have no guarantee that these circumstances will persist for another five, let alone ten, years. Moreover, there are clear signs that the operating costs of the investments now being made are well beyond the capacity of the projected budget. If current plans turn out to be unaffordable – as occurred in 1991 and 2003 when cuts were made to the ADF – the danger is that the axe will fall on the basis of the timing of projects. Let’s hope that it’s not the JSF or some other critical capability that’s the next cab on the rank. Given the way in which defence financial and capability planning occurs, this is far from an ungrounded fear.

Balancing the force of today

While most military capabilities tend to be ‘dual use’ when it comes to local and global operations, one restriction cannot be evaded: no ship, plane or infantry unit can be in two places at the same time. Consequently, the balance between local responsibilities and global interests becomes most acute when we try to balance our commitment of forces on the ground.

The situation we find ourselves in at the moment is illustrative. We have around 1,600 personnel in and around Iraq, 200 (soon to peak at over 500) in Afghanistan, 400 in Solomon Islands and who knows how many on stand-by for East Timor. In absolute terms the numbers are small; less than 6% of the permanent force is beyond our borders. Yet we should not be complacent. The burden does not fall evenly across the force. We cannot be far from having a third of the Army’s regular infantry companies off shore. And, back at home, spare a thought for the planners, intelligence analysts, logisticians, and policy advisors that have to divide their attention among so many unrelated, disparate and often far-flung theatres.

Some of our current burden is unavoidable – when it comes to the region we have little discretion. If we don’t take care of business nobody else will. What about Iraq and Afghanistan? Our original plan was to contribute to the initial phase of operations and disengage before the messy job of stabilisation came around. As things played out, this was not achieved. Both Iraq and Afghanistan turned out to be much more challenging post-invasion than anticipated in planning, and we’ve been trying to help put things right. And on at least one occasion we increased our commitment in order to help a friend (Japan) maintain a contribution in difficult circumstances. But while each incremental increase in the size of our forces in Iraq and Afghanistan made good sense at the time; when we step back, we see that the scale and risk of our deployments is slowly but surely increasing.

That we find ourselves in this situation should perhaps not be surprising. We are operating in a new environment and feeling our way as best we can to become a so-called ‘global player’. What’s been missing is a principle to guide the nature and scale of our military contributions to coalition operations. *Defence Update 2005* discusses this issue but concludes little other than that a balance is needed.

We could do a lot worse than adopt a doctrine of ‘one major global operation at a time’. In the current situation, consolidating our contributions to Iraq and Afghanistan in one or the other location would double the resources we could devote to higher command, intelligence and policy, while at the same time delivering a greater capacity for force protection and independent national command on the ground. If we are to play a part in addressing shared global security issues, we need to work with our partners to employ our collective resources efficiently. This means not planting an Australian flag in every trouble spot around the globe.

Being more focused about our global contributions would allow us to marshal our resources to maximum effect on the ground, and free up capacity by removing duplication of effort in our management of coalition deployments. This would make it easier to balance our responsibilities close to home with our interests further afield. Getting to such a situation from where we are now would not be easy, but it would be worth it.

1.2 Defence Organisation and Management

Commonwealth Outcomes and Outputs Framework

The Defence budget is set out according to a framework of outcomes and outputs. This framework was introduced by the Commonwealth in 1999, and is applied to all Commonwealth agencies. It works like this:

- **Outcomes** are the results or benefits that the Commonwealth aims to deliver to the community through the work of its agencies. They are specified for each agency, and are meant to express the purpose or goal of each agency's activities.
- **Outputs** are the goods and services that each agency produces to achieve its outcomes.

Under the framework, the performance of agencies is measured to assess both how much output they are generating, and the extent to which that output is actually delivering the outcomes intended. So the aim is to show not only how much an agency is *doing*, but how much it is actually *achieving*.

The outcomes and outputs framework is not just an accounting device. It is intended to provide a structure for management decision-making and resource allocation throughout Commonwealth agencies. So the way the framework is applied in an agency like Defence is very important to its management and performance.

The Defence Outcomes

The key to the effective application of the framework is the specification of the outcome or outcomes. Prior to the 2003-04 budget the government had set down only one outcome for Defence, that being: *The Defence of Australia and its National Interests*.

Since then, the government has maintained seven outcomes for Defence:

1. Command of Operations in Defence of Australia and its Interests
2. Navy Capability for the Defence of Australia and its Interests
3. Army Capability for the Defence of Australia and its Interests
4. Air Force Capability for the Defence of Australia and its Interests
5. Strategic Policy for the Defence of Australia and its Interests
6. Intelligence for the Defence of Australia and its Interests.

And a seventh outcome covering primarily superannuation payments for current and former Australian Defence Force (ADF) personnel, and housing subsidy provided under the Defence Force (Home Loans Assistance) Act 1990:

7. Superannuation and Housing Support Services for Current and Retired Defence Personnel.

Defence Outputs

The presentation of Defence outputs has changed a number of times since the outcomes and outputs framework was introduced in 1999, and a survey of past output structures can be found in the 2002-03 ASPI Defence budget brief. In 2003-04, what were previously termed Sub-Outputs were almost one-for-one elevated to the status of Outputs grouped under the revised Outcomes. This was a very positive step forward in providing visibility of how the Defence budget is spent. Table 1.2.1 lists the current Outcomes, Outputs and their net costs for 2006-07.

Table 1.2.1: Defence Outputs and Sub-Outputs 2006-07

Outcome	Output	Cost \$m
1. Defence Operations	1.1 Command of Operations	433
	1.2 Defence Force Military Operations and Exercises	600
	1.3 Contribution to National Support Tasks	21
	subtotal	1,014
2. Navy Capabilities	2.1 Capability for Major Surface Combatant Operations	1,572
	2.2 Capability for Naval Aviation Operations	598
	2.3 Capability for Patrol Boat Operations	311
	2.4 Capability for Submarine Operations	724
	2.5 Capability for Afloat Support	295
	2.6 Capability for Mine Warfare	399
	2.7 Capability for Amphibious Lift	422
	2.8 Capability for Hydrographic and Oceanographic Operation	294
	subtotal	4,616
3. Army Capabilities	3.1 Capability for Special Operations	534
	3.2 Capability for Medium Combined Arms Operations	938
	3.3 Capability for Light Combined Arms Operations	978
	3.4 Capability for Army Aviation Operations	591
	3.5 Capability for Ground-based Air Defence	125
	3.6 Capability for Combat Support Operations	440
	3.7 Capability for Regional Surveillance	157
	3.8 Capability for Operational Logistic Support to Land Forces	588
	3.9 Capability for Motorised Combined Arms Operations	594
	3.10 Capability for Protective Operations	980
	subtotal	5,905
4. Air Force Capabilities	4.1 Capability for Air Combat Operations	1,593
	4.2 Capability for Combat Support of Air Operations	954
	4.3 Strategic Surveillance & Response Operations	1,181
	4.4 Capability for Air Lift Operations	1,108
	subtotal	4,838
5. Strategic Policy	5.1 International Policy, Activities & Engagement	179
	5.2 Strategy Policy and Military Strategy	45
	subtotal	224
6. Intelligence	6.1 Intelligence	467
Total		17,063
7. Superannuation and Housing Support Services for Current and Retired Defence Personnel		1,896

Performance Targets and Measurement for Outcomes and Outputs

A key purpose of the outcomes and outputs framework is to provide a basis for setting targets and measuring performance. Recent output performance is detailed in Section 2.5 of this brief.

Defence's Outputs and its Organisational Structure

The traditional concept of Defence's organisational structure is that it consists of three Services – Army, Navy and Air Force – and the Department of Defence. This impression is reinforced by the outcome structure, focused as it is on Army, Navy and Air Force capability outcomes. But, in fact, the Defence organisation is not organised like this at all. It is divided into fifteen 'Groups'; these are the entities between which the Defence budget is divided. The arrangement of these Groups is set out in Figure 1.2.2.

These Groups and their executives are responsible for spending Defence's money and doing its business. Consequently, it is within the group structure that financial accountability occurs. The breakdown of the price of the Defence Outputs across the fifteen groups for 2003-04 through to 2005-06 appears in Table 1.2.2. No prior comparable data is available. DMO now receives its funds via purchaser provider agreements with other Defence groups, hence the absence of direct funding in 2006-07. Put simply, the Services now 'buy' equipment and sustainment from DMO and are funded to do so.

Table 1.2.2: Defence Group contributions to the cost of the Defence Outcomes

	2003-04 \$ million	2004-05 \$ million	2005-06 \$ million	2006-07 \$ million	2006-07 % of total
Output Executives					
CJOC/VCDF (HQAST in 2003-04)	137	412	329	367	2.1%
Navy	1,286	1,333	2,115	3,145	18.4%
Army	2,370	2,407	2,632	3,443	20.2%
Air Force	1,389	1,459	2,212	3,277	19.2%
Intelligence	311	345	367	362	2.1%
Strategic Policy	136	130	127	127	0.7%
<i>Subtotal</i>	5,629	6,086	7,783	10,721	62.7%
Owner Support Executives					
Defence Personnel Executive	702	649	634	600	3.5%
Defence Science and Technology	292	306	310	328	1.9%
Capability (VCDF in 2003-04)	51	26	25	48	0.3%
Chief Finance Officer*	338	374	354	340	2.0%
Chief Information Officer	25	57	517	489	2.9%
Secretary/CDF Force	4	27	28	32	0.2%
Inspector General	11	12	14	13	0.1%
<i>Subtotal</i>	1,436	1,451	1,882	1,850	10.9%
Enabling Executives					
Defence Materiel Organisation	4,841	4,999	3,226		
Corporate Services and Infra.	2,580	2,958	2,300	2,424	14.2%
<i>Subtotal</i>	7,421	7,957	5,526	2,424	14.2%
Portfolio	-35	252	805	2,068	12.1%
TOTAL	14,452	15,747	15,997	17,063	100%

Source: 2003-04 PAES, 2004-05 PAES, 2005-06 PBS and 2006-07 PBS (No actual figures are available from DAR).
 * Chief Finance Officer Group centrally manages Defence's Fringe Benefits Tax (FBT). In 2004-05 FBT was \$305 million.

The Groups are divided into three categories:

- **Output Executives Groups** are (mostly) responsible for delivering Defence's outputs to the government as customer;
- **Owner Support Executives Groups** are responsible for protecting the government's interest as the owner of Defence, including ensuring its long-term viability; and
- **Enabling Executives Groups** are responsible for providing business services such as asset management to the other two types of groups.

Note that in 2006-07 a total of \$2,068 million remains in a portfolio fund yet to be allocated. This includes funding for budget measures that cannot be allocated until after the budget is released and money needed to meet future pay rises for military and civilian personnel.

Unfortunately, spending in one group generally contributes to a number of different Outcomes/Outputs, so that there is no one-to-one mapping of the Groups into the Outcomes or Outputs. Table 1.2.3 gives the allocation of the individual Outcome costs to the groups.

Table 1.2.3: Defence Group contributions to the price of the Defence Outcomes for 2006-07

	Outcome Net Cost \$m						Total
	1	2	3	4	5	6	
Output Executives							
CJOC/VCDF	141	47	133	44	0	0	367
Navy	0	3144	0	0	0	1	3145
Army	130	0	3313	0	0	0	3443
Air Force	20	16	18	3207	10	6	3277
Intelligence	1	8	14	8	0	330	362
Strategic Policy	0	0	0	0	127	0	127
Owner Support Executives							
Defence Personnel Executive	20	139	262	156	11	11	600
Defence Science and Tech	39	81	56	107	23	23	329
Capability	5	11	12	14	3	2	48
Chief Finance Officer	18	79	158	77	3	5	340
Chief Information Officer	24	106	205	140	6	8	489
Secretary/CDF	1	10	10	9	1	1	32
Inspector General	0	4	4	4	0	0	13
Enabling Executives							
Defence Materiel Organisation							
Corporate Services and Infra.	104	580	1052	607	24	57	2424
Portfolio funds	511	390	667	464	15	21	2068

Source: 2006-07 PBS

ADF command structure

It is important not to confuse the day-to-day management of the Department of Defence with the command of military operations. The former occurs through the diarchy and group/output arrangements discussed earlier, the latter is exercised through a formal command chain and dedicated headquarters structure. In this parallel arrangement, units are temporarily re-assigned from the Services to be commanded on operations and exercises as required.

In early 2003 the ADF command arrangements were revised through the creation of Joint Operations Command under the Chief of Joint Operations who also happens to be the Vice Chief of the Defence Force. In this rearrangement, Headquarters Australia Theatre became part of the Joint Staff. Figure 1.2.1 refers.

Figure 1.2.1: ADF command structure

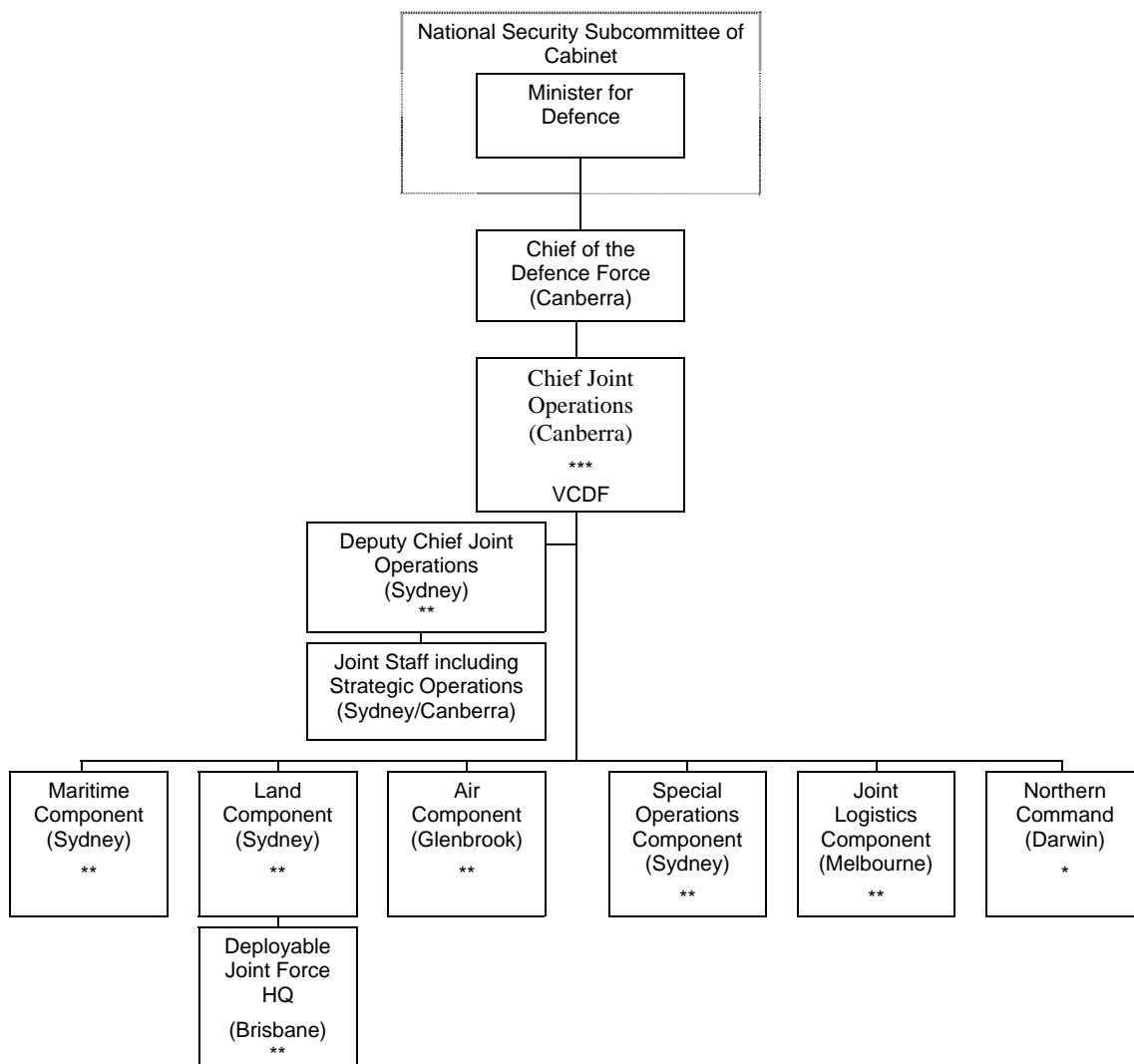
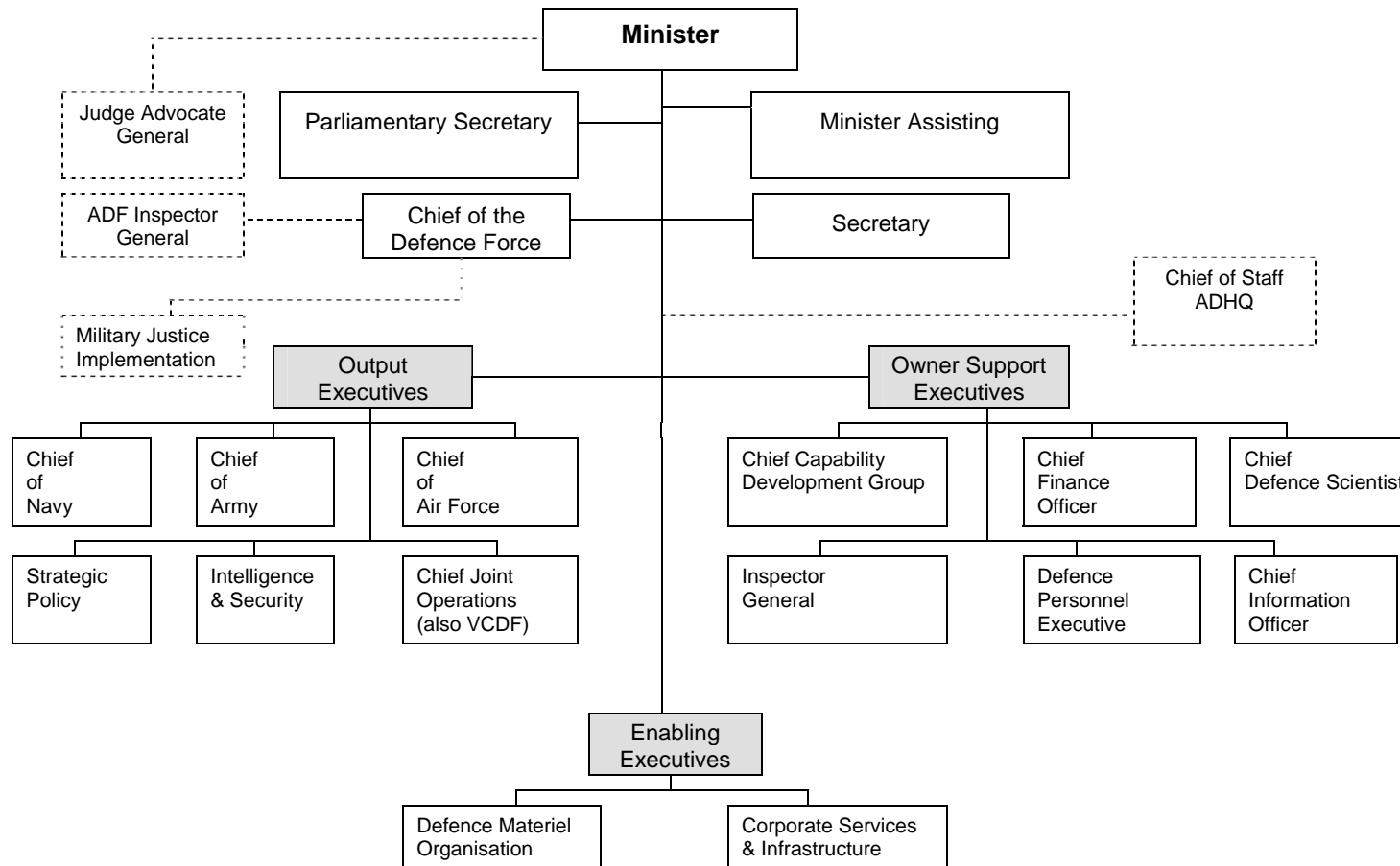


Figure 1.2.2: Defence organisational structure May 2006



Note: As of 1 July 2006 a new organisational structure will be implemented, see Section 3 of this Brief.

1.3 National Security Spending

Prompted by the events of 9/11, it's now recognised that no single agency has the capacity, or range of capabilities, necessary to ensure our security. The threat of terrorism in Australia, and to Australians abroad, has forced a whole-of-government approach to national security at the Federal level¹. Even beyond the threat of terrorism, it's increasingly recognised that our national security interests are best served by a coordinated approach that uses all the levers available to government.

It's beyond the scope of this Defence budget brief to analyse and explain the budgets of all the agencies that contribute to national security. Instead, we'll content ourselves with a broad-brush description of how much is spent in key agencies. If nothing else, it provides a useful yardstick to gauge what's spent on defence. Unfortunately, because of the difficulty in finding data, our discussion excludes spending at the state and local level.

A number of Federal agencies can make a credible claim to delivering some part of our national security. In selecting agencies, we have taken a liberal view of what constitutes national security, although we have excluded funding for Outcomes within agencies that are clearly unrelated. For example, we've excluded the funding provided to Immigration and Multicultural and Indigenous Affairs Portfolio that goes towards indigenous affairs. Here's our list in alphabetical order:

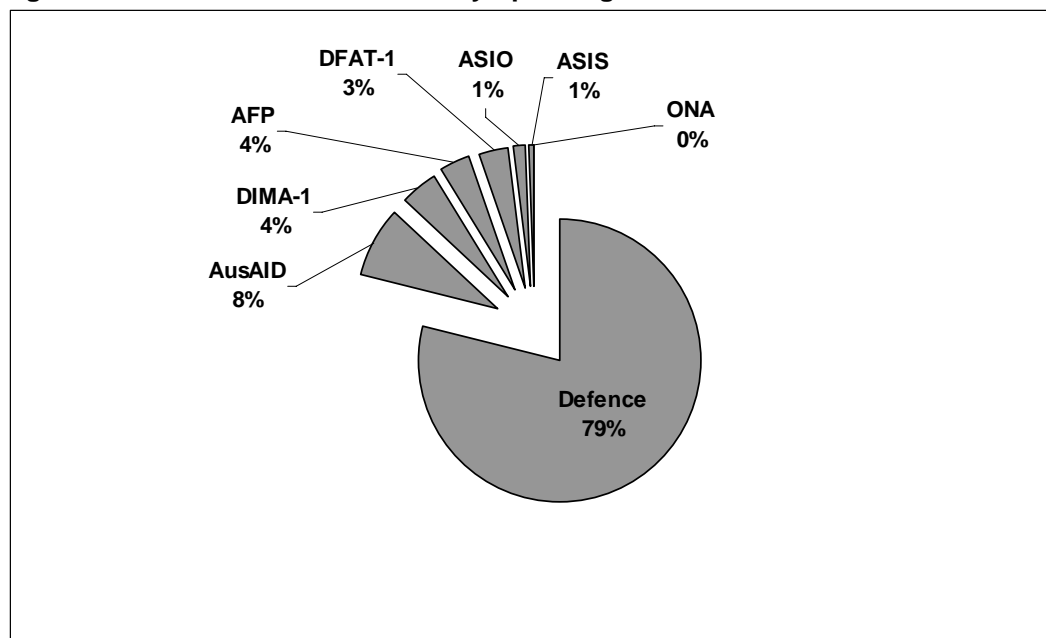
- Australian Federal Police (AFP)
- Australian Agency for International Development (AusAID)
- Australian Secret Intelligence Service (ASIS)
- Australian Security Intelligence Organisation (ASIO)
- Department of Defence (DOD)
- Department of Foreign Affairs and Trade (Outcome 1: *Australia's national interests protected and advanced through contributions to international security, national economic and trade performance and global co-operation.*) (DFAT-1)
- Department of Immigration and Multicultural Affairs (Outcome 1: *Contributing to Australia's society and its economic advancement through the lawful and orderly entry and stay of people.*) (DIMA-1)
- Office of National Assessments (ONA)

Clearly, some of the activities of the listed agencies (even with the restriction to specific Outcomes) go beyond national security. Conversely, other agencies that have been left out, like the Australian Customs Service, make a significant contribution to

¹ See 'Protecting Australian against Terrorism', Australian Government, 2004, available at www.pmc.gov.au.

national security within their broader range of responsibilities. Such is the challenge of dealing with the aggregate data available in the budget papers. Figure 1.3.1 compares the appropriations allocated to each of the aforementioned agencies in 2005-06.

Figure 1.3.1: Federal National Security Spending



Source: 2005-06 Budget Paper No. 2 – operating expenses plus capital

At the risk of stating the obvious, Defence dwarfs all other Federal areas of spending that contribute in some way to national security. This is despite the fact that many agencies (in particular, ASIS, ASIO and ONA) have received large boosts to their funding post 9/11 as Table 1.3.1 below shows. Note: there are extraordinary factors in AusAID spending including an extra billion dollars in aid to Indonesia in 2004-05.

Table 1.3.1: Federal National Security Appropriations 2001-02 to 2005-06

	2001-02 \$ m	2002-03 \$ m	2003-04 \$ m	2004-05 \$ m	2005-06 \$ m	2006-07 \$ m	5-year % Increase
Defence	13,725	14,635	15,286	16,156	17,254	19,001	38.4%
AusAID	1,854	1,962	1,588	3,301	1,596	1,887	1.8%
DIMA-1	829	814	866	810	907	1,037	25.1%
AFP	523	391	609	777	968	885	69.3%
DFAT-1	660	701	709	774	717	740	12.2%
ASIO	69	90	98	161	187	341	393.6%
ASIS	54	59	80	89	100	131	143.3%
ONA	7	8	11	18	28	28	300.0%

Source: 2002-03 to 2006-07 Budget Paper No. 2 – Schedule 1 & 2

Post 9/11 spending on security

For four budgets in a row, the government has bolstered Australia's security in the areas of intelligence, counter-terrorism response, protective measures and regional cooperation on security as shown in Table 1.3.2 overleaf.

Table 1.3.2: The Estimates cost of 9/11 to the Australian Government 2001 to 2010

\$ million	1	2	3	4	5	6	7	8	9	10	Total
	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	
Domestic Security 2002-03											
Aviation Security	20.7	40.2	40.9	47.3	41.1						190.2
Identification of Threats	6.9	110.9	117.7	136	154.5						526
Capacity to Respond to Threats	31.9	113.7	82.4	66.4	70.8						365.2
Capital	70.9	26.8	50.2	54.3	24.4						226.6
sub total											1,308
estimated rollover from 2002-03						290.8					291
MYEFO		103									103
A Safer Australia 2003-04											
Safeguarding Infrastructure			43.2	24.8	11.7	12					91.7
Protective Guarding			60.1	41	5	5.2					111.3
Enhanced Intelligence			73.2	16.4	14.7	14.6					118.9
sub total		28.7									351
rollover from 2002-03 and 2003-04							364	364	364	364	1,456
MYEFO			143								143
Australia's Security 2004-05											
Strengthened Intelligence				65.5	68.1	66.5	69.9				270
Building our Response Capability				24.4	5.5	5.3	5				40.2
Protective Security			46.1	73.1	30.5	32.5	25.1				207.3
Securing our Borders				51.9	35.6	30.1	32.7				150.3
Regional Security Cooperation				29.3	19.6	19.3	18.8				87
sub total											755
estimated rollover from 2004-05								151.5	151.5	151.5	454.5
Australia's Security 2005-06											
Strengthening intelligence					33.1	49.5	90.3	66.3			239.2
Building our response capability					5.7	7.9	6.9	5.6			26.1
Protective security					146.4	214.1	93.3	67.7			521.5
Securing our borders					24.5	42.1	25.8	19.9			112.3
Regional Security Cooperation					16.4	12.1	16.7	15			60.2
sub total											959.3
estimated rollover from 2005-06									174.5	174.5	349
MYEFO					324						324
Preventing Terrorism 2006-07											
Intelligence						163.2	179.9	175.7	213.2	176.3	908.3
Incident Response						40.28	44.39	43.35	52.62		180.6
Protective Security						87.88	96.86	94.59	114.8		394.1
Border Protection						3.991	4.399	4.296	5.214		17.9
Regional Security Cooperation						18.85	20.78	20.3	24.63		84.56
sub total											1586
estimated rollover from 2006-07										197.3	197.3
a Total											8,276
Afghanistan Deployment	320	199	-5		94.6	124.5	102.9	27.3			863.3
Iraq Deployment		285.3	240.6	284.9	390.3	347.4	71	15.6			1635
b sub total											2498
AusAID Afghanistan	26.6	21.5	23.7	19.7	18.5	33.9	33.9	33.9	33.9	33.9	279.5
AusAID Iraq		58.2	44.1	26	22.5	357	0	0	0	0	507.8
subtotal	26.6	79.7	67.8	45.7	41	390.9	33.9	33.9	33.9	33.9	787
a+b+c Grand Total											11,562

Source: Budget Paper No 2, 2002-03, 2003-04, 2004-05, 2005-06. All measures extrapolated past last know value except for operational deployment costs and aid.

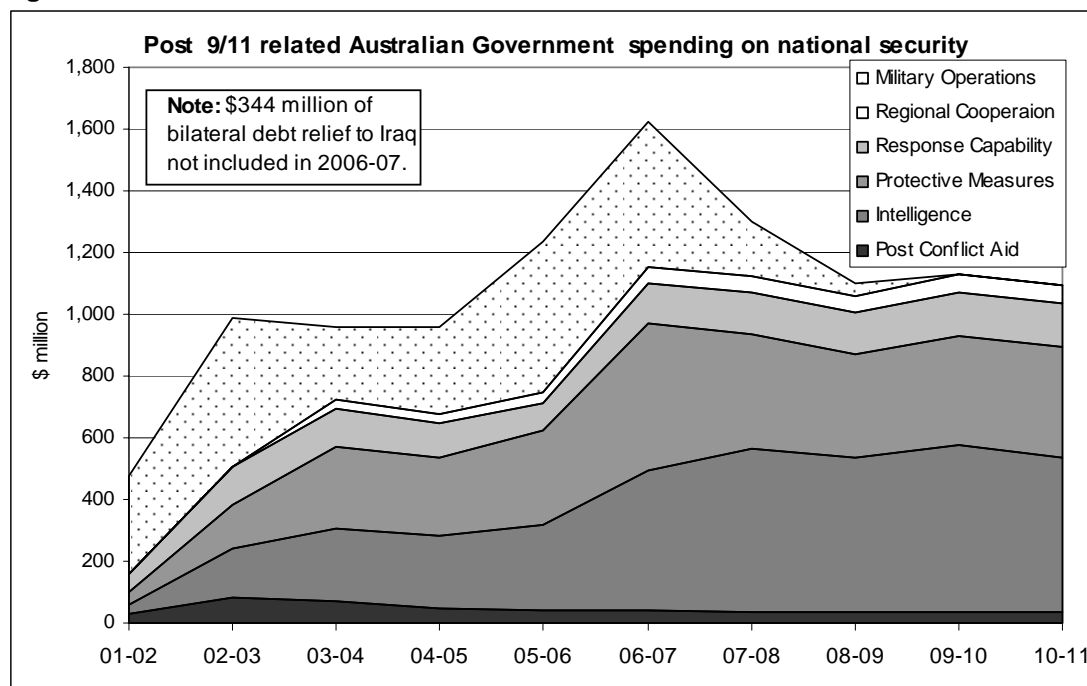
The vast bulk of the security related spending has been in response the threat of terrorism revealed by 9/11 and the Bali bombing. In addition, we have fought one war as a direct result of 9/11 (Afghanistan), and arguably fought a second that would probably not have occurred without 9/11 (Iraq).

Exclusive of military operations, the total expenditure on post-9/11 security initiatives extrapolated across the decade amounts to \$8.3 billion. Adding to this the cost of Afghanistan (\$863 million) and Iraq (\$1.64 billion) yields a total of \$10.8 billion. Add to this the cost of aid to Iraq (\$508 million) and Afghanistan (\$280 million) and you get a total of \$11.6 billion for the decade. Of course, this does not include spending by state governments or the impact on businesses and individuals. Nor have we included the very substantial funds devoted to border protection in 2001-02 and 2002-03.

Setting aside the cost of military operations in Afghanistan and Iraq, Defence received only a limited slice of the money directed to enhanced security. In fact, across the decade, Defence was only allocated around \$1.8 billion, or around one sixth of the total exclusive of the cost of military operations. What money Defence did get, went towards counter-terrorism response and intelligence capabilities.

To get a picture of where the money has been spent, it's useful to divide the total funds into six categories: military operations, regional cooperation, counter-terrorism response, protective measures, intelligence and post-conflict aid. Our estimate of the year-by-year allocation of money to these categories is given in Figure 1.3.2. In terms of the enduring impact of the initiatives, around a billion dollars has been added to the budget. Interestingly, the largest ongoing cost is in the area of intelligence.

Figure 1.3.2: The cost of 9/11 to the Australian Government



Source: Budget Paper No 2, 2002-03 to 2006-07 (and Table 1.3.1 on previous page).

SECTION 2 – DEFENCE BUDGET 2006–07 PBS EXPLAINED

The 328 pages of the 2006–07 Defence Portfolio Budget Statements (PBS) sets out the government's plan for the expenditure of over \$19.6 billion by Defence in the coming financial year.

This guide explains and, where possible, analyses the information in the PBS. In doing so, we skim over those parts of the PBS that are relatively clear, and focus on those areas where explanation might be useful. Fortunately this task has been made easier by continuing improvements to the PBS that make them clear and comprehensive than any before.

Some of the material is unavoidably technical due to the disciplines and complexities of accounting. However, it is not necessary to read this section as a whole, or in sequence, to gain insight. Every attempt has been made to enable the reader to jump in and look at those items of most interest. The more technical accounting material has been relegated to Section 9.

This brief does not cover in any detail the funds administered by Defence on behalf of the government for superannuation and housing support services for current and retired Defence personnel.

Most parts of the guide are best read with the PBS at hand. Copies can be downloaded from the web at <<http://www.defence.gov.au/budget/>>.

Section 2.1: Overview [PBS Chapter 1]

The overview chapter of the PBS begins with a brief discussion of the key points of the budget including, most importantly, the decision to continue 3% real growth in Defence spending out to 2015-16. This is followed by a short summary of the status of Defence White Paper funding. We examine the progress made in delivering the White Paper, along with the consequences of maintaining 3% real growth for the next decade, in Section 4 of this Brief.

Chapter 1 of the PBS then recaps the key points of the government's strategic guidance as set out in the *2000 White Paper* and *Defence Updates 2003 & 2005*, before devoting two pages to list the major combat elements of the ADF. Finally, the chapter presents wiring diagrams for the current and planned (post July 1 2006) Defence organisational structure. We explore these changes in Section 3 of this Brief.

Section 2.2: Resourcing [PBS Chapter 2]

The 'rubber hits the road' in Chapter 2 of the PBS, in terms of allocating money to get things done. It contains the financial statements, new budget measures and the funding bottom line.

How much money will Defence get?

With the Budget Summary on p.20 of the PBS, we get to the heart of the issue. Table 2.1 of the PBS gives three key figures for the Defence budget:

- **Total Revenue from Government**, being those funds formally *appropriated* to Defence by the government for departmental purposes. In 2006-07 this amounts to \$19,001,283,000.
- **Total Departmental Funding**, being those funds actually *available* to Defence including appropriations and revenue from other sources. In 2006-07 this amounts to \$19,619,120,000.
- **Total Defence Resourcing**, being Total Departmental Funding plus those funds appropriated administratively through Defence for superannuation and defence housing subsidies. In 2006-07 this amounts to \$22,251,120,000.

Of these three figures, Total Departmental Funding is the most useful. It represents the funds available to Defence to deliver the six departmental outcomes and maintain the ongoing program of investment in new equipment and facilities. It is also the figure commonly used to measure movements in Defence's funding and is therefore the one we shall focus on for most of this brief. It does not include the administered funds covered by Outcome 7. To streamline the discussion we shall henceforth refer to Total Departmental Funding simply as 'Defence funding' where no ambiguity occurs.

Several other measures of the Defence budget arise within the complexities of the Commonwealth finance framework. Three that can be useful when trying to understand Treasury budget papers (or the graph of defence spending in the Treasurer's Budget Overview) can be found on page 219, Chapter 7 of the PBS which

also contains the formal Budgeted Financial Statements. These won't concern us further except for the Underlying Cash Balance Impact that is relevant to calculating both the percentage of GDP and percentage of government payments.

The mechanism through which Defence receives its funds is somewhat complex, so a detailed explanation appears in conjunction with the discussion of the financial statements in Section 9 of this brief.

With the decolusion of DMO as a prescribed agency (see Section 2.7 of this brief), a small amount of revenue that would have previously been received by Defence through appropriations (\$45.5 million), and external funding (\$68.2 million) has been transferred to DMO. In terms of Total Departmental Funding, this adds \$113.7 million to the figure for Defence plus DMO yielding a revised total of \$19,732.8 million. To avoid confusion, and to remain consistent with the spirit of the Defence DMO de-merger, we will henceforth examine the funding of the two agencies separately. In any case, the amount involved does not make a significant difference to the growth rates and other metrics that we calculate.

How much has the Budget grown?

Table 2.2.1 displays Defence funding for the past six, and next four, financial years. Also shown are both the nominal and real year-to-year percentage growth rates.

Table 2.2.1 Total Defence Funding – real (2006-07\$) and nominal growth

	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Funds (nominal)	12,445	12,648	14,501	14,738	15,873	16,748	17,752	19,619	19,636	20,011	21,111
Growth (nominal)		1.63%	14.65%	1.64%	7.70%	5.51%	6.00%	10.52%	0.09%	1.91%	5.50%
Funds (real)	15,822	15,388	17,253	16,993	17,665	17,939	18,196	19,619	19,432	19,652	20,314
Growth (real)		-2.74%	12.12%	-1.51%	3.96%	1.55%	1.43%	7.82%	-0.95%	1.13%	3.37%

In calculating the real growth rate, the nominal dollar values of the individual years have been converted to a single base year using the deflator used to maintain Defence buying power in real terms. Since 2001-02 this has been the implicit Non-Farm GDP Deflator (NFGDPD). Specifically, we have used the historical Defence deflator for the first two years, and the actual and Treasury-projected NFDGPD up to 2006-07. Beyond that we used the deflators implied in Table 2.2 of the PBS (1.1%, 0.8%, 2.1%) there being no official public estimates past 2006-07.

In Table 2.2.1, the average *linear* annual rate of real growth in the budget from 2000-01 (last year prior to the White Paper funding period) to 2009-10 is 3.56%. The average *compounding* annual rate of real growth in the budget for the same period is slightly less at 3.14%. We explore the rate of growth in the defence budget due to the White Paper, and the latest 3% boost past 2010-11, in Section 4 of this brief.

What is the Defence share of GDP?

Table 2.2.2 gives Defence funding as a percentage of GDP calculated in two different ways. The first column shows Total Departmental Funding as a percentage of GDP

and the second column shows the Underlying Cash Balance Impact of Defence funding as a percentage of GDP. The latter accords with government financial statistics conventions used by the Australian Bureau of Statistics and may provide a better measure for international comparison.

Table 2.2.2: Defence Spending as a Percentage of GDP

Year	Total Departmental Funding % of GDP	Underlying Cash Balance Impact % of GDP ¹
1999-00	1.93%	not available
2000-01	1.83%	not available
2001-02	1.97%	not available
2002-03	1.88%	not available
2003-04	1.89%	not available
2004-05	1.87%	not available
2005-06	1.86%	not available
2006-07	1.94%	1.72%
2007-08	1.87%	not available
2008-09	1.82%	not available
2009-10	1.83%	not available

¹ Using data from 2006-07 Budget Overview page 33 and 2006-07 PBS page 220. Note: prior results for total departmental funding have changed due to a revision of GDP for those years.

What is the Defence share of Commonwealth payments?

Defence spending as a percentage of total Commonwealth payments is shown in Table 2.2.3, again in terms of both Total Departmental Funding and Underlying Cash Balance Impact. In terms of the former, the percentage is slowly falling in the future.

This falling trend may accelerate in the future as government spending increases, especially as Australia's aging population begins to place greater demands on health and social security. But this is a problem for the coming decades, not the forward estimates period.

Table 2.2.3: Defence Spending as a Percentage of Commonwealth Payments

Year	Total Departmental Funding % Commonwealth Cash Payments	Underlying Cash Balance Impact ¹ % Commonwealth Cash Payments
1999-00	8.13%	not available
2000-01	8.15%	not available
2001-02	8.85%	not available
2002-03	8.72%	not available
2003-04	8.85%	not available
2004-05	8.80%	not available
2005-06	8.55%	not available
2006-07	8.99%	7.98%
2007-08	8.65%	not available
2008-09	8.43%	not available
2009-10	8.45%	not available

¹ Using data from 2006-07 Budget Overview page 33 and 2006-07 PBS page 220. Note: prior results for total departmental funding have changed due to a revision of GDP for those years.

The 2006-07 Budget Measures and Adjustments [PBS p. 21 – 29]

Changes to this year's Defence budget are set out in the PBS. The changes fall into two categories: budget measures and budget adjustments. The formal distinction between budget measures and budget adjustments is that the former are detailed in the Treasury budget papers and the latter are not. In practice, the distinction is variable, with identical items classified differently from one year to the next.

There are twenty-two budget measures and three budget adjustments in this year's budget. All but one of these is detailed on pages 21 to 29 of the PBS. The other appears only in Treasury's Budget Paper Number 2 because it involves a redirection of funds within Defence rather than an appropriation of additional funds. There were no budget measures or adjustments for DMO in this year's budget, so the remainder of this section will focus on Defence.

Does it all add up?

In principle, if we take the forward estimates from the last PBS and add the new budget measures and adjustments that have been made since then, we should get this year's budget figures. Of course, this also requires taking account of shifts to own-source revenues and capital receipts that also contribute to Total Defence Funding (see Section 9 of this Brief).

Table 2.2.4 shows the various contributions that have gone into making up the new Defence's funding.

Table 2.2.4: Changes to Total Departmental Funding (million \$)

	2006-07	2007-08	2008-09	2010-11
2005-06 PAES	18,221.6	18,796.8	19,498.0	
Budget Measures & Adjustments	1,270.1	712.6	386.7	273
Shift in Own Source Revenue	109.9	109.3	108.8	
Shift in Capital Receipts	17.4	17.4	17.4	
Implied 2006-07 Funding	19,619.1	19,636.1	20,010.8	
2006-07 PBS	19,619.1	19,636.1	20,010.9	21,111.4
Difference	0.0	0.0	0.0	

Source: 2005-06 PAES and 2006-07 PBS. Numbers may not add due to rounding.

More than fifteen billion dollars over ten years

Usually, the PBS only deal with funding within a four year period. However, this year, the financial impact of the budget measures has been laid out across the coming decade in Table 1.1 of the PBS.

In total, there are \$15,888 million of new initiatives, for which Defence will receive \$15,227 million across the decade. Defence will need to find the remaining \$661 million in expenditure from internal efficiencies. On a traditional four year basis; there are \$3,859 million in new initiatives for which Defence will receive \$3,724 million, leaving \$135 million to be found in efficiencies. On both four-year and ten-year bases, the level of funding made available is a generous 96% – which is less challenging than last year's 65% when Defence was told to deliver \$1,200 million in initiatives with only \$780 million of funding.

Table 2.2.5: 2006-07 Funded Budget Measures and Adjustments (million \$)

	06-07	07-08	08-09	09-10	4 year total	10 year total
Defence funding beyond 2010-11 (3%)						10,719
subtotal						10,719
ADF Deployments						
Iraq - stabilisation and reconstruction	310.0	67.1	15.6	0.0	392.7	393
Afghanistan - Provincial Reconstruct Team	91.5	99.4	27.3	0.0	218.2	218
Afghanistan - providing aviation support ⁽¹⁾	14.6				14.6	15
Coastal surveillance - continuation	12.1				12.1	12
subtotal	413.6	166.5	42.9	0.0	623.0	623
Major Capability Initiatives						
Hardened and Networked Army - ph 2	24.1	67.9	152.1	196.4	440.5	1,548
Heavy airlift capability – C-17	792.3	517.6	360.1	248.5	1,918.5	1,899
Coastal surveillance (reactivate minehunters)	23.5	23.8	23.9	24.4	95.6	252
DCP reprogramming	153.9	206.8	52.1	212.2	625.0	-55
subtotal	993.8	816.1	588.2	681.5	3,079.6	3,644.0
Personnel Initiatives						
Army Reserves - remuneration	36.1	46.9	46.8	51.8	181.6	560
ADF - recovering workforce strength ⁽²⁾	94.0	49.0	34.0	17.0	194.0	194
Military superannuation – remove inequities						
subtotal	36.1	46.9	46.8	51.8	181.6	560
Other Initiatives						
Mulwala munitions redevelopment project			61.0	29.1	90.1	131
Logistics - funding for naval aviation	26.2				26.2	26
Crisis communications - improvements	-4.0				-4.0	-4
National security - defence communication	-35.0	-31.0	14.5	18.5	-33.0	80
National security - intelligence connectivity	1.6	3.6	1.3	1.3	7.8	8
National security - charting northern waters	5.0	6.2	7.3		18.5	19
Foreign Fishing - enhanced detection	0.6	1.0	1.0	1.0	3.6	4
Defence housing - competitive neutrality	78.0				78.0	78
PFI Headquarters Joint Ops Command	-83.5	-87.7	-41.6	0.2	-212.6	
subtotal	-11.1	-107.9	43.5	50.1	-25.4	342
total new initiatives	1,432.4	921.6	721.4	783.4	3,858.8	15,888
Efficiency Measures						
Efficiency dividend	-4.5	-11.2	-20.1	-29.0	-64.8	-405
ADF C2 structure - rationalisation	-5.9	-12.7	-20.5	-31.0	-70.1	-256
total efficiencies	-10.4	-23.9	-40.6	-60.0	-134.9	-661
Price & Exchange						
Price Indexation	105.6	72.1	38.9	41.3	257.9	546
Exchange adjustment	-257.4	-257.2	-333.1	-491.4	-1,339.0	-5,344
total price & exchange	-151.8	-185.1	-294.2	-450.1	-1,081.2	-4,798
Summary						
total new initiatives	1,432.4	921.6	721.4	783.4	3,858.8	15,888
total efficiencies	-10.4	-23.9	-40.6	-60.0	-134.9	-661
total price & exchange	-151.8	-185.1	-294.2	-450.1	-1,081.2	-4,798
NET FUNDING	1,270.1	712.6	386.7	273.0	2,642.7	10,429

¹Included in Portfolio Additional Estimates Statements 2005-06, amount not included in the total figures given. ² Funding redirected from within Defence, not an efficiency measure and not included in the total figures given. Numbers may not add due to rounding.

The budget initiatives in detail [PBS p. 25 – 29]

The new initiatives in the budget are spread between\ long-term funding past 2010-11 (\$10.7 billion), military capability enhancements (\$3.6 billion), personnel initiatives (\$560 million) and a bag of miscellaneous measures (\$342 million). In addition, there is \$661 million in efficiency measures and a -\$4.798 billion price and exchange adjustment. These figures refer to spending across the forthcoming decade.

The PBS does a very good job of explaining the measures related to ADF deployments, (p. 25-29). However, since 2005-06, Treasury has directed that routine budget measures not appear in PBS. We rectify this below, drawing very heavily on the descriptions from Treasury's Budget Paper Number 2 – sometimes verbatim.

At last – 3% real growth past the end of the decade

The government will provide an additional \$10.7 billion over five years from 2011-12 to 2015-16 spread across all aspects of defence spending. This includes increased investment in the acquisition and operation of military capability and the sustainment of the Defence military and civilian workforce. The aggregate funding level is based on achieving 3% compounding real growth over the period and includes \$2.4 billion for the acquisition of major specialist military equipment in the Defence Capability Plan. This measure provides a firm basis for Defence planning for the next 10 years. We further explore this initiative in Section 4 of the Brief.

Deployments

The PBS provides an extensive discussion of the supplementation provided to cover the net additional cost of operational deployments. Briefly, \$393 million has been provided to continue current operations in Iraq for a period of 12 months, \$218 million for operations in Afghanistan for two years, and \$12 million for a one-year extension of the ADF contribution to coastal surveillance (\$16 million). See Section 6 of this brief for more on the cost and composition of ADF deployments.

Capability Initiatives

Hardened and Networked Army (HNA) — phase 2

The government will provide \$1.5 billion over ten years from 2006-07 (including \$1.1 billion over six years from 2010-11) as part of an initiative to enhance the Army's protection and improve its firepower, speed, precision and information capability. The initiative also provides for the relocation of Army's 3rd Battalion, the Royal Australian Regiment (3RAR) from Sydney to Adelaide. This measure includes \$656.5 million in funding over six years from 2007-08 (including \$334.8 million over three years from 2010-11) to upgrade facilities at Defence bases. Key points of the HNA program include:

- restructure of the Army into combined arms battle-groups with increased protection and firepower
- 1,485 additional personnel
- re-role 3RAR from a parachute battalion to a mechanised battle group
- re-role, re-train and re-task the Army Reserve to provide direct support to regular operational units

Heavy airlift capability — C-17

The government will provide \$2.2 billion over six years (including \$316.0 million in 2010-11 and 2011-12) to acquire up to four new C-17 heavy airlift aircraft for the ADF. The cost of this measure will be partially offset by \$335.3 million (in the years 2011-12 to 2013-14) from funding for unapproved projects in the Defence Capability Plan. This measure will significantly enhance the ADF's airlift capability. This will enable the rapid deployment of armoured vehicles, helicopters and supplies to areas of operations, and increase the ADF's capacity to provide humanitarian assistance and emergency support. The chosen C-17 aircraft each have more than four times as much carrying capacity one of the current C-130 RAAF Hercules planes. Delivery of the aircraft is planned to be complete by mid-2008.

Coastal surveillance (reactivate minehunters)

The Government will provide \$95.6 million over four years to increase surveillance and patrolling of high threat maritime approaches to Australia to deter unauthorized boat arrivals by reactivating and deploying two Australian Defence Force Huon Class Mine Hunter Coastal vessels. These vessels were previously taken out of service as a cost savings measure following the 2003 Defence Capability Review.

DRP reprogramming

A total of \$625 million of previously deferred major capital equipment funding has been brought forward to take advantage of improved performance by the Defence Materiel Organisation. This follows \$300 million that was reinstated last year. On a ten-year basis, this initiative is effectively cost-neutral once out-turning is accounted for. This reprogramming should help get the Defence Capability Plan back on track.

Personnel Initiatives

Army Reserves — increasing remuneration

The government will provide \$181.6 million over four years to improve remuneration for the Australian Defence Force's Active Reserve in order to attract and retain personnel. The initiative is consistent with the government's decision on a Hardened and Networked Army and includes funding for the establishment of the High Readiness Reserve. Key initiatives for all Reservists include: \$600 per annum health support allowance, \$10 a day Reserve Allowance and extra pay for ex-regular Reserve members. In addition, members of the new High Readiness Reserve will be eligible for a \$5,000 a year completion bonus and an annual health support allowance of \$2,500. Details of how the High Readiness Reserve will operate are yet to be made public.

ADF — recovering workforce strength

This measure covers a variety of recruitment and retention initiatives to help attract and retain skilled military personnel, and also provides for a temporary increase in civilian staff in non-combat roles. The cost of this measure will be met fully from within the existing resourcing of the Department of Defence – mainly from surplus funds due to the ongoing shortfall in military personnel numbers.

Military Superannuation Schemes — removal of inequities

The government will amend the eligibility rules for reversionary provisions in military superannuation schemes at an estimated cost of \$0.6 million over four years. These amendments will align military superannuation schemes with the phase-in provisions

of civilian superannuation schemes. The cost of this measure will be met fully from within Defence's existing resources.

Other Initiatives

Malwala munitions redevelopment

The government will provide around \$300 million over eight years from 2006-07 to modernise the propellant manufacturing facility at Mulwala, New South Wales. The Department of Defence will receive supplementation of \$130.8 million over six years commencing in 2008-09 with the remaining costs met from within the existing resourcing of the Department of Defence.

Logistics — additional funding for naval aviation

The government will provide \$26.2 million in 2006-07 to address logistics requirements for naval aviation. This measure will provide enhanced maintenance, refits, and planned upgrades for Navy helicopters to ensure the ADF sustains its capabilities and meets preparedness levels.

Crisis communications — improvements

The Department of Defence will return \$4.0 million in capital funding to the Budget in 2006-07 for reallocation to the Attorney-General's Department.

National Security — defence communications project

The government will provide \$70.9 million over four years from 2008-09 (including \$19.6 million in 2010-11 and \$18.2 million in 2011-12) to maintain the Department of Defence's secure communications systems. This measure continues the funding initially provided for the *Defence Communications Project* in the 2002-03 Budget. As a result of technological improvements and changes in cost-sharing arrangements, a total of \$66 million will be returned to the budget in 2006-07 and 2007-08.

National Security — improving intelligence connectivity

The government will provide \$8.8 million (including \$7.8 million for Defence) over four years to undertake preliminary work to improve the connectivity of IT systems within the Australian intelligence community and its client agencies.

Securing Borders against Illegal Foreign Fishing — charting in northern waters

The government will provide \$18.5 million over three years for the charting and surveying of Australian waters in the Torres Strait and northern Great Barrier Reef. This measure will help enhance the capacity of maritime enforcement vessels to protect and secure Australian waters from incursions by illegal foreign fishing vessels.

Securing Borders against Illegal Foreign Fishing — enhanced detection capability

The government will provide \$9.6 million over four years (including \$3.6 million for Defence) to enhance liaison, detection and response capabilities in Australian waters.

Defence housing — supplementation for competitive neutrality policy

The government will provide \$78.0 million in 2006-07 to meet the increased costs associated with commercialising Defence Housing Authority (DHA) operations. The Government's competitive neutrality policy, which aims to ensure that significant government businesses do not enjoy net competitive advantages simply by virtue of their public ownership, requires the DHA to earn a commercial rate of return on its

services. The DHA will return an equivalent amount of funding to the Government through increased dividends and tax-equivalent payments.

Defence Headquarters JOC — delivering through a public private partnership

The government will deliver, through a public private partnership, the new purpose-built facilities, infrastructure and services components of the Headquarters Joint Operations Command project near Bungendore, New South Wales. Subject to final contracting terms being settled, the preferred tenderer will build, operate and maintain the new headquarters facility for a 30-year period. Construction is expected to commence in 2006 for completion in late 2008. The Department of Defence will retain responsibility for the procurement, installation and maintenance of the command and control systems at the facility. (This measure appears to be a hand-back of capital investment funds previously allocated to Defence.)

Efficiency Measures

Efficiency dividend — broadening of the application in Defence

The government will realise savings of \$64.7 million over four years by broadening the coverage of the efficiency dividend to a range of civilian and non-operational areas in Defence that are currently not subject to the efficiency dividend. This measure increases the level of coverage from the current 8 % to approximately 14 % of Defence departmental expenditure.

Australian Defence Force command and control structure — rationalisation

The government will realise savings of \$70.1 million over four years through a restructuring of Australian Defence Force higher command and control arrangements. The rationalisation and reallocation of personnel will help improve the efficiency and effectiveness of these arrangements.

Price and Exchange

Defence will receive an additional \$258 million over four years (\$546 million over ten years) as a price adjustment, and will hand back \$1.34 billion (\$5.34 billion over ten years) for foreign exchange movements. These adjustments maintain the buying power of the Defence dollar.

2006-07 Financial Statements [PBS p. 30-38]

On pages 30 to 38, the PBS details the changes from the previous estimate (2005-06 PAES) for the 2006-07 financial statements.

Use of Cash Reserve [PBS p. 39]

Defence plans to have \$438.3 million held as an appropriation receivable at the end of 2006-07, representing a reduction of around \$61 million from the projected 2005-06 close of \$499 million. The reasons are detailed in Table 2.10 [PBS p.39].

Most of this money accumulated unexpectedly back in 2001-02. It is mostly unspent operating expenses but probably contains in the vicinity of \$200 million in unspent investment funds. The story of how so much unspent money came to be is told in the ASPI Policy Report *Sinews of War* and the financial intricacies are detailed in the *Cost of Defence, ASPI Budget Brief 2003-04*.

Following a government decision, the cash reserve has been designated as a fund to cover Defence's future unfunded personnel liabilities. This includes things like annual and long service leave that are slowly drawn down by personnel over time. In the past, Defence has added money to the Reserve to cover future liabilities, and withdrawn money to pay current entitlements that reduce the liabilities. Since 2005-06 payments have ceased but withdrawals have continued.

The Reserve is insufficient to cover the full value of employee liabilities (\$1,494 million). Of course, there is no reason it should equal this amount given that the money accumulated by accident. By and large, this should not be a problem. It's unlikely that everyone will, for example, go on long service leave at the same time. It should be the case that expenses incurred for accumulating personnel liabilities (which generate cash revenue in the funding arrangement) do not vary too much from the annual discharging of liabilities.

In any case, the Cash Reserve is notional money. There is no bank account with half a billion dollars sitting idle. No resources are being wasted. The only problem is that transfers into and out of the Cash Reserve make it hard to track the actual level of Defence funding from year to year.

Payments to the Defence Materiel Organisation (DMO) [PBS p. 41]

Defence pays DMO for the acquisition and sustainment of capability. Table 2.12 details the payments planned for the next four years by category. Also see Section 2.7 of this Brief.

Savings and Efficiency Measures [PBS p. 45-48]

Progress on the program of administrative savings that commenced in 2003-04 is detailed in Table 2.15 of the PBS and the cost pressures being addressed are listed in Table 2.16. We examine this, along with other efficiency measures, in Section 3 of this Brief.

Section 2.3: Capital Investment Program [PBS Chapter 3]

The Capital Budget section of the PBS describes Defence's plans for capital investment in new equipment, upgrades, facilities and other non-military capital items. It's formally described in accounting terms in the Capital Budget Statement in Table 7.5 on page 225 of the PBS, although that is not very revealing.

Capital Investment Program [PBS p.58–59]

Three years ago, Defence began disclosing details of its capital investment program. It has done so again this year in Table 3.1 page 58, which we have reproduced in part in Table 2.3.1. Unlike previous years, foreign exchange adjustments have been made across the forward estimates so that a foreign exchange provision is no longer necessary.

Table 2.3.1: The Capital Investment Program (million \$)

\$ million	2004-05 actual budget	2005-06 projected budget	2006-07	2007-08	2008-09	2009-10
Not Yet Approved Major Capital Equipment (DCP)		14.4 335.3	277.4	1,160.3	1,934.4	3,432.4
Approved Major capital Equipment	3,322.5 2,912.7	3,339.1 3,230.0	4,457.6	3,462.2	2,792.7	1,856.4
Subtotal	3,322.5	3,353.5	4,735.0	4,622.5	4,727.1	5,288.8
actual - budget	2,912.7 +409.8	3,565.5 -221.0				
Capital Facilities Approved & Unapproved	393.3 468.7	346.6 447.1	491.3	462.8	414.9	368.2
Other Capital	602.1 472.5	788.7 582.7	527.9	479.4	491.8	499.5
Total Capital Investment Program	4,317.8 3,853.9	4,488.8	5,754.2	5,564.7	5,633.8	6,156.5

Source: 2006-07 PBS Table 3.1

There are four components to the Capital Investment Program:

Not Yet Approved Major Capital Equipment or Defence Capability Plan (DCP)

This is the remaining unapproved projects from the 2004 Defence Capability Plan, made up of all the Major Capital Equipment projects that have not yet received final approval from government. Major Capital Equipment projects are generally of more than \$20 million value and predominantly involve the purchase of military equipment, (previously called the 'Pink Book'). The preparation of these projects for approval is the responsibility of the Chief of the Capability Development Group. Once approved, projects pass to the DMO for delivery.

Approved Major Capital Equipment: Projects already approved by Government and under way. (Previously called the 'White Book'). The delivery of these projects is the responsibility of the Defence Materiel Organisation.

Capital Facilities: Approved and unapproved Capital Facilities Projects, including everything from new barracks to upgrades of existing facilities. These projects are the

responsibility of the Infrastructure Division in the Corporate Services and Infrastructure Group.

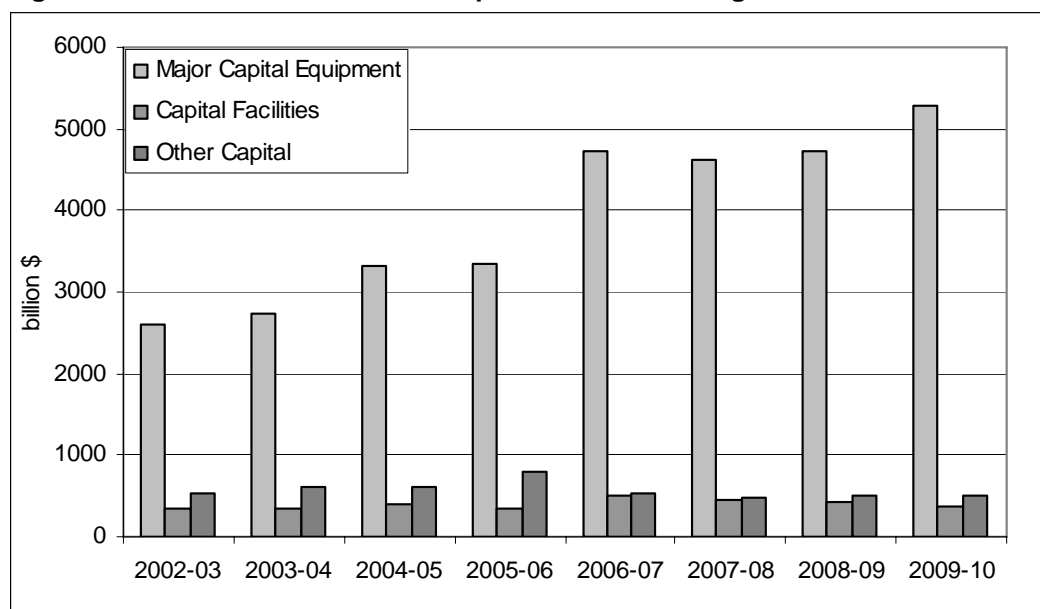
Other Capital: including Minor Capital Equipment (projects costing less than \$20 million), repairable items, non-capital facilities, plant and equipment, and software and intangibles.

This year the PBS includes a useful graph (Chart 3.1, p.59) of the capital investment program showing its various components. Under current plans, a total of \$61 billion will be spent on capital investment over the next decade.

What are the trends in the Capital Investment Program?

The trend across the forward estimates is for an increase in the Capital Investment Program from \$4.5 billion in 2005-06 to \$6.2 billion in 2009-10, in nominal dollars. Within these amounts, expenditure on Capital Facilities and Other Capital fluctuates while the spending on major capital equipment grows (Figure 2.3.1). As shown, after the latest reprogramming of capital investment funds and the C-17 decision, there is significant near-term growth in spending on major capital equipment planned. In fact, the single-year jump in major capital equipment spending from 2005-06 to 2006-07 is \$1.38 billion, or 41%. Even though \$792 million of this is for a military-off-the-shelf acquisition of C-17 aircraft, such a big increase will undoubtedly test the capacity of DMO and defence industry to deliver (see Section 2.7 of this brief for further discussion of DMO performance).

Figure 2.3.1 Planned trends in the Capital Investment Program



Source: 2006-07 PBS Table 3.1 and previous Defence Annual Reports

Operating Component of Capital Investment

Not all of the money in the Capital Investment Program actually represents capital investment. There's also an Operating Component of Capital Investment that includes those funds treated as expenses in the process of acquiring the capital equipment or facilities. This includes project office costs, studies, research and development, travel, professional service providers and other overheads.

The operating component of capital investment is not evenly spread across the four components of the capital program, nor is it constant in time (see Table 2.3.2). The 2003-04 Defence Annual Report (DAR) says that the mix of funding will continue to change reflecting project throughput and the individual circumstances for each project. The operating component of the major capital equipment program is probably planned to fall away quickly because of the number of very large projects anticipated.

Table 2.3.2: Percentage of operating component in Capital Investment Program

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Major Capital Equipment	9.8%	13.6%	17.9%	18.7%	12.4%	9.8%	8.1%	7.4%
Capital Facilities	0.0%	4.8%	14.8%	13.5%	7.0%	7.9%	8.4%	9.8%
Other Capital	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: 2003-04 & 2004-05 DAR and 2006-07 PBS

The operating component of capital investment provides a truer representation of how project funds are spent.

Relationship with the Capital Budget

It's important not to confuse the Total Capital Investment Program [PBS Table 3.1 p. 58] with the Total Capital Payments given in the Capital Budget [Table 7.5 on page 225 of the PBS]. The difference is the operating component of capital that can be found in Table 3.1 of the PBS [p. 68]. The two quantities are reconciled in Table 2.3.3 below.

Table 2.3.3: Total Capital Investment Program ≠ Total Capital Payments

	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
Total Capital Investment Program a	3,470	3,360	4,317.8	4,488.8	5,754.2	5,564.7	5,633.8	6,156.5
Operating Component of Capital b	278	392	602.1	582.4	645.8	621.3	507.7	619.8
Total Capital Payments a - b	3,191	2,968	3,715.7	3,906.4	5,108.4	4,943.4	5,126.1	5,536.7

Source: various DAR, 2006-07 PBS

What's all this about reprogramming and rescheduling?

In 2004, around \$2 billion of previously planned investment in major capital equipment was cut from the early years of this decade and reprogrammed to the period 2008-09 to 2013-14. This was not because of any stringency on the part of government, but rather, simply because DMO was unable to spend the money and deliver the projects. Last year \$300 million was reinstated for 2005-06, and this year \$625 million has been reprogrammed into the budget year and forward estimates. This reflects improved performance from DMO.

Defence Capability Plan [PBS page 60] and Approved Major Capital Equipment Program [PBS page 62]

The PBS contains a list of DCP projects scheduled for approval in 2006-07 [Table 3.2 page 60]. The approved capital equipment program is the responsibility of DMO. As a result, most of the information on approved projects can be found in the DMO section of the PBS [page 243] including details of the top 30 projects. To ensure a coherent

discussion of these topics, we've collect them together in Sections 2.7 and 4 of this brief. Nonetheless, an explanation of the somewhat arcane Table 3.4 of the PBS [page 62] is necessary at this point.

We've reproduced the key parts of Table 3.4 from the PBS in Table 2.3.4 below. What the table shows is the process through which the raw spending profile for the approved major capital investment is turned into a budget estimate. It is a two step process. It begins with the 'sub-total gross capital program'. This is the arithmetic sum of the planned spending in all of the projects that DMO has under way.

Table 2.3.4: Capital investment slippage

	2006-07	2007-08	2008-09	2009-10
Top 30 Project Gross Plans	3,978	3,053	2,477	1,810
Other Projects Gross Plans	876	710	475	245
Sub-total Gross Capital Program	4,854	3,763	2,952	2,055
Programming Adjustment/Slippage	-426	-314	-161	-200
Other groups	30	13	2	1
Total Net Major Capital Program	4,458	3,462	2,793	1,856

Source: Table 3.3, page 62, 2006-07 PBS

The first step is to 'slip' the program to account for the (inevitable) over optimism in the gross figure. Several decades of experience have shown that in the vicinity of 10%-20% of planned spending will not occur. This is subtracted from the first year's gross spend and allocated (according to a formula) across the next three years. In this case the slippage is around 9%. Last year the slippage was 13%. This process is iterated in subsequent years resulting in a smeared out spending profile as money is deferred into the future. (Note: this is separate and distinct from the formal reprogramming of the final figures that has occurred in recent budgets.)

The second step is to divide the funds between DMO and the other groups like DSTO and Capability Development group that contribute to the delivery of the capability. As shown, and not surprisingly, the vast bulk of the money goes to DMO.

Facilities Projects [PBS pp.63–77]

The PBS lists 32 approved Capital Facilities Projects. This includes 16 major projects of more than \$6 million with a total value \$1.37 billion, and 16 medium projects of between \$25,000 and \$6 million with a total value \$40.8 million. In the 2006–07 Budget the government has foreshadowed 16 new major capital works projects for parliamentary consideration and 14 medium capital works projects. These are listed in Table 3.7 and Table 3.9 of the PBS respectively.

Expenditure on facilities projects in 2006-07 is planned to be \$491 million compared with \$347 million in 2005-06. The projected result for 2005-06 is \$347 million which is \$100 million, or 22%, below the budget estimate of \$447 million.

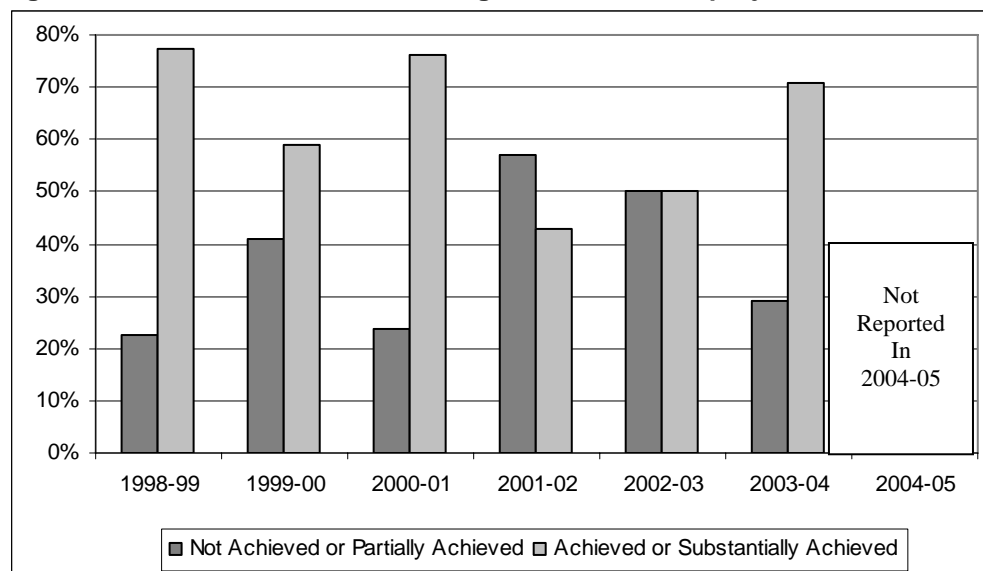
Table 3.6 of the PBS lists the approved major facilities projects. The largest such projects are the RAAF Amberley Redevelopment (\$286 million), the development of Special Forces working accommodation and base redevelopment at Holsworthy (\$208 million), the redevelopment of RAAF Williamtown (\$129 million) and the relocation of DSTO facilities at Fisherman's bend (\$106 million).

The Defence Annual Report usually records the performance of significant facilities projects. The results for the last six years appear in Figure 2.3.2. Unfortunately, no such reporting occurred in the 2004-05 Defence Annual Report.

The PBS also mentions [p. 69] the Private Financing arrangements being put in place for the \$339 million HQ Joint Operations Command to be built in Bungendore and three other accommodation projects.

Defence's program of approved and yet-to-be-approved facilities projects is called the Green Book. It can be found on the Defence web site. The PBS also provides financial information on all facilities projects by electorate [PBS Table 3.5 & 3.7].

Figure 2.3.2 Recent achievement in significant facilities projects



Source: Defence Annual Reports

Other Capital Purchases [PBS page 78]

Other capital purchases include Minor Capital Equipment, repairable items and Other Plant and Equipment. Defence plans to spend \$527.9 million on other capital purchases in 2006-07.

Capital Sales and Receipts [PBS page 79]

The capital budget is funded in part through the proceeds from sales of property, plant and equipment and other capital receipts. On a year by year basis some or all of this money is returned to the government through a capital withdrawal. This is taken into account in determining the appropriations necessary to deliver Total Defence Funding.

Prior to 2002-03, the government set ambitious goals for the sale of Defence assets that were not met, mainly in the area of property sales. However, in 2002-03 the government planned to sell \$660 million worth of buildings and property and achieved a credible \$578 million against that target even after deciding not to proceed with the sale of the Russell Office complex.

In 2003-04, the estimate for total asset sales was \$306 million. But the final result was only \$184 million (including the unbudgeted sale of \$44 million worth of housing). The reasons given in the annual report for the shortfall were government decisions on property sales (-\$117 million), overestimates of miscellaneous sales (-\$36 million) and foreign exchange and overestimate of Specialist Military Equipment Sales (-\$13 million). Since then, the planned amount to be recouped through assets sales has been falling.

Table 2.3.5 shows the recently planned and achieved assets sales (including both property and other assets) within the Defence Capital Budget. The target of only \$38 million in sales for 2006-07 represents the diminished number and value of properties going up for sale compared with recent years, as well as the transfer of accounting for commercial vehicle sales onto DMO's financial statements.

Table 2.3.5: Capital Budget Asset Sales (\$ million)

	Budgeted	Achieved	Shortfall
DRP to June 2000	–	77	–
2000–01	820	87	733
2001–02	1023	199	824
2002–03	700	632	68
2003–04	306	184	122
2004-05	231	143	88
2005-06	95	83	13
2006-07	38		

Source: Defence Annual Report and 2006-07 PBS

Note: 2005-06 result projected only.

Section 2.4: People [PBS Chapter 4]

Overview [PBS p. 83]

The Overview of the PBS 'People' chapter outlines a range of initiatives to improve the management of personnel from a business and planning perspective, and to enhance the development, care, recruitment and retention of personnel. Most of these initiatives began in 2001-02, when \$500 million was allocated over five years to deal with high priority personnel issues. A handy summary of the initiatives can be found on p. 113 of the 2004-05 DAR. The spending extends across 24 separate initiatives, all of which are laudable and most of which are inexpensive. In practice, over the first four years, the bulk of the money has been concentrated into just five programs: ADF rental allowances for single members (\$203 million); Reserves enhancement (\$54 million); improved living-in accommodation (\$44 million); Cadets enhancement (\$22 million) and child care centres (\$8 million). Unfortunately, as we shall see, this has not been enough; the ADF continues to struggle to recruit and retain enough people.

In this year's budget there are two additional personnel measures. First, there is \$182 million in new money over four years for enhanced Reserve remuneration. Second, there is \$194 million of personnel funding reallocated to recruitment and retention. Unfortunately, these latter funds only became available because of a drop in personnel numbers. These measures are explained in Section 2.2 of this Brief.

How big is the workforce?

The establishment of DMO as a prescribed agency complicates the reporting of personnel numbers especially given the different accounting for civilian and military personnel and costs that has been adopted. We've collected together the figures for the entire workforce from the Defence section on page 92 of the PBS and the DMO section on page 288. (We examine the DMO workforce in Section 2.7 of this brief.)

In 2006-07 Defence will be funded to maintain an average of around 51,253 full time military personnel, 18,768 civilians (including 4,620 in DMO) and 19,250 Reservists. In addition, there will be 1,536 Professional Service Providers, including 374 in DMO.

Table 2.4.1: Workforce summary for Defence plus DMO (average funded strength)

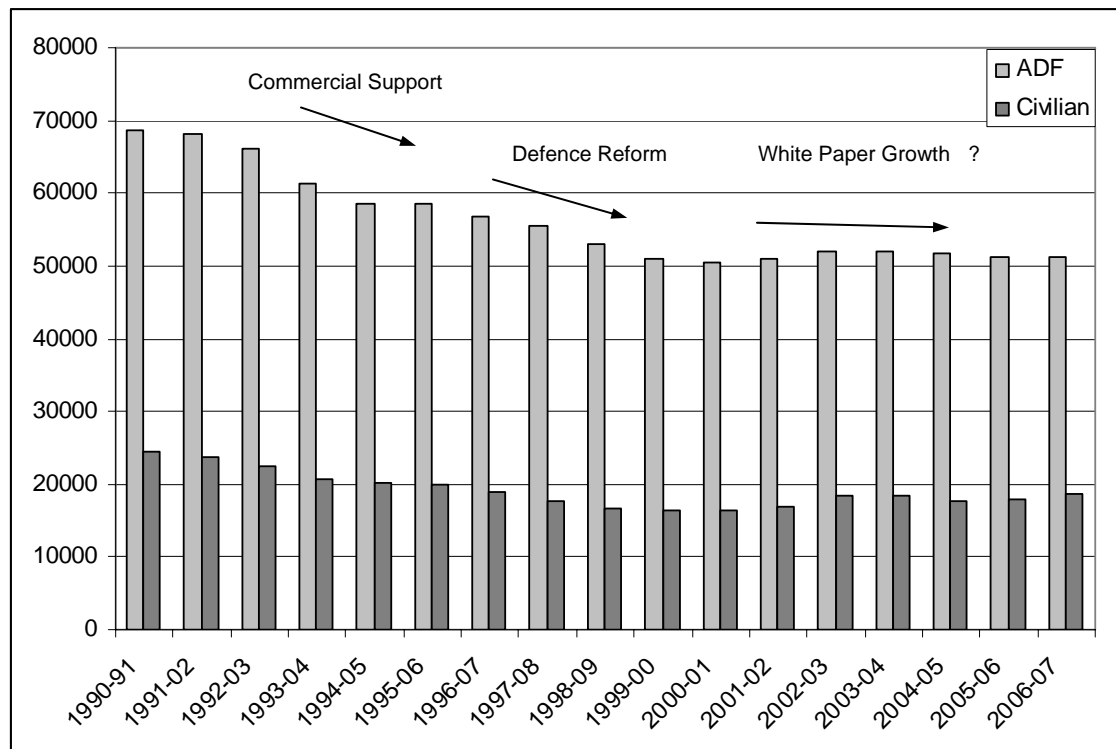
	00-01 Actual	01-02 Actual	02-03 Actual	03-04 Actual	04-05 Actual	05-06 Projected	06-07 Budget
Navy	12,396	12,598	12,847	13,133	13,089	12,800	12,784
Army	24,488	25,012	25,587	25,446	25,356	25,259	25,220
Air Force	13,471	13,322	13,646	13,455	13,368	13,130	13,249
TOTAL	50 355	50,932	52,080	52,034	51,813	52,189	51,253
Reserve	19,835	18,868	19,620	20,488	19,275	19,150	19,250
Civilian	16,292	16,819	18,385	18,303	17,754	17,781	18,768
PSP			2,311	1,878	1,913	1,651	1,536

Source: 2001-02, 2001-02, 2002-03, 2003-04 Defence Annual Report, 2005-06 PBS.

Until 2003, the long-term target was to build a force of 'around 54,000' permanent ADF personnel by 2010. However, the government accepted the recommendations of the 2003 Defence Capability Review, which will see some capabilities withdrawn

from service in the next decade resulting in a reduced personnel target. The 2004-05 PBS [p.5] refers to ‘continued growth of the ADF towards 53,000’. We will do our best to explain this revised figure later in this section. Recent personnel numbers appear in Figure 2.4.1 along with the estimates for 2006-07 and beyond.

Figure 2.4.1 Historical Defence Workforce



Source: Defence Annual Reports, 2001-02 Defence Budget Brief and 2006-07 PBS

How did we get to this point?

During the decade of the 1990s, ADF numbers dropped from around 70,000 to 50,000 permanent personnel, as shown in Figure 2.4.1. Over the same period civilian numbers dropped from around 25,000 to 17,000.

The bulk of these reductions were due to out-sourcing under the Commercial Support and Defence Reform programs (although around 5,600 permanent ADF positions were transferred to the Reserve by the 1991 Force Structure Review). In fact, the initial goal of the Defence Reform Program was to reduce the strength of the ADF to 43,500 but this was soon revised up to 50,000, thereby arresting the decline. This was done by re-directing DRP savings to buy-back the ADF positions, the goal being to redirect personnel from support areas to the combat force. The 2000 White Paper subsequently set permanent ADF numbers on a current growth path towards 53,000.

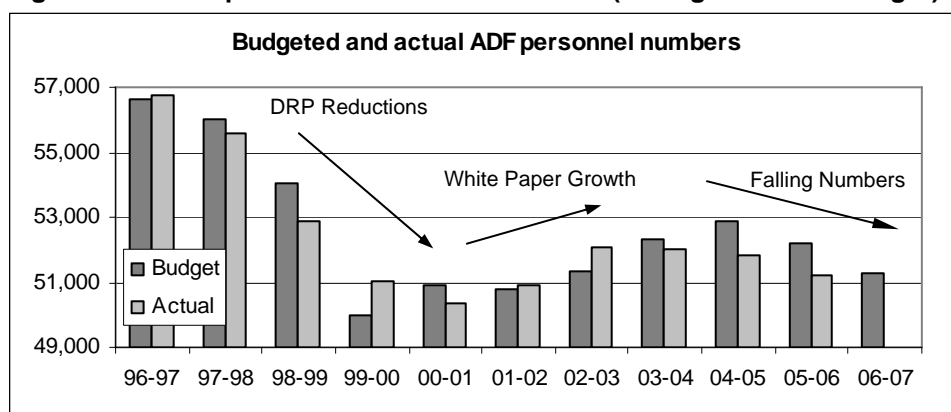
What are the recent trends?

Permanent ADF Numbers

In 2003-04 the year-on-year change in the size of the permanent ADF was negative for the first time since 2000-01. In fact, although Navy grew by 286 personnel compared with the previous year, Air Force and Army fell by 191 and 141 personnel

respectively. (Actually, Air Force was budgeted to fall by 246 positions due to contracting out, so that their result softened the blow.)

Figure 2.4.2 ADF personnel: 1996-97 to 2006-07 (average funded strength)



Source: 1997-98 to 2004-05 Defence Annual Report, 2001-02 Defence Budget Brief and 2006-07 PBS

The net result was that the year-on-year strength of the ADF fell by 46 positions compared with a budget target of an extra 261 personnel. Most worryingly, Army's average funded strength for 2003-04 was fully 495 positions below target.

Unfortunately, these adverse trends flowed on into 2004-05 with the funded strength of 51,813 more than a thousand below the target of 52,872 personnel at year's end. This included a shortfall of 78 in Navy, 679 in Army and 302 in Air Force. The net result was that, once again, the ADF shrank – this time by 221 personnel.

2005-06 has not been much better. The projected result is 51,189, once again more than a thousand below target including a shortfall of 409 in Navy, 225 in Army and 368 in Air Force. But this time the actual drop in ADF numbers was more serious – the ADF shrank by 624 personnel.

For 2006-07 the target is decidedly modest; an increase of 119 in Air Force and falls of 16 and 39 in Army and Navy respectively. The PBS (page 92) explains how these figures were arrived at, but all this is in the noise of the overall medium term trend: Defence is failing to grow its personnel numbers anywhere close to planned levels and has accepted that next year will be no better.

The annual change in ADF strength is the difference between the numbers of people recruited into and separated from the force (typically around 5,000 in each case). Since the planned change in strength is usually well under 1000, the outcome is finely balanced. With this in mind, we turn now to examine ADF recruitment and separations.

Recruitment

Table 2.4.2 shows the percentages of recruitment targets that have been met over the last nine years. Following solid improvements earlier this decade, which saw the rate grow from 76% to 93% in 2001-02, performance dropped back to the mid-80% level in 2002-03 and 2003-04 before deteriorating to 80% last year. On the basis of falling ADF numbers, it appears that they have not done much better this year

Recruitment results vary from Service to Service, and that within each Service skilled personnel (like technicians and trades people) are particularly hard to recruit. This no doubt reflects the very buoyant labour market and national skilled worker shortage that Australia is experiencing.

Table 2.4.2: Percentage of recruitment targets met

	95/96	96/97	97/98	98-99	99-00	00-01	01-02	02-03	03-04	04-05
Navy	98%	92%	98%	76%	57%	74%	85%	84%	86%	73%
Army	99%	98%	94%	78.5%	83%	79%	100%	79%	84%	81%
Air Force	86%	93%	101%	90.5%	83%	88%	87%	94%	90%	91%
ADF	96%	94%	97%	80%	76%	80%	93%	84%	86%	80%

Source: Defence Annual Reports 2001-02 to 2004-05 and Defence submission to the FAD&T References Committee inquiry into ADF recruitment and retention, May 2001.

Retention

Table 2.4.3 shows the percentages of ADF personnel who separated from full-time military service over the last nine years. It shows separation rates reaching a plateau after falling slowly for three years. Some care must be taken with this data because figures for earlier years were impacted by the deliberate reduction in the size of the ADF between 1997 and 2001 under the Defence Reform Program. Nevertheless, separation rates from 2001-02 to 2004-05 were better than in 1995-96 before the cuts to personnel commenced.

Table 2.4.3: ADF separation rates

	95/96	96/97	97/98	98-99	99-00	00-01	01-02	02-03	03-04	04-05
Navy	13.0%	11.5%	11.1%	12.6%	13.3%	13.2%	11.5%	11.6%	10.1%	12.2%
Army	12.5%	10.4%	10.9%	12.9%	13.0%	13.2%	11.5%	9.8%	11.0%	12.7%
Air Force	9.0%	9.0%	10.0%	11.9%	11.6%	15.6%	10.4%	8.1%	7.4%	8.4%
ADF	11.6%	10.3%	10.7%	12.6%	12.7%	13.8%	11.2%	9.8%	9.9%	11.5%

Source: Defence Annual Reports 2001-2002 to 2003-2004 and Defence submission to the FAD&T References Committee inquiry into ADF recruitment and retention, May 2001.

In summary, the plan to grow the ADF stalled in 2002-03 as adverse recruiting trends began to outweigh favourable retention figures and, as a consequence, personnel numbers have fallen over the past three years. This is a result of recruitment achievement falling to a four-year low and separations rising to a four-year high.

What's the solution?

In this budget, the government allocated \$194 million over four years to fix the ADF recruitment and retention (\$138 million) and back-fill non-operational military positions with civilian personnel in the meantime (\$56 million). The recruitment and retention measures are being focused on twenty-five critical trades where personnel shortages are most serious. Measures include improved recruitment processes, retention and completion bonuses, improved rehabilitation to reduce medical discharges, sign-on bonuses, overseas recruitment and maintenance of the recruiting website.

It's worth remembering that all the Services have shortages in specific skill categories and rank levels. Given the overall drop in numbers, it's likely that these specific

shortages are becoming acute. Moreover, it takes a long time to rectify shortages once numbers fall below target because it takes years for personnel to be trained and gain sufficient experience to take up jobs at more senior levels even among the other ranks. Assuming that the measures Defence has taken are adequate (and that is far from assured) it will take some time before the workforce is back in shape.

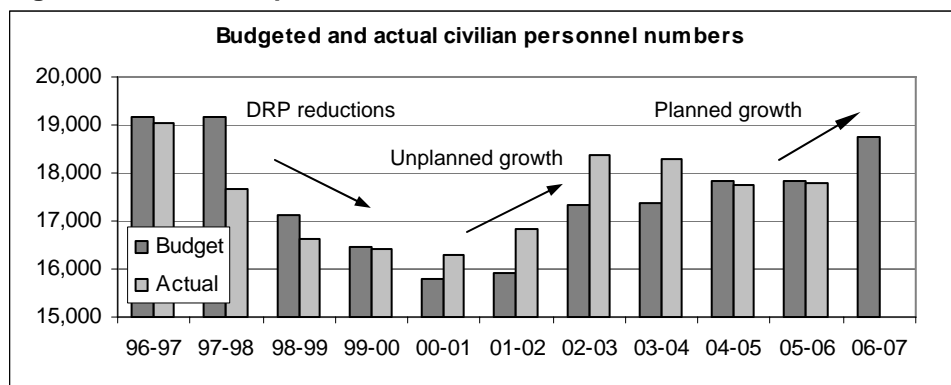
Civilian Numbers

Although civilian numbers fell quickly under the Defence Reform Program they grew back very rapidly in the first two years of White Paper implementation – three times more quickly than military numbers grew. What is more, the growth was largely unplanned, with the size of the civilian workforce in 2001-02 exceeding budget estimates by 5.8% and similarly in 2002-03 (6.1% in excess). However, in January 2003 a civilian hiring freeze was imposed within Defence after it became clear that the projected number of civilian personnel would exceed the revised estimate given less than two months earlier.

In April 2003, the freeze was lifted but direction was given to maintain civilian numbers at current levels. The move to stem the rise in civilian numbers was understandable given that additional personnel must be funded from within current Defence funding levels unless linked explicitly to a specific government-funded initiative. In the 2003-04 budget, a programmed reduction plan was set in place to reduce civilian numbers by 1,008 from 18,385 to 17,377.

However, the actual result for 2003-04 came out at 18,303 only 82 positions below the previous year's figure due, mainly, to a series of government initiatives but also because of an extra 349 new civilian positions unrelated to government initiatives or more efficient practices.

Figure 2.4.3: Civilian personnel: 1996/97 to 2005/06



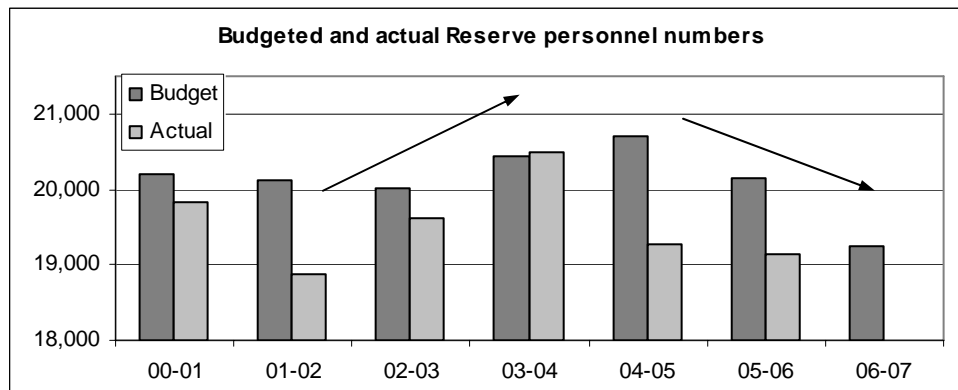
Source: 1997-98 to 2004-05 Defence Annual Report, 2001-02 Defence Budget Brief and 2006-07 PBS

Fortunately, in 2004-05 and 2005-06 personnel numbers were firmly under control with a resulting close alignment of budgeted and actual figures. In 2006-07, civilian personnel numbers are set to rise by 950 due to civilianisation of military positions (199), backfilling of vacant military positions (253), new 2006-07 government initiatives (33), implementation of the Military Justice Inquiry (27), PSP substitution (20), recovery of civilian personnel numbers (102) and financial/warehouse administration (159). With the exception of the last category, all of the new positions are related directly to either new government initiatives or the creation of a more efficient workforce.

Reserve numbers – still declining

Reserve numbers increased by 752 personnel between 2001-02 and 2002-03, and 868 between 2002-03 and 2003-04. This compared favourably with the decline of around 1000 between 2000-01 and 2001-02. However, in 2003-04 numbers fell by 1,213 and by another 125 in 2005-06 due to lower Army recruiting. Consistent with this, the Army output for Protective Operations that employs most of the Reserve Personnel mentioned personnel shortages as a problem in both the 2003-04 and 2004-05 DAR.

Figure 2.4.4 Active Reserve personnel: 2000-01 to 2005-06



Source: 2000-01 to 2003-04 Defence Annual Reports and 2005-06 PBS

This year's budget included \$182 million over four years for improved Reserve remuneration. This is related, in part, to the decision to create a 2,800 strong high-readiness reserve force as part of Hardening and Networking the Army (HNA). Air Force will also have a high-readiness component.

What is the long-term target for the permanent ADF?

The original White Paper goal of an 'around 54,000' strong permanent ADF was replaced by a new goal of 'towards 53,000' in the 2005-06 PBS. To understand this, we need to go back to the original post Defence Reform Program goal of a 50,000 strong ADF. A number of things have happened since then. First, in late 1999 the Prime Minister announced that the ADF would grow by 3,555 personnel to bolster Air Force's deployable capability and build six full strength permanent Army battalions (up from four). Second, a series of post-9/11 counter-terrorism budget initiatives added to Army's strength. Third, the 2003 Defence Capability Review cut capability from the Navy and Air Force by retiring two FFG frigates, removing two mine hunters from service and retiring the F-111 fleet past 2010. Then in the 2005-06 budget, two additional patrol boats added further personnel to Navy.

We've made our best bet at what these figures amount to in Table 2.4.5 over the page. The most difficult figure to estimate is the number of personnel linked to the F-111 retirement. We've used a figure for F-111 personnel costs provided by Defence to a 2004-05 Supplementary Estimates question (Q. 19).

Three initiatives in this year's budget increased the target strength for the ADF. First, the reactivation of the two Mine Hunters will add an extra 30 people to Navy. Second, the HNA initiative will add an extra full time military 1,485 personnel. Third, the restructure of ADF command and control arrangements delivers a saving of 240 personnel.

Adding these various pluses and minuses, yields 54,643 for the estimated target strength for the ADF. This means that Defence needs to find at least another 3,390 personnel over the next 10 years. We say ‘at least’ because these figures take no account of the need for extra personnel to operate new equipment like the three new Air Warfare Destroyers to be delivered in 2013.

Table 2.4.5: The long-term target for the permanent ADF

	Navy	Army	Air Force	Total
Post DRP Baseline	14,000	23,000	13,000	50,000
East Timor Boost 1999		3,000	555	3,555
2002-03 PBS				
Tactical Assault Group		154		154
Incident Response Regiment		117		117
2003-04 PBS				
Special Operations Command		334		334
Defence Capability Review				
Retire 2 oldest FFG	-416			-416
Retire 2 Mine Hunter	-30			-30
Retire F-1111 strike fleet			-388	-388
2005-06 PBS				
Crew for additional Armidale class	42			42
2006-07 PBS		1,485		
Reactivate 2 Mine Hunter	30			30
HNA				1,485
subtotal	13,626	28,090	13,167	54,883
Rationalisation of ADF C2				-240
				54,643

How much do personnel cost?

Personnel expenses for Defence including DMO in 2006–07 will be around \$7.0 billion rising to \$7.9 billion in 2009–10. (Note: these figures include the cost of military personnel and Defence civilians from PBS Table 7.1 on page 221 and DMO civilians from Table 6.1 on page 292). Somewhat confusingly, the cost of DMO military personnel is recorded on Defence’s accounts and appears as part of DMO supplier expenses, whereas DMO civilian numbers do not appear directly on Defence’s accounts. (We explain why in Section 2.7 of this Brief.)

Separate military and civilian personnel expenses have appeared in the last five annual reports and in the 2005-06 PBS. This allows us to calculate the recent and estimated per-capita cost of civilian and military personnel over time. The results of this calculation appear in Table 2.4.5 and 2.4.6. The per-capita expenses include salaries, allowances, superannuation, health, redundancies, housing and fringe benefits tax.

To ensure consistency we have adjusted the historical data for military personnel expenses in Table 2.4.5 to remove military compensation, which has been transferred to the Department of Veteran’s Affairs, and removed one off expenses incurred in

2004-05. This ensures a like-with-like comparison between the years (as far as possible).

The percentage growth rates are nominal (not corrected for inflation) but we have listed the actual and projected Consumer Price Index (CPI) and implicit Non-Farm GDP Deflator (NFGDPD) rates for each year to allow comparison. The NFGDP deflator is important because it is the deflator used to maintain the buying power of Defence funding. In addition, we've provided the Treasury figures for the wage cost index and the ABS data for Average Weekly Ordinary Time Earnings (AWOTE).

What's more, we have included the per-capita indexation promised to Defence. This amounts to the NFGDP deflator plus 2.5% for military personnel and the NFGDP deflator plus 2.0% for civilian personnel. Importantly, the additional 2.5% and 2% indexation did not commence until 2004-05.

Military per-capita trends

Table 2.4.6 shows per-capita permanent military costs for the period 2000-01 to 2006-07. Unfortunately, Defence has once again not disclosed their revised ADF targets for the forward estimates, so we are unable to examine past 2006-07 in detail.

Table 2.4.6 Per-capita permanent ADF personnel expenses

	Military Numbers	Expense \$ 000's	Per Capita	Nominal Growth	Nominal Indexation	Comparison			
						CPI	NFGDPD	Wages	AWOTE
00-01	50,355	4,043,394	\$80,298						
01-02	50,932	4,270,156	\$83,840	4.41%	2.20%	2.90%	2.20%	3.35%	5.5%
02-03	52,080	4,454,277	\$85,528	2.01%	3.20%	3.10%	3.20%	3.50%	5.2%
03-04	52,034	4,860,075	\$93,402	9.21%	3.60%	2.40%	3.60%	3.60%	4.9%
04-05	51,813	4,757,930	\$91,829	-1.68%	6.40%	2.40%	4.90%	3.80%	4.6%
05-06	51,189	5,050,100	\$98,656	7.43%	7.00%	3.00%	4.50%	4.00%	
06-07	51,253	5,231,100	\$102,064	3.45%	5.00%	2.75%	2.50%	4.00%	
			average	4.1%	4.57%	2.76%	3.48%	3.71%	4.8%

Source: Defence Annual Reports and 2006-07 PBS, expenses adjusted pre-2003-04 to take account of Reserve component.

Note that the six-year average growth in per-capita military personnel costs has been slightly below AWOTE but faster than the wage index or CPI. Moreover, the average indexation received by Defence has been 0.47% above the actual growth in per-capita expenses for the six year period.

Civilian per-capita trends

Table 2.4.7 shows our calculation of the changing average per-capita costs of the defence civilian workforce. The first thing to notice is that the average rate of growth of 6.2% exceeds indexation as well as all the benchmark rates of inflation that we have assembled (in contrast to the result for military personnel). This cannot be the result of faster rates of wage growth for civilian employees because wage increases for civilians and service personnel have, on average, been identical for more than a decade. In part, it's because more civilians are gradually being employed at more senior levels, resulting in upward pressure on per-capita expenses. We expect this to occur with the transfer of PSP jobs to civilians, especially in the health service area where salaries will be relatively high given the shortage in medial professionals in Australia.

In addition, the ongoing impact of accrual (non-cash) shifts can make a big difference. For example, last May the civilian leave liability for 2004-05 was assessed as \$35.2 million whereas the projected result has grown three-fold to \$109 million. This sort of thing has probably contributed to some of the big year-on-year variations in growth in both civilian and military per-capita expenses. This makes it difficult to draw any firm conclusions about trends.

Table 2.4.7 Per-capita civilian personnel expenses

	Civilian Numbers	Expense \$ 000's	Per Capita	Nominal Growth	Nominal Indexation	Comparison			
						CPI	NFGDPD	Wages	AWOTE
2000-01	16292	956,661	\$58,720						
2001-02	16819	1,086,116	\$64,577	9.97%	2.20%	2.90%	2.20%	3.35%	5.5%
2002-03	18385	1,235,752	\$67,215	4.09%	3.20%	3.10%	3.20%	3.50%	5.2%
2003-04	18303	1,363,205	\$74,480	10.81%	3.60%	2.40%	3.60%	3.60%	4.9%
2004-05	17754	1,293,100	\$72,834	-2.21%	5.90%	2.40%	4.90%	3.80%	4.6%
2005-06	17781	1,468,066	\$82,564	¹ 13.36%	6.50%	3.00%	4.50%	4.00%	
2006-07	18768	1,568,275	\$83,561	1.21%	5.00%	2.75%	2.50%	4.00%	
			average	6.2%	4.40%	2.76%	3.48%	3.71%	4.8%

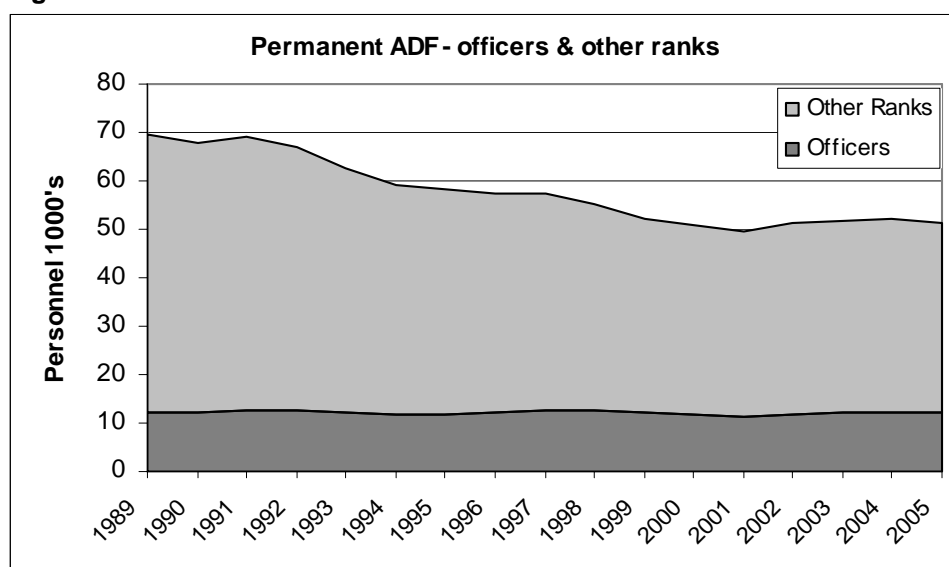
Source: Defence Annual Reports and 2006-07 PBS.

¹ This includes some one-off transition costs associated with business improvement and a shift due to the introduction of civilians to provide health services. In 2005-06 Defence advised that this and other extraordinary factors accounted for the difference between the then estimated figure of 10.17% and an underlying per-capita growth of 5.8%.

Personnel Structures

The breakdown of ADF personnel by rank, and civilians by level, appears in Table 4.2 on page 94 of the PBS and page 288 for DMO. As the ADF has contracted over the last decade the number of officers has remained more or less constant so that the percentage of officers in the permanent ADF has grown from 17% to 23.7% Figure 3.4.5. The result is that there are now around 3.2 enlisted men for every officer. In 2006-07 the percentage will edge up to 24.5%. In comparison, recent figures for the UK and US are around 19% and 16% respectively although it should be noted that they both have very much larger economies of scale.

Figure 2.4.5: Permanent ADF Numbers as at 30 June 1989 – 2005



Source: Defence Annual Reports 1989-90 to 2004-05.

Generals and Mandarins

The trends in star rank, senior executive, and senior officer numbers are shown in Table 2.4.8, the most recent data is taken from Table 4.2 in the PBS page 94. Changes in reporting account for the gaps and lack of earlier data.

Table 2.4.8 Numbers of Senior Ranks and Executive Levels; average funded strength

	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06 projected	06-07 budget
Civilian¹									
Senior Executives	100	106	103	117 (15)	130 (20)	123 (21)	126 (16)	103	103
Senior Officers ²	–	–	3,317	3,844 (290)	3,824 (295)	3,889 (240)	4076 (262)	3,375	3,451
Military									
Star Officers	110	–	120	119	120	119	125	139	136
Senior Officers ³	1,360	–	1,415	1,467	1,507	1,528	1,551	1,574	1,631
Total	-	-	4,955	5,547	5,461	5,920	6,156	5,191	5,321

¹ Civilian numbers include relief staff numbers that appear in brackets for 2001-02 to 2004-05.

² Executive Level 1 and 2 Levels.

³ Colonel and Lt Colonel Ranks.

Table 2.4.9 shows that the number of senior personnel in Defence grew quickly in 2003-04 and 2004-05 before falling by around 20% in 2005-06. At the same time, the number of civilian Senior Executive positions has fallen and the number of Star-ranked military officers has grown.

Professional Service Providers

A significant part of the Defence workforce is made up of specialist Professional Service Providers (PSP) who occupy line positions within the organisation. There is a program underway to replace them, where cost effective, with permanent APS personnel. Recently planned and achieved figures appear in Table 2.4.9. It appears that steady progress is being made in reducing the number of PSP. The savings achieved by doing so contribute to Defence's program of administrative savings.

Table 2.4.9: Professional Service Providers

	2002-03	2003-04	2004-05	2005-06	2006-07
Numbers (planned)		2,111	1,771	1,679	1,536
Numbers (actual)	2,311	1,878	1,913	1,651	
Difference		-233	+142	-28	

Source: 2004-05 DAR and 2005-06 & 2006-07 PBS

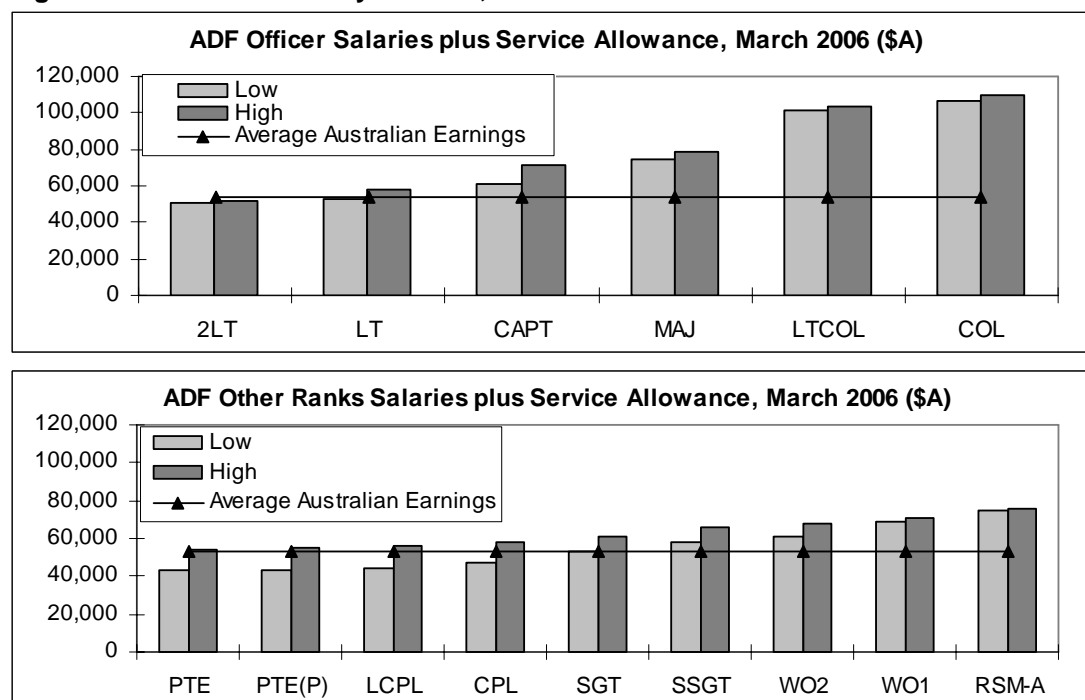
Defence Remuneration

The PBS does not deal with Defence remuneration. But because the largest single slice of the Defence budget goes towards civilian and military salaries we have included a short summary of the key data. Further detail can be found on the Defence Personnel Executive web-site: <http://www.defence.gov.au/dpe/>

Defence Salaries

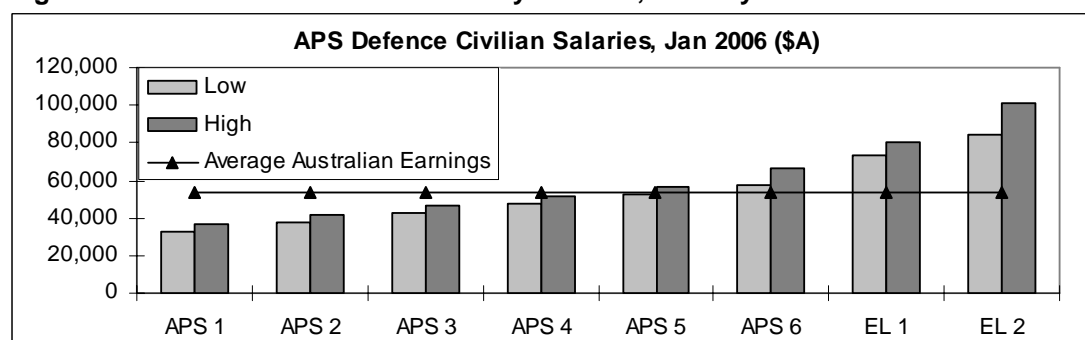
Figure 2.4.6 and 2.4.7 display Defence military and civilian as at March 2006 benchmarked against the Average Weekly Ordinary-Time Earnings for Full-Time Earning Adults (AWOFTEA). The military figures include both salary and the service allowance of \$9,691 per annum received by all service personnel below the rank of Colonel. No account has been taken of the ancillary benefits received by military personnel like housing, medical, rations and specific allowances for skill and deployments.

Figure 2.4.6 Defence Military Salaries, March 2006.



Source: ABS weekly earnings data and Defence pay rates available on <http://www.defence.gov.au/dpe>

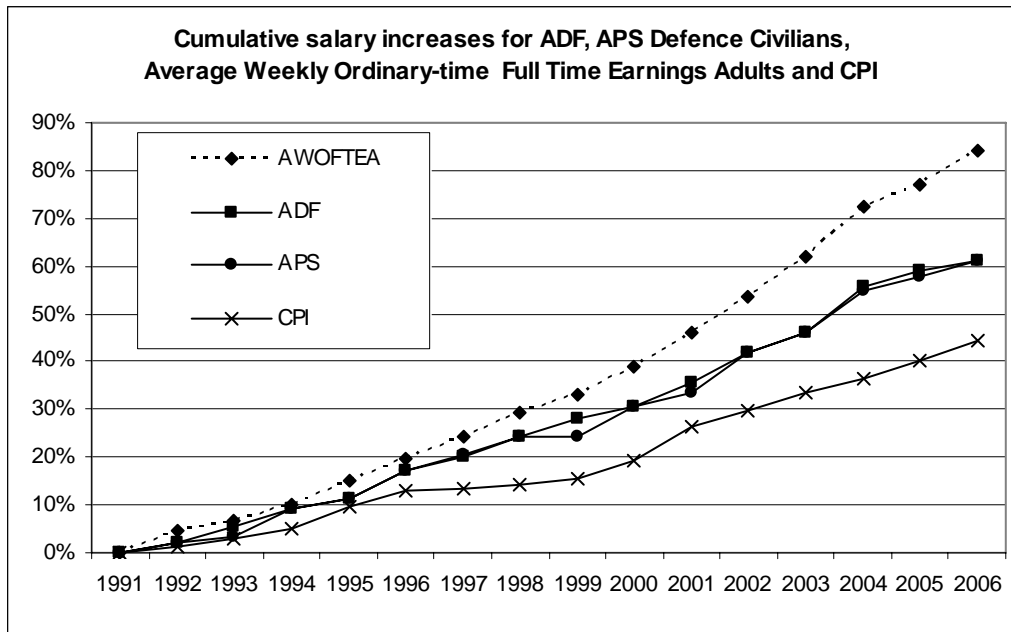
Figure 2.4.7 Defence Civilian and Military Salaries, January 2006.



Source: ABS weekly earnings data and Defence pay rates available on <http://www.defence.gov.au/dpe>

The comparison of defence salaries with AWOFE in Figure 2.5.6 and 2.5.7 represents only a snapshot in time. The relative dynamics of average earnings, defence salaries and the cost of living, is quite another issue. Indeed, as Figure 2.5.8 shows, over the past decade and a half, defence salaries have consistently grown more slowly than average earnings but more quickly than the Consumer Price Index (CPI).

Figure 2.4.8 Defence Civilian and Military Salaries, 1st quarter 2006



Source: ABS weekly earnings data and Defence pay rates available on <http://www.defence.gov.au/dpe>

Two observations can be made about the relative growth in average earnings, defence salaries and consumer prices:

- Because the salary increases for the (largely distinct) ADF and APS workforces are now explicitly linked, any suggestion that they are driven by enterprise productivity is tenuous to say the least. [The Department of Defence does not agree with this conclusion.]
- The fact that average earnings have outpaced defence salaries does not *necessarily* mean that defence remuneration has failed to keep pace with community standards. It may be that the growth in average earnings reflects structural changes in the Australian workforce. More analysis is called for prior to a firm conclusion.

2.5 PLANNED OUTCOME PERFORMANCE [PBS CHAPTER 5]

Under the outputs and outcomes framework explained in Section 1.2 of this Brief, the government ‘buys’ Outputs from Defence to achieve designated Outcomes. Chapter 5 of the PBS describes these transactions between the government as customer for Defence’s Outputs, and Defence as supplier of those outputs.

The Cost of Outcomes and Outputs

The heart of the Defence Budget is the statement of the costs of Outputs on p.103 of the PBS. It used to be that the concept of ‘price’ was used within the Outcomes and Outputs framework to capture an element of businesslike competitiveness in the relationship between government and agency. In the 2004-05 budget the notion of *price* was abandoned in favour of simply assigning a *net cost* to each Outcome and Output. Where no confusion arises we will henceforth refer to previous year’s *prices* as *net costs*, or simply as *costs*. In practice, the net cost is built up from past forward estimates corrected for budget measures and other funding adjustment. In 2006-07 net cost is built upon the forward estimates given in the 2005-06 PAES and PSAES.

Because Defence’s organisational structure is not aligned with the Outcome/Output framework, the net costs are ultimately attributed quantities derived from the budgets that correspond with the organisational structure. The Outcome/Output net costs therefore depend on both the actual expenses incurred within Defence Groups and on the costing methodology used to apportion this money to the Outcomes/Outputs.

Defence has put a lot of effort into improving the Output costing methodology that underpins the classified Defence Management and Finance Plan, and that is reflected in the PBS. Development is ongoing and has resulted in very substantial shifts in the costs attributed several years ago.

There is a subtle accrual aspect to the Outcome/Output net costs. The various expenses that go into making up the costs include items that translate directly into cash expenditure, like employee salaries and allowances, and other items like depreciation that do not. Nevertheless, the full net cost is paid in cash through the Output appropriation. As a consequence, those expenses that do not translate directly into cash expenditure generate residual cash that is available for other purposes such as investment in new capital equipment or facilities. This is why the total of the capital budget and the prices of outputs exceed total Defence funding. A fuller discussion of the Defence funding framework appears in Section 9.

For the purpose of comparison, we have collected the Output/Outcome costs from the past five years in Table 2.5.1 along with the newer costs from the 2006-07 PBS (see also PBS Tables 5a, 5b and 5c). In effect, what were previously considered Outputs prior to 2003-04 were redefined as Outcomes in that year’s budget, and what were previously sub-Outputs became Outputs at the same time. Some care must be taken in making comparisons between years. Variations in net cost are obscured by changes in definition between 2000-01 and 2001-02, as well as the ongoing refinement of the attribution rules used to construct the net costs. In addition, the net costs post 2001-02 are exclusive of the capital use charge of around \$4 to \$5 billion that was previously levied on Defence. This explains the drop in net cost after that date.

The costs for the years 2002-03 through 2008-09 are directly comparable up to the uncertainty introduced by the ongoing refinement of the Outcome/Output costing methodology. The variations between 2005-06 and 2006-07 are detailed within each Outcome/Output section of the PBS [p.99 to 178]. The 2006-07 PBS also lists the Group fiscal contributions to the Outcomes in Table 5e on page 110. (We reproduce this table in Section 1.2 of this Brief where we explain the relationship between the Groups and Outcomes/Outputs.)

Table 2.5.1: Defence Outcome Net Costs 1999–00 to 2008–09, million \$

#	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
1	1,102	1,353	807	869	740	1,052	1,104	1,013	732	608	581
2	4,421	5,216	5,796	3,568	4,177	4,634	4,394	4,616	4,893	4,930	5,161
3	4,576	4,758	5,392	4,981	5,086	5,416	5,177	5,904	5,970	6,026	6,242
4	4,551	5,676	5,526	4,158	4,501	4,813	4,682	4,838	5,087	5,128	5,227
5	193	719	209	179	206	246	233	225	248	259	280
6	371		339	317	457	459	494	467	495	547	599
Sum	15,214	17,722	18,069	14,073	15,168	16,620	16,084	17,063	17,425	17,498	18,089
7				2,229	1,457	2,408	1,910	1,896	1,985	2,073	2,166

Source: 1999-00 to 2004-05 from Defence Annual Report, all other figures from 2006-07 PBS

Outcome Statements

The PBS has a separate section beginning on page 111 devoted to each of the Outcomes. This generally includes, for each:

- A list of the Outputs within that Outcome followed by a couple of introductory paragraphs describing in broad terms what the Outcome includes and does.
- A ‘Planned Performance’ statement that explains some of the more significant activities or developments in the Outcome over the coming year including key milestones in the development of new capabilities.
- A section outlining the ‘Key Risks and Limitations’ to the delivery of the outputs in the coming year.
- A section describing the ‘Risk Mitigation’ to address these risks and limitations.
- A cost summary for the various Outputs within that Outcome covering the budget year and forward estimates (that is; the next four years).
- A table listing the expenses which go into making up the Outcome net cost for the next four years.

Output Statements

Within each Outcome statement are a series of Output statements, which generally include:

- A brief description of the capability delivered by that Output including an outline of the force elements included therein (which can be considered as a quantity target).

- A statement of performance targets which varies from Outcome to Outcome but tends to include includes things like overall preparedness goals, flying hours and sometimes major capital equipment goals.

What do the Net Costs tell us?

The current level of detail provided in the PBS at the Output level represents a very substantial improvement on that provided prior to the 2003-04 PBS. In principle at least, as further data accumulates, this will support an analysis of trends in the efficiency of output delivery and provide warning signs of emerging cost pressures. However, the ongoing refinement of the Output costing methodology has introduced so much volatility into the accumulated data that little meaningful time-series information exists at present. The substantial revisions to the Output costing methodology reflected in the 2003-04 and 2004-05 PAES destroyed any hope that the earlier data was meaningful.

Table 2.5.2 summarise the Output costs from PBS Table 5b (which includes figures across the forward estimates) along with those from recent years. Note that in 2003-04 the old Air Force Outputs of Maritime Patrol and Strategic Surveillance were amalgamated to form Strategic Surveillance & Response Operations. This further obscured what's going on in Air Force beyond that which occurred when Strike Reconnaissance and Tactical Fighter were bundled together into the new Air Combat Output several years ago.

Until such time as Defence's Output costing methodology stabilises and a baseline of information accrues, the Output costs will represent little more than a highly artificial by-product of the Commonwealth's budgeting framework. So it's not surprising that, in reality, both Defence and the Department of Finance remain as focused as ever on the cost of inputs like personnel, facilities and logistics, with only scant regard to the notion of the overall cost of outputs.

Table 2.5.2: Net cost of Defence Outcomes and Outputs (\$ million)

Outcome	Output	Net cost				
		02-03 ¹	03-04 ²	04-05 ³	05-06 ⁴	06-07 ⁵
1. Command of Ops	1.1 Command of Ops		479	668	554	432
	1.2 Military Ops and Exercises		240	361	526	560
	1.3 National Support Tasks		21	23	24	21
	Total Defence Ops	869	810	1,052	1,104	1,014
2. Navy Capability	Capability for:					
	2.1 Major Surface Combatant Ops		1,682	1,677	1,602	1572
	2.2 Naval Aviation Ops		520	567	507	598
	2.3 Patrol Boat Ops		265	281	282	311
	2.4 Submarine Ops		845	795	777	724
	2.5 Afloat Support		197	215	225	295
	2.6 Mine Warfare		386	439	366	399
	2.7 Amphibious Lift		372	406	382	422
	2.8 Hydro and Oceanographic Ops		225	255	254	294
	Total Navy Capabilities	3,568	4,177	4,634	4,394	4,616
3. Army Capability	Capability for:					
	3.1 Special Ops		423	454	500	534
	3.2 Medium Combined Arms Ops		847	835	841	938
	3.3 Light Combined Arms Ops		900	1,009	984	978
	3.4 Army Aviation Ops		593	564	545	591
	3.5 Ground-based Air Defence		123	121	110	126
	3.6 Combat Support Ops		411	504	372	440
	3.7 Regional Surveillance		128	132	131	157
	3.8 Op Logistic Spt to Land Forces		534	542	570	588
	3.9 Motorised Combined Arms Ops		497	518	549	594
	3.10 Protective Ops		632	737	575	980
	Total Army Capabilities	4,981	5,580	5,416	5,177	5,904
4. Air Force Capability	Capability for:					
	4.1 Air Combat		1,804	2,091	1,768	1,593
	4.2 Combat Support of Air Ops		632	678	777	954
	4.3 Strat Surveil & Response Ops		1233	1,098	1,132	1,181
	4.4 Air Lift		831	947	1,005	1,109
	Total Air Force Capabilities	4,158	4,501	4,813	4,682	4,837
5. Strategic Policy	5.1 International Pol & Engage		176	210	190	179
	5.2 Strategic Pol & Military Strategy		30	36	43	45
	Total Strategic Policy	176	206	246	233	225
6. Intel	6.1 Intelligence	317	413	459	494	467
Total Capability Outcomes		14,073	15,168	16,620	16,085	17,063
7. Superannuation and Housing Support Services for Current and Retired Defence Personnel		2,594	1,457	2,048	1,910	1,896

¹The 2002-03 Defence Annual Report did not report down to the current Output level.

² 2003-04 Defence Annual Report. ³ 2004-05 Defence Annual Report. ⁴ Projected results from 2005-06 PAES. ⁵ Budget estimate from 2006-07 PBS. ⁶ Percentage of total net cost.

Planned Performance

There are three broad performance measures that have been employed at the Output level in the last two Defence Annual Reports; preparedness, core skills and quantity. These same performance measures are employed in the 2006-07 PBS. We explore these three measures below. It's important to note that some sub-outputs, especially

those in Outcome 1, have additional specific performance targets beyond these generic ones, and we make no attempt to describe the administered Outcome 7.

Preparedness

Preparedness refers to the readiness and sustainability of the ADF to undertake operations, be it national support tasks, peacekeeping or war. The process by which preparedness targets are set bears recounting.

To begin with, the government's White Paper and Strategic Updates set out the broad strategic tasks that the ADF needs to be prepared to undertake – for example 'contributing to the security of our immediate neighbourhood'. Using this as a basis, Defence develops what is called *Australia's Military Strategy* which includes for each strategic task a series of *Military Response Options* which define the broad operational objectives without specifying how they are to be accomplished – for example 'maintain sea lines of communication to the north of Australia'. These Military Response Options then form the basis of the annual *Chief of the Defence Force's Preparedness Directive*.

The *Chief of the Defence Force's Preparedness Directive* in turn forms the basis of *Operational Preparedness Objectives* down to the force element group (sub-output) level. But this is not the end of the process. Resource considerations are then taken into account with the setting of a *Directed Level of Capability* and for each Output along with a cost agreed between the Secretary, Chief of the Defence Force and the responsible output executive (eg Chief of Army).

The final result is a series of targets for each sub-output. They are classified. But, for example, the light infantry Output might be required to 'be prepared to deploy a battalion at 90 days notice to assist in a regional peacekeeping operation and to maintain the deployment for 12 months' (this example is purely illustrative).

Core Skills

Preparedness targets set for Outputs are driven by Military Response Options with an anticipated warning time of less than 12 months. To take account of possible longer-term tasks and the requirement to retain broad expertise in the three Services, an enduring performance target for nearly all the Outputs is to 'achieve a level of training that maintains core skills and professional standards across all warfare areas'.

The assessment of what is to be achieved, and whether it has been achieved, is ultimately based on the professional military judgement of the Service Chiefs. A key consideration is whether planned training has been completed or not.

Quantity

Most of the Outputs include one or more 'quantity' measures that try to capture some aspect of *how much* capability will be delivered. Each of the three Services uses a different type of measure.

Navy: The basic measure of quantity used by Navy relates in some sense to the availability of ships and their crew to undertake a mission. From 1990-91 to 1998-99 the measure used was the average number of vessels available over the year, from 1999-00 to 2000-01 it was the number of vessel days at Minimum Level of Capability (MLOC) and in 2001-02 it was the numbers of vessel days Fully Mission Capable (FMC). In 2005-06 yet another measure was introduced, the planned number of Unit

Ready Days (URD), defined as follows: Unit Ready Days are the number of days that a force element is available for tasking, by the Maritime Commander, within planned readiness requirements. While this looks similar to the previous definition of Fully Mission Capable we're told that it is a new measure, and we therefore caution against comparison between the two quantities.

As of the 2003-04 DAR a new measure was introduced by Navy: 'Achieved Mission Capability' (AMC) which is the fraction of the URD for which a vessel meets the required level of readiness for the actual tasking for which the force element has been scheduled at any time through its operational cycle. Until a baseline for AMC accumulates we will continue to focus on URD as the measure of quantity.

Army: With the exception of Army Aviation, the quantity measure used by Army is the presence of adequate quantities of trained personnel and equipment within an Output. No quantified targets are released publicly. In practice we get a qualitative assessment in the Annual Report.

Air Force: The quantity measure used by Airforce and Army Aviation is the number of flying hours undertaken by the Output. These measures have been applied consistently for over a decade and constitute a useful diagnostic tool given the established baseline.

Recent Performance

The last five Defence Annual Reports have maintained a largely consistent format of reporting against performance targets at the sub-Output level which equates to the current Outputs. This makes year by year comparisons possible. Table 2.5.3 summarises the results from the 2004-05 Annual Report and tracks the changes from the year before. Defence uses a four-point performance scale for preparedness and core skills: Achieved, Substantially Achieved, Partially Achieved and Not Achieved. To facilitate presentation we have mapped the numerical 'quantity' results according to the key at the bottom of the table.

Table 2.4.3: Output Performance from the 2004-05 Defence Annual Report

Output	Preparedness	Core Skills	Quantity
1. DEFENCE OPERATIONS			
1.1 Command of Operations	Achieved ↔		
1.2 Military Operations	Achieved ↔		
1.3 National Support Tasks	Achieved ↔		
2. NAVY			
2.1 Major Surface Combatants	Achieved ↔	Substantially ↔	Achieved ↔
2.2 Naval Aviation	Partially ↓	Substantially ↑	Substantially ↔
2.3 Patrol Boats	Achieved ↔	Achieved ↑	Achieved ↑
2.4 Submarines	Substantially ↔	Achieved ↑	Substantially ↔
2.5 Afloat Support	Achieved ↑	Achieved ↔	Achieved ↑
2.6 Mine Warfare	Substantially ↓	Achieved ↔	Achieved ↔
2.7 Amphibious Lift	Achieved ↔	Substantially ↔	Achieved ↔
2.8 Hydrographic	Substantially ↔	Achieved ↔	Achieved ↑
3. ARMY			
3.1 Special Ops	Achieved ↔	Achieved ↔	Achieved ↔
3.2 Medium Combined Arms	Partially ↔	Partially ↔	Substantially ↔
3.3 Light Combined Arms Ops	Achieved ↔	Substantially ↔	Achieved ↔
3.4 Army Aviation Ops	Achieved ↔	Substantially ↔	Substantially ↔
3.5 Ground-Based Air Defence	Partially ↓	Substantially ↔	Partially ↔
3.6 Combat Support Ops	Substantially ↔	Substantially ↔	Substantially ↔
3.7 Regional Surveillance	Achieved ↔	Achieved ↔	Achieved ↔
3.8 Operational Logistics Spt	Partially ↓	Partially ↓	Partially ↓
3.9 Motorised Ops	Partially ↔	Partially ↔	Substantially ↔
3.10 Protective Ops	Partially ↔	Partially ↔	Partially ↔
4. AIR FORCE			
4.1 Air Combat Ops	Achieved ↔	Achieved ↔	Achieved ↔
4.2 Combat Spt of Air Ops	Achieved ↔	Partial ↓	Achieved ↔
4.3 Strategic Surveillance & Res	Achieved ↔	Achieved ↔	Substantially ↔
4.4 Air Lift	Substantially ↔	Substantially ↔	Achieved ↔
5. STRATEGIC POLICY			
5.1 Strategic Engagement	Achieved ↔		
5.2 Military Strategy & Cmd	Achieved ↔		
6. INTELLIGENCE	Substantially Achieved ↑		
Improved since 2003-04: ↑	Static since 2003-04: ↔		Declined since 2003-04: ↓
Quantity: Above 95% = Achieved, 95% to 75% = Substantially, Below 75% = Partially			

Source: 2003-04 and 2004-05 DAR

Tables 2.5.4 to 2.5.6 plot the delivery of Defence outputs as reported in the Defence annual reports between 2000-01 and 2004-05.

Table 2.5.4: Output performance – preparedness

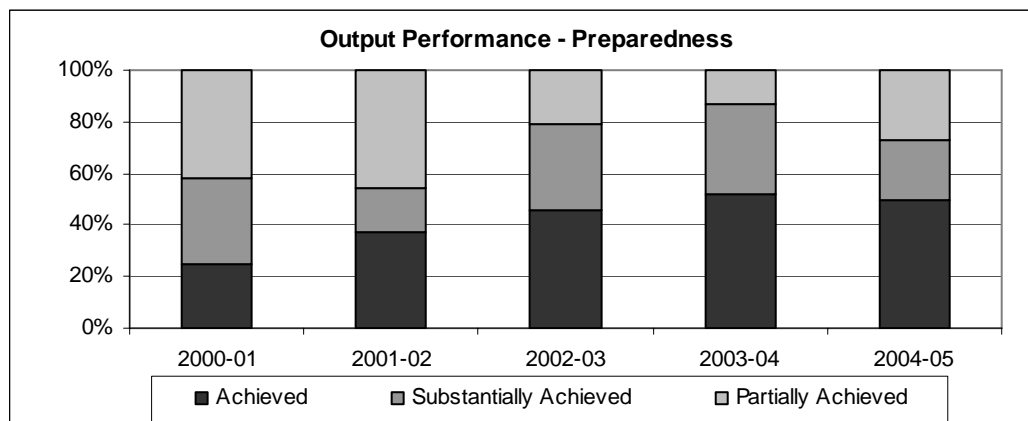


Table 2.5.5: Output performance – core skills

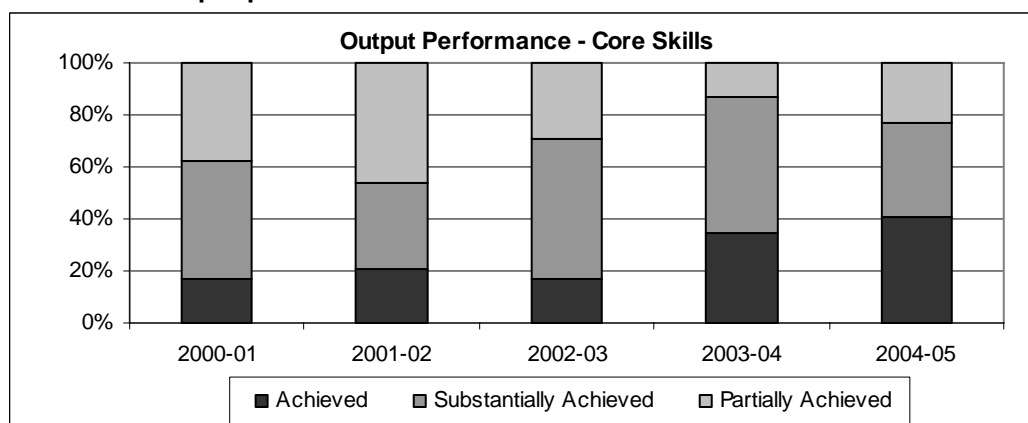
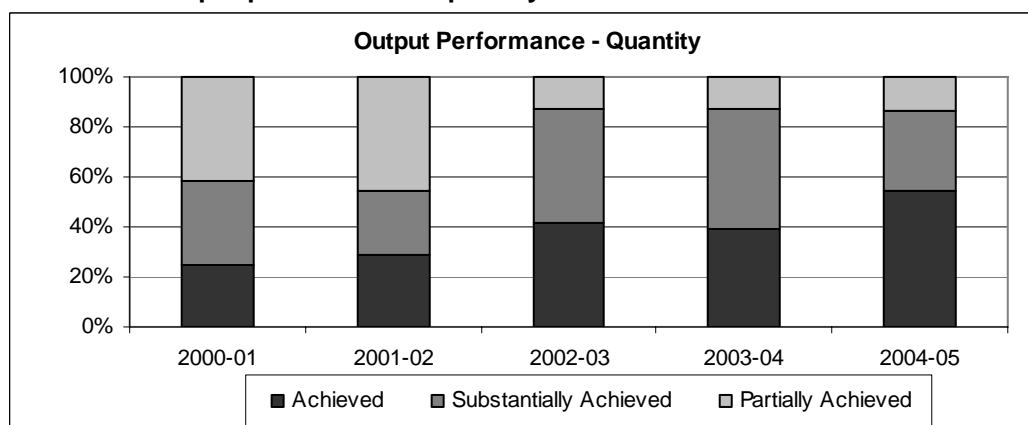


Table 2.5.6: Output performance – quantity



Risks and Limitations

The risks and limitations identified in the 2006-07 PBS cover a wide range of issues, some general and some specific to individual Outputs.

The **high tempo of concurrent operations remains** a concern but does not appear to be as pressing an issue as in previous years. Nevertheless, for some outputs the operational tempo has disrupted training and exercises.

All three services express concern about **personnel**, especially in specific skill areas. But the problem is not spread evenly. Army and Navy seem worse off and they are finding both recruitment and retention difficult. Air Force appears to be in the best situation but still has problems in some specific areas.

It looks like the injection of extra funds into logistics over the last couple of years has all but fixed the long-standing problem of systemic logistics shortfalls. Where there are problems, they seem to have more to do with the availability, rather than the affordability, of logistics supplies. Overall then, there is a consistent picture developing. Over the last four years the logistics problems identified in the PBS have been getting less severe, and the last three Annual Reports have reflected improved performance, as logistics funding has increased.

All of the Outcomes have specific and unique problems that are raised in the PBS, often to do with capability shortfalls that are awaiting redress through major capital investment projects. Unfortunately, it's unavoidable that some of these problems will take years to fix. In addition, Army identifies two specific concerns: the rising cost of infrastructure, and the challenge of introducing a large number of new capabilities into the force over a short period. This presumably includes the armed reconnaissance and additional trooplift helicopters that will enter service over the next few years.

Output Summaries

To augment the information provided in the PBS at the Output level, we have prepared one page Output summaries that seek to draw together relevant background information including on recent performance. In doing so, we have not sought to reproduce the material in the PBS but to compliment it.

An important part of the summaries is a graphical comparison of current targets with past performance. Unfortunately, it has not always been possible to include all the available data on flying hours and sea days within the summaries, so the data has been restricted to key platforms where necessary.

Output 1.1 Command of Operations (Command of Operations)				
<p>Force Structure & Role</p> <p>Joint Operations Command (JOC) was established in March 2004 and the Vice Chief of the Defence Force (VCDF) was appointed Commander Joint Operations Command. In this role, the VCDF is responsible for the planning and conduct of ADF campaigns, operations and other activities.</p> <p><i>HQ Joint Operations Command (JOC)</i> (previously HQ Australian Theatre) at Potts Point Sydney has the job of planning, commanding and controlling military and National Support tasks as well as joint and combined operations. The collocated <i>Australian Theatre Joint Intelligence Centre</i> supports them in this task. JOC works with and through the four component commands:</p> <ul style="list-style-type: none"> • Maritime HQ at Potts Point Sydney • Land Command at Victoria Barracks Sydney • Air Command at Glenbrook • Special Operations Component at Potts Point Sydney. <p>It is planned that the component commands, along with the 1st Joint Movements Centre and Australian Theatre Joint Intelligence Centre, will be collocated at Bungendore (West of Queanbeyan, NSW) by 2007 (now delayed to 2008) in a \$300 million purpose-built facility. JOC also includes:</p> <ul style="list-style-type: none"> • Strategic Operations Division in Canberra • Joint Logistics Command in Melbourne. <p>Other elements of the ADF command infrastructure include <i>HQ Northern Command</i> in Darwin which acts as a subordinate HQ to JOC for operations to the north, including support to the civil authorities and surveillance; the <i>ADF Warfare Centre</i> in Williamstown which develops joint doctrine and plans, conducts and evaluates joint training for JOC, and the <i>Joint Task Force Headquarters</i> and support elements (when established for operations) provide a divisional level operational command capability.</p>				
<p>Issues</p> <ul style="list-style-type: none"> • Issues in 2006-07 include; managing concurrent operations, maintaining operational preparedness, the dispersal of command elements, maintaining logistical support to operations and reduced high-end exercise participation. 				
<p>Performance Targets</p> <ul style="list-style-type: none"> • Australian operational concepts are developed to support ADF planning against credible contingencies. • The Joint Operations Command provides guidance for joint force preparedness in accordance with the Chief of the Defence Force's direction. • Command of ADF forces is effective and the government's strategic objectives for operations are achieved. • Development of ADF operational command arrangements introduced in 2004 and reviewed in 2005 will commence. 				
Past Performance (Annual Report):				
*estimate	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Not Reported	Achieved
2001-02	-	Achieved	Not Reported	Substantially Achieved
2002-03	\$527 million*	Achieved		
2003-04	\$479 million	Achieved		
2004-05	\$356 million	Achieved		
2005-06	\$554 million			
2006-07	\$432 million			

Output 1.2 ADF Military Operations and Exercises (Command of Ops)

Force Structure & Role

As for Command of Operations (Output 1.1) plus forces specifically assigned for the purpose of the operation or exercise. As the title suggests, this is the actual conduct of operations and joint ADF combined (international) exercises.

Issues

- The ADF is currently involved in three operations contributing to the security of the immediate neighbourhood and seven contributing to wider interests including significant deployments to Iraq and Afghanistan.
- There are three ADF joint exercises and thirty-eight combined exercises planned for 2005-06 including nine combined ADF/United States exercises.
- As per Output 1.1.

Performance Targets

- ADF operations meet government direction.
- Forces identified in the Australian Theatre Operational Preparedness Requirement for operational tasks maintain required preparedness levels.
- ADF forces are effectively deployed and sustained.
- The Program of Major Service Activities is reviewed regularly and modified where required.
- The major ADF exercises commitments for 2006-07 are met.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Not Reported	Substantially Achieved
2001-02	-	Achieved	Not Reported	Achieved
2002-03	\$326 million*	Achieved		
2003-04	\$240 million	Achieved		
2004-05	\$401 million	Achieved		
2005-06	\$526 million			
2006-07	\$560 million			

* estimate only

Output 1.3 Contribution to National Support Tasks (Command of Ops)

Force Structure & Role

As for Command of Operations (Output 1.1) plus forces specifically assigned for the purpose of national support in non-combat roles. This ranges from the ongoing routine allocation of Patrol Boat and AP-3C Maritime Patrol Aircraft time, to the allocation of specific capabilities at short notice in a national support emergency. National Support tasks include security, ceremonial, civil maritime surveillance, search and rescue, bush fire response and support to the Army / ATSIC community assistance program.

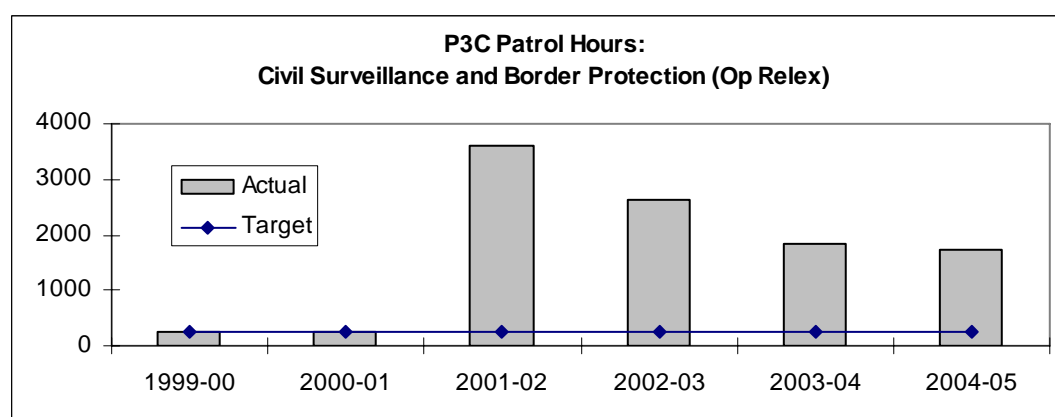
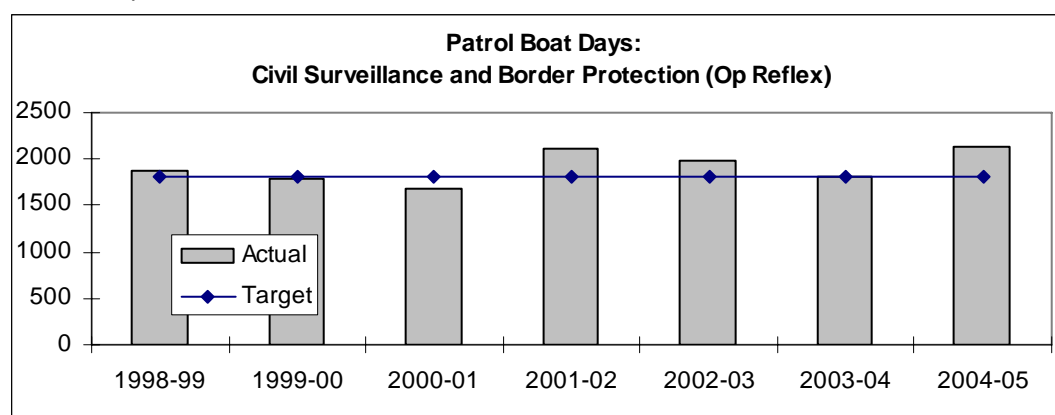
ADF support to the civil surveillance program, in consultation with Coastwatch, includes 250 flying hours by AP-3C surveillance aircraft, and 1,800 Fremantle-class patrol boat days. Other qualitative performance targets are listed in the PBS.

From 2001-02 through to 2003-04 the ADF's contribution to the civil surveillance program was displaced by border protection operations (Op Reflex) which nevertheless resulted in a higher overall rate of effort. There are currently eight extant national support tasks, including Operation Reflex II to deter unauthorised boat arrivals across Australia's northern approaches.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Not Reported	Substantially Achieved
2001-02	-	Achieved	Not Reported	Achieved
2002-03	\$16 million*	Achieved		
2003-04	\$21 million	Achieved		
2004-05	\$23 million	Achieved		
2005-06	\$24 million			
2006-07	\$21 million			

* estimate only



Output 2.1 Major Surface Combatant Operations (Navy Capabilities)

Force Structure & Role

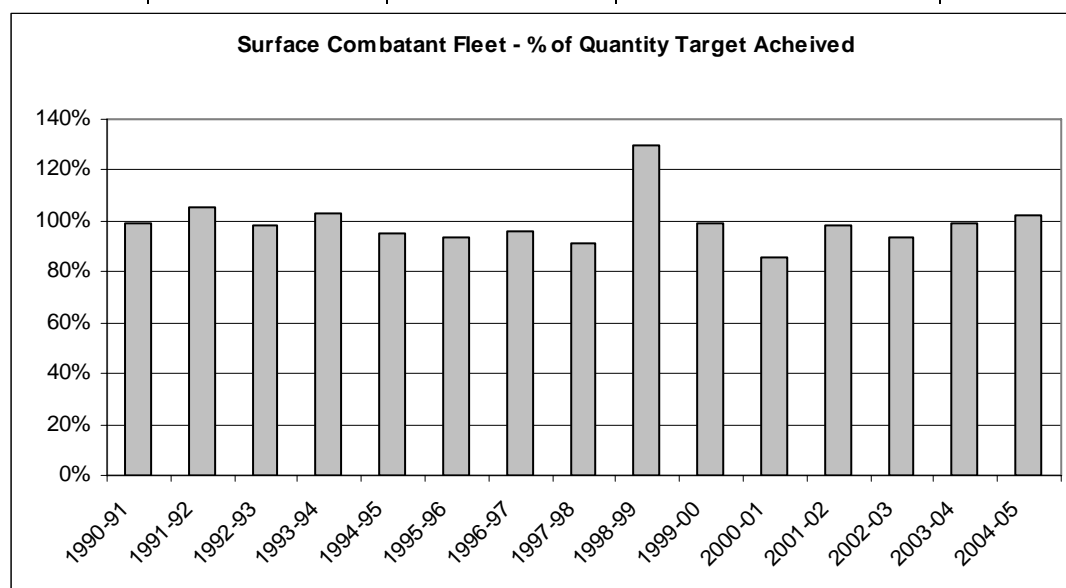
Five 1980s US-designed Oliver Hazard Perry class **Guided missile frigates (FFG)** plus six (increasing progressively to eight by 2007) newer **Anzac class frigates (FFH)**. Both vessels carry Harpoon anti-shipping missiles (Anzac currently being fitted), anti-submarine torpedoes and eventually Evolved Sea Sparrow surface-to-air missiles. Only the FFG are equipped with the more capable Standard surface-to-air missile (which is also being upgraded). The Anzac class have a 5" gun useful for shore bombardment (as recently seen in the Gulf) while the FFG has a less capable 3" gun. Both classes of vessel can embark a Seahawk anti-submarine helicopter although the current availability and capability of these aircraft is less than desired. The Anzac class still awaits the entry into service of the delayed Seasprite helo. The Anzac and FFG are Navy's fighting ships. They have the role of controlling sea-lanes, attacking hostile ships and submarines, escorting shipping, protecting land forces and contributing to high intensity operations in coalition operations. They are sometimes tasked to undertake lesser roles like civil surveillance and border & fisheries protection.

Issues

- Issues for Navy in general include: personnel shortages, logistic support, operational support, limited air-warfare and undersea warfare capability and force protection.
- In 2004-05 the major surface combatants achieved 3,455 Unit Ready Days (URD) against a target 3,394 URD (102%). The target for 2005-06 is 3,049 URD and for 2006-07 is for 2,901 URD.

Past Performance (Annual Report):

* estimate only	Net Cost	Preparedness	Core Skills	Achieved Quantity
2000-01		Achieved	Substantially Achieved	86%
2001-02	-	Achieved	Substantially Achieved	98%
2002-03	\$1,277 million*	Achieved	Substantially Achieved	93%
2003-04	\$1,368 million	Achieved	Substantially Achieved	99%
2004-05	\$1,677 million	Achieved	Substantially Achieved	103%
2005-06	\$1,606 million			
2006-07	\$1,572 million			



Output 2.2 Naval Aviation Operations (Navy Capabilities)

Force Structure & Role

The RAN has sixteen 1980s US designed **Seahawks helicopters** that can be embarked on the Anzac and FFG class frigates. They are configured for anti-submarine and surface search/targeting although the later role is increasingly less practiced. There are six 1970's UK built **Sea King helicopters** used for troop lift and logistics tasks including from the Navy's amphibious and afloat support vessels. At the time of writing eleven **Super-Seasprite helicopters** are being accepted progressively with limited operational capability. Thirteen **Squirrel light helicopters** are used for training and short-term operations at sea. In addition, ten Australian designed **Kalkaras unmanned aerial targets** provide a training capability.

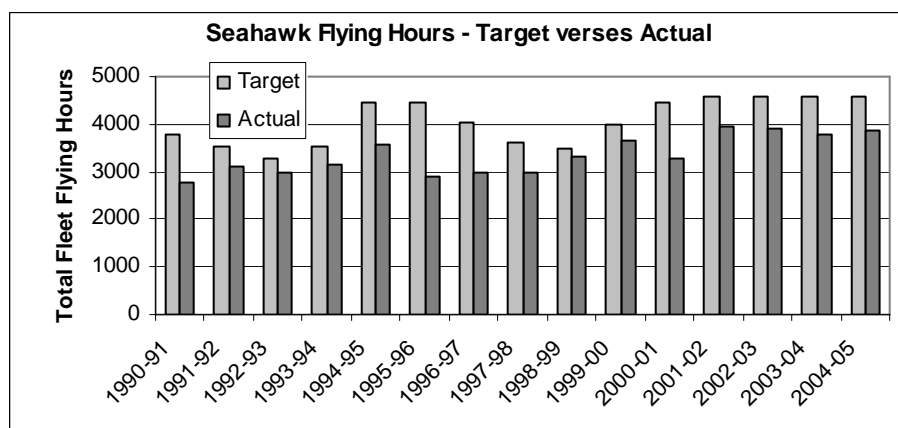
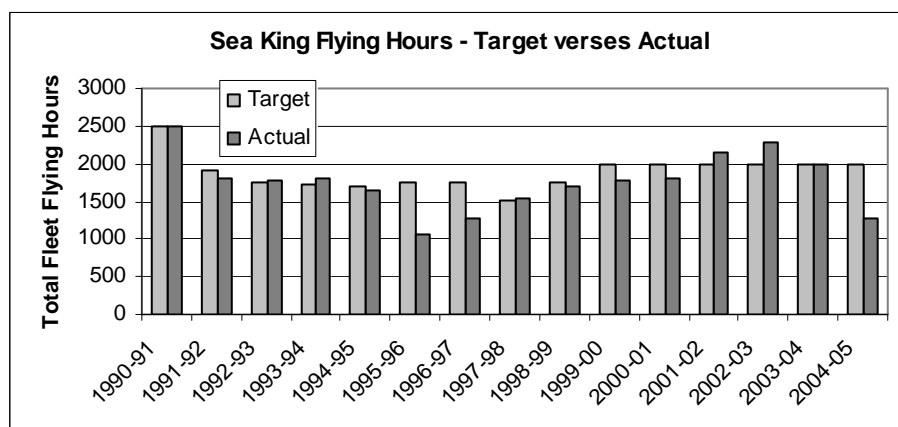
Issues

- In 2004-05 personnel shortages and project interruptions limited Seahawk flying hours.
- In 2004-05 only nine Super-Seasprites were delivered (rather than the planned ten) and only 69% of planned flying hours were achieved.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Achieved Quantity**
2000-01		Achieved	Achieved	79%
2001-02	-	Achieved	Achieved	92%
2002-03	\$393 million*	Achieved	Partially Achieved	94%
2003-04	\$520 million	Achieved	Substantially Achieved	88%
2004-05	\$567 million	Partially	Substantially Achieved	78%
2005-06	\$507 million			
2006-07	\$598 million			

* estimate only **Sea King plus Seahawk percentage of planned flying hours achieved.



Output 2.3 Patrol Boat Operations (Navy Capabilities)

Force Structure & Role

Eight remaining 1980s vintage Australian built, UK designed, **Fremantle class patrol boats** which are progressively being replaced by the new **Armidale class** of which five are now in service. These vessels are mainly tasked in support of Coastwatch's civil surveillance program (see Output 1.3). They can also be used for the insertion and extraction of army patrols on the coast including Special Forces.

The patrol boat fleet also plays an important role in training junior officers by providing an opportunity for early independent command, and is an essential element in the ADF's engagement with South West Pacific nations.

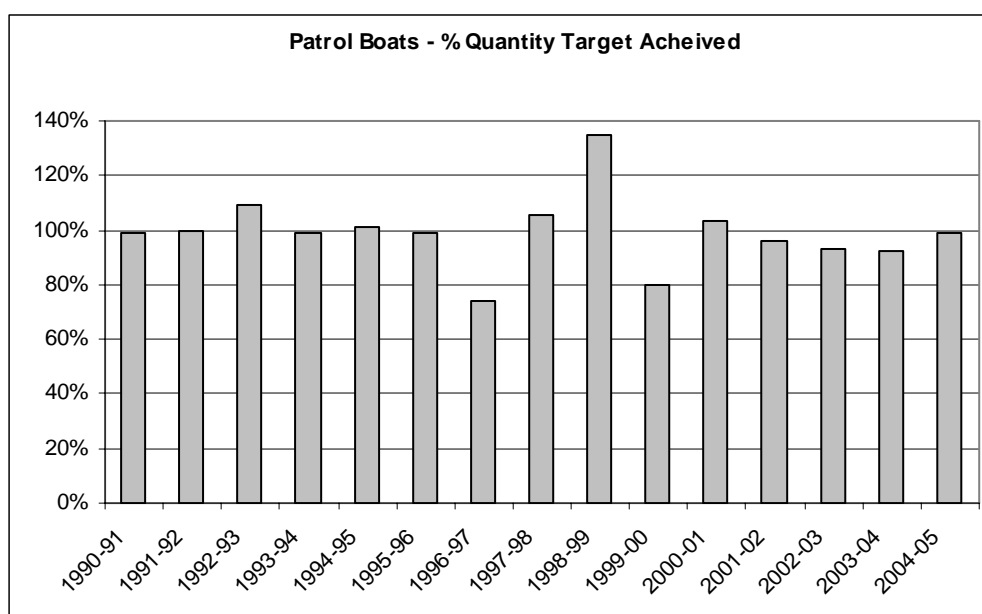
Issues

- The *Armidale Class* boats will have improved sea-keeping, sensors, armaments and habitability. The fourteen replacement vessels will be delivered over the period April 2005 to April 2007. In 2006-07 there will be eight Fremantle and five Armidale class boats in service. (The total buy of Armidale class boats will be fourteen.)
- In 2004-05 the patrol boats achieved 4,681 Unit Ready Days (URD) against a target of 4,737 URD (98%). The target for 2005-06 is 4,834 URD, and for 2006-07 is for 1,232 URD for the Fremantle class and 1,911 for the Armidale class.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Achieved Quantity
2000-01		Partially Achieved	Achieved	103%
2001-02	-	Achieved	Achieved	96%
2002-03	\$240 million*	Achieved	Achieved	93%
2003-04	\$265 million	Achieved	Substantially Achieved	92%
2004-05	\$281million	Achieved	Achieved	98%
2005-06	\$282 million			
2006-07	\$311 million			

* estimate only



Note: Differing and incompatible quantity measures used over time have been converted to percentages.

Output 2.4 Submarine Operations (Navy Capabilities)

Force Structure & Role

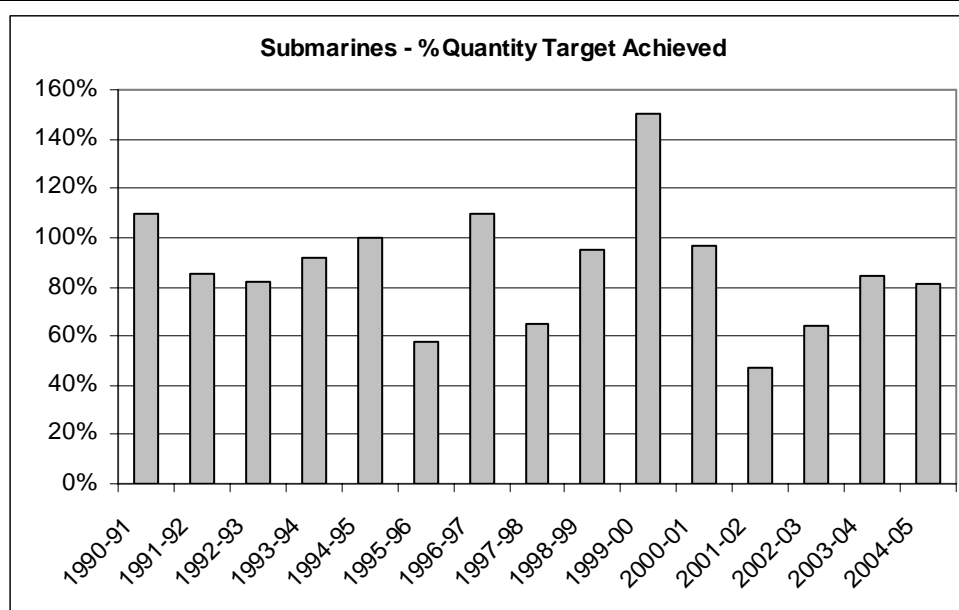
The RAN now has all six **Collins class submarines** at an interim level of capability. Their primary roles are to attack enemy shipping and to counter the threat of adversary submarines. In addition, they can collect intelligence and insert and extract Special Forces. The Collins Class is equipped with Harpoon anti-ship missiles and the US Mk 84 heavyweight torpedo.

Issues:

- The delay in the introduction of the Collins class into service as the Oberon class payed-off disrupted both submariner training and the retention of skilled personnel. This is now being corrected.
- Around a billion dollars of additional work is planned in order to bring the vessels up to the required operational standard. This includes a new combat system to replace the current interim arrangements and replacement torpedoes. These are technically challenging projects that are not without risk.
- A long-term \$3.5 billion contract is now in place for the maintenance of the Collins class with the Australian Submarine Corporation.
- HMAS *Waller* will complete a full-cycle docking in November 2006.
- In 2004-05 the submarines achieved 768 Unit Ready Days (URD) against a target of 948 URD (81%). The target for 2005-06 is 1,560 URD and for 2006-07 is for 1,265 URD.

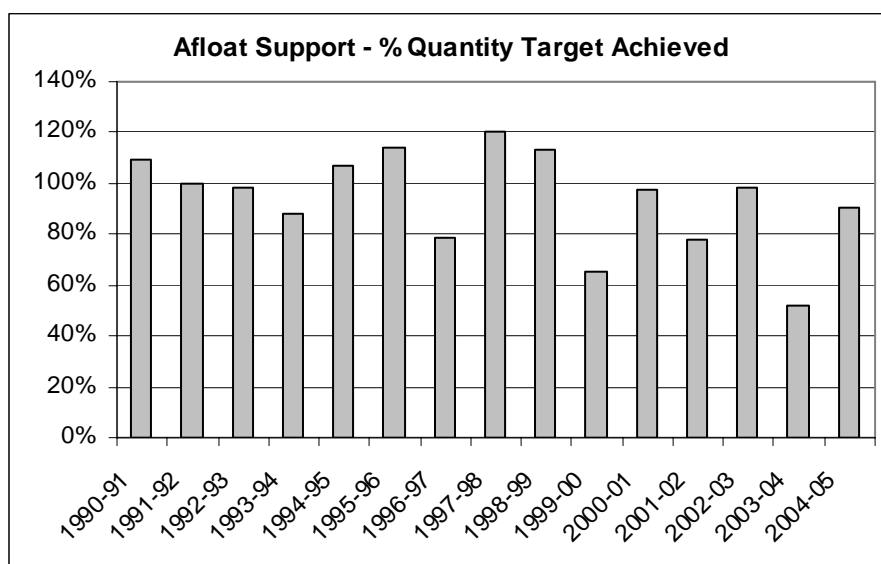
Past Performance (Annual Report):

* estimate only	Net Cost	Preparedness	Core Skills	Achieved Quantity
2000-01		Partially Achieved	Substantially Achieved	97%
2001-02	-	Partially Achieved	Substantially Achieved	47%
2002-03	\$650 million*	Partially Achieved	Substantially Achieved	65%
2003-04	\$845 million	Substantially Achieved	Substantially Achieved	85%
2004-05	\$795 million	Substantially Achieved	Achieved	81%
2005-06	\$777 million			
2006-07	\$724 million			



Note: Differing and incompatible quantity measures used over time have been converted to percentages.

Output 2.5 Afloat Support (Navy Capabilities)				
Force Structure & Role: HMAS Westralia: a 1970s UK-built 40,800 tonnes full displacement single hulled Oiler-Tanker, and HMAS Success: a 1980s French designed, Australian-built 17,900 tonnes full displacement Underway Replenishment Tanker. The role of the afloat support force is to refuel and re-supply Navy vessels at sea and provide logistics support to land operations.				
Issues: <ul style="list-style-type: none"> HMAS Westralia will be replaced by HMAS Sirius in September 2006, HMAS Success is scheduled to undergo a refit in January –to June 2007. The target for <i>Westralia/Sirius</i> in 2005-06 is 365 URD and for 2006-07 is 321 URD. The target for <i>Success</i> in 2005-06 is 365 URD and for 2006-07 is 190 URD. 				
Past Performance (Annual Report):				
	Net Cost	Preparedness	Core Skills	Achieved Quantity
2000-01	-	Substantially Achieved	Substantially Achieved	Replenishment Ship: 98% Oiler-Tanker Ship: 97%
2001-02	-	Achieved	Achieved	Replenishment Ship: 30% Oiler-Tanker Ship: 100%
2002-03	\$200 million (estimate only)	Substantially Achieved	Achieved	Replenishment Ship 109% Oiler-Tanker Ship 89%
2003-04	\$197 million	Substantially Achieved	Achieved	Replenishment Ship 105% Oiler-Tanker Ship 0%
2004-05	\$215 million	Achieved	Achieved	Replenishment Ship 85% Oiler-Tanker Ship 91%
2005-06	\$225 million			
2006-07	\$295 million			



Note: Differing and incompatible quantity measures used over time have been converted to percentages.

Output 2.6 Mine Warfare (Navy Capabilities)

Force Structure & Role:

6 Coastal Mine Hunters – 720 tonnes displacement, plastic hulled, Italian designed and Australian built in the late 1990's. The ships employ sonar to search for mines which can then be destroyed using a remote controlled mine disposal vehicle or otherwise.

2 Auxiliary Mine Sweepers – 1980's converted tugs that physically sweep for mines.

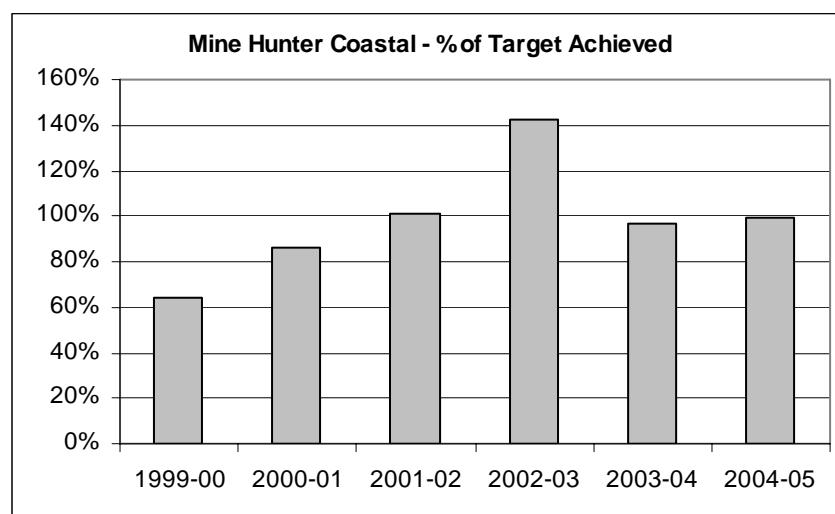
2 Clearance Diving Teams – one on each coast at Sydney and Perth capable of clearing mines and other ordinance, clandestine survey and obstacle clearance, and submerged battle damage repairs.

Issues:

- All 6 Coastal Mine Hunters are now in service, the slight under performance during 2003-04 was due to late completion of scheduled maintenance. Due to resource constraints, 2 of the Coastal Mine Hunters were to be taken out of service and placed in 'extended readiness' in January and April 2006, this was countermanded in the 2006-07 budget.
- The targets for 2005-06 are Coastal Mine Hunters 1,826 URD, Auxiliary Minehunters 730 URD, and Clearance Diving Teams 730 URD,
- The targets for 2006-07 are Coastal Mine Hunters 1,243 URD, Auxiliary Minehunters 730 URD, and Clearance Diving Teams 730 URD. (estimate for minehunters may increase post-reactivation)

Past Performance (Mine Hunter Coastal):

	Net Cost	Preparedness	Core Skills	Achieved Quantity
2000-01	-	Partially Achieved	Substantially Achieved	Achieved: 86% 543 MLOC days 2 vessels
2001-02	-	Substantially Achieved	Achieved	Achieved: 101% 392 FMC days 4 vessels
2002-03	\$308 million (estimate only)	Achieved	Achieved	Achieved: 142% 997 FMC days 6 vessels
2003-04	\$386 million	Achieved	Substantially Achieved	Achieved: 97% 1,669 FMC days 6 vessels
2004-05	\$439 million	Substantially Achieved	Achieved	Achieved: 99% 1,890 URD days 6 vessels
2005-06	\$366 million			
2006-07	\$399 million			



Note: Differing and incompatible quantity measures used over time have been converted to percentages.

Output 2.7 Amphibious Lift (Navy Capabilities)

Force Structure & Role:

2 Landing Platforms Amphibious (LPA), HMAS Manoora and HMAS Kanimbla: refurbished in the mid-to-late 1990's from 2 second-hand 1970's US Landing Ship Tank vessels. They displace 8,450 tonnes and can carry 450 troops along with vehicles and landing craft. In addition, they have been fitted with medical and command & control facilities, and have the ability to house up to four troop lift helicopters.

1 Heavy Landing Ship (HLS), HMAS Tobruk: a 1980's Australian made vessel capable of carrying 315 soldiers, 18 tanks and 40 armoured personnel carriers. She displaces 5,800 tonnes and can operate any ADF helicopter from her deck.

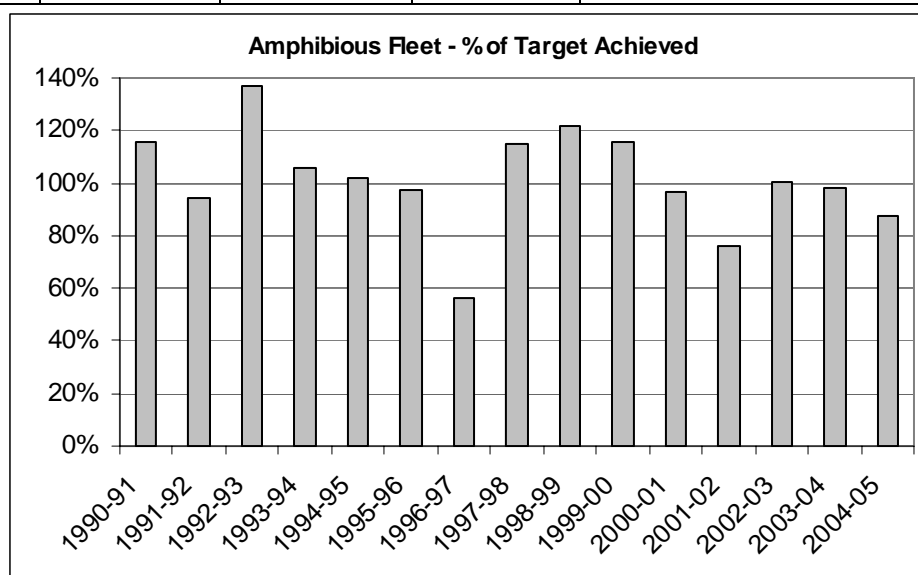
6 Landing Craft Heavy (LCH): a fleet of 1970's craft that can carry a load of up to 180 tonnes a distance of over 1200 nautical miles. Each vessel can carry three Leopard tanks, twenty-three quarter-tonne trucks or thirteen armoured personnel carriers. The LCH completed a life-of-type extension in 2003.

Issues:

Targets for 2005-06 (2006-07) are LPA 674 (577) Unit Ready Days, Tobruk 365 (219) Unit Ready Days and LCH 1,917 (2,013) Unit Ready Days.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01	-	Achieved	Achieved	LPA: 95% 424 MLOC days HLS: 98% 256 MLOC days LCH: 97% 1678 MLOC days
2001-02	-	Achieved	Partially Achieved	LPA: 96% 485 FMC days HLS: 49% 126 FMC days LCH: 73% 1019 FMC days
2002-03	\$338 million (estimate only)	Achieved	Partially Achieved	LPA: 106% 601 FMC days HLS: 93% 247 FMC days LCH: 99% 1159 FMC days
2003-04	\$372 million	Achieved	Substantially Achieved	LPA: 91% 518 URD HLS: 114% 336 URD LCH: 98% 2029 URD
2004-05	\$406 million	Achieved	Substantially Achieved	LPA: 67% 408 URD HLS: 100% 365 URD LCH: 91% 1743 URD
2005-06	\$382 million			
2006-07	\$422 million			



Output 2.8 Hydrographic & Oceanographic Ops (Navy Capabilities)

Force Structure & Role:

2 Hydrographic Ships: 2250 tonne Leeuwin Class Australian-built hydrographic ships.

4 Survey Motor Launches: 305 tonne Paluma Class Australian-built survey launches.

1 Hydrographic Survey Unit: a deployable survey unit from the Hydrographic Office in Wollongong.

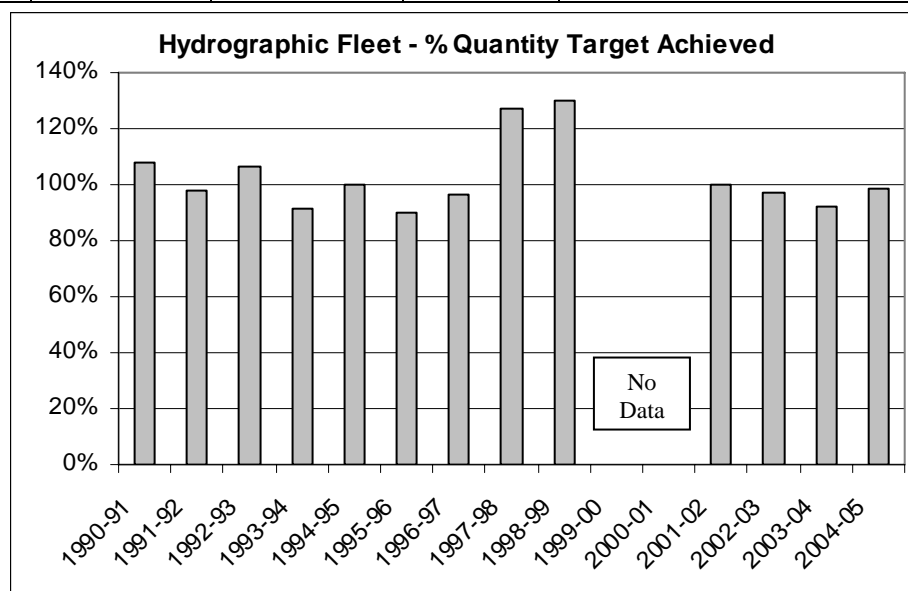
1 Laser Depth Sounder: an airborne depth sounder capability used in shallow water.

Issues:

- In 2005-06 (2006-07) the targets are: Hydrographic Ships 730 (730) Unit Ready Days and SM Launches 1,178 (1,318) Unit Ready Days.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01	-	Partially Achieved	Not Applied	Partially Achieved (nil data on MLOC days)
2001-02	-	Substantially Achieved	Partially Achieved	Hydrographic Ships: 105% 627 FMC days SM Launches: 97% 1012 FMC days
2002-03	\$165 million (estimate only)	Substantially Achieved	Partially Achieved	Hydrographic Ships: 94% 498 FMC days SM Launches: 99% 913 FMC days
2003-04	\$225 million	Substantially Achieved	Achieved	Hydrographic Ships: 81% 592 URD SM Launches: 98% 1,432 URD
2004-05	\$255 million	Substantially Achieved	Achieved	Hydrographic Ships: 97% 691 URD SM Launches: 100% 1,324 URD
2005-06	\$254 million			
2006-07	\$294 million			



Note: Differing and incompatible quantity measures used over time have been converted percentages.

Output 3.1 Special Operations (Army Capabilities)

Force Structure & Role (previously called *Special Forces Operations*):

One **SAS Regiment** in Western Australia. Roles include special recovery (including domestic and overseas counter terrorism by the west coast Tactical Assault Group - TAG), long-range reconnaissance and offensive operations.

One full time **Commando Regiment 4 RAR** in Sydney including the east coast TAG.

One **reserve Commando Regiment** split between Sydney and Melbourne. Roles include land, sea- and air-borne offensive commando raids.

126 Commando Signals Squadron in Sydney provides a reserve special forces signals capability and **152 Signals Squadron** provides a similar full time capability.

An **Incident Response Regiment** based in Sydney that is capable of dealing with nuclear, chemical and biological incidents. This is a reinstatement of a capability developed for the Sydney Olympics.

The 2004-05 budget established the **Special Operations Command** in Sydney as well as an additional company for 4RAR plus support elements.

Issues:

- A very high operational tempo has been maintained by the SASR over the last five years. The 2001-02 Annual Report said that there had been a significant drop in preparedness and core skills as a result. However, and despite a continuing high operational tempo in 2002-03 including deployment to Iraq, there were marked improvements in the areas of preparedness and core skills that year. The failure to fully achieve core skills in 2002-03 was due to a number of training activities and exercises being foregone due to operations or the development of new capabilities. However, in 2003-04 and 2004-05, the Output achieved all its targets for preparedness, core skills and quantity.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months and achieve a level of training that maintains core skills and professional standards across all warfare areas. This includes maintaining a Commando Unit available at 90 days notice.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Achieved	Achieved
2001-02		Partially Achieved	Partially Achieved	Achieved
2002-03	\$458 million (estimate only)	Achieved	Substantially Achieved	Achieved
2003-04	\$423 million	Achieved	Achieved	Achieved
2004-05	\$454 million	Achieved	Achieved	Achieved
2005-06	\$500 million			
2006-07	\$534 million			

Output 3.2 Medium Combined Arms Operations (Army Capabilities)				
<p>Force Structure & Role (previously called <i>Mechanised Operations</i>):</p> <p>Based around the Darwin's 1 Brigade which includes:</p> <p>The 1 Armoured Regiment equipped with German-made 1970s Leopard tanks.</p> <p>The 2 Cavalry Regiment (Reconnaissance) equipped with 1990s North American designed but Australian modified ASLAV light armoured vehicles.</p> <p>5/7 RAR mechanised infantry battalion equipped with 1960s US-made M113 armoured personnel carriers.</p> <p>8/12 Medium Artillery Regiment equipped with US-made 155mm M198 Medium Howitzers and the 105mm L119 Hamel light gun.</p> <p>In addition, 1st Brigade includes extensive organic logistics and engineer support including 1 Combat Engineer Regiment, 1 Combat Service Battalion and 1 Communications Support Regiment.</p>				
<p>Issues:</p> <ul style="list-style-type: none"> Personnel deficiencies in a number of key trades, along with various equipment deficiencies, also adversely affected performance in 2002-03, 2003-04 and 2004-05. The 2003 Defence Capability Review decided to purchase refurbished US Abrams Main Battle Tanks to replace the current fleet of Leopards. These are scheduled to enter service between 2007 and 2009 at a cost of around \$550 million. Additional ASLAV light armoured vehicles are also being acquired. In 2004-05 a number of training activities had to be reduced in scope because of high operational commitments. As with all Army Outputs, the recruitment and retention of personnel remains a concern. Measures are in place to address this for 2005-06 and 2006-07. 				
<p>Performance Target:</p> <p>Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, including the provision of a battalion-sized group within 90 days readiness and achieve a level of training that maintains core skills and professional standards across all warfare areas.</p>				
Past Performance (Annual Report):				
	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Partially Achieved	Partially Achieved	Partially Achieved
2001-02		Partially Achieved	Partially Achieved	Partially Achieved
2002-03	\$818 million (estimate only)	Partially Achieved	Partially Achieved	Substantially Achieved
2003-04	\$847 million	Partially Achieved	Partially Achieved	Substantially Achieved
2004-05	\$835 million	Partially Achieved	Partially Achieved	Substantially Achieved
2005-06	\$841 million			
2006-07	\$938 million			

Output 3.3 Light Combined Arms Operations (Army Capabilities)

Force Structure & Role (previously called *Light Infantry Operations*):

Based around the Queensland based **3 Brigade** which includes:

Three infantry battalions; **1 Royal Australian Regiment (RAR)**, **2 RAR** and **3 RAR** (Sydney),
4 Field Artillery Regiment equipped with the 105mm L119 Hamel light gun,

B Sqn 3/4 Cavalry Regiment with a squadron of 1960's M113 armoured personnel carriers and organic engineer and logistics support including 3 Combat Engineer Regiment, 3 Combat Service Battalion and 3 Communications Support Regiment.

The brigade includes a **Parachute Battalion Group** comprising 3 RAR along with airborne medical, artillery and other support elements.

The role of infantry is to seek out and close with the enemy, to kill or capture him, to seize and hold ground, to repel attack, by day or night, regardless of season, weather, or terrain

Issues:

- According to the 2003-04 and 2004-05 Defence Annual Reports, most training requirements were met although some airborne and amphibious training was restricted due to reduced availability of aircraft and amphibious vessels, because of operational commitments to Iraq and Solomon Islands.
- As with all Army Outputs, the recruitment and retention of personnel remains a concern. Measures are in place to address this for 2005-06 and 2006-07.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, including the provision of a **three battalion-sized group within 90 days** readiness and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Substantially Achieved	Achieved	Substantially Achieved
2001-02		Partially Achieved	Substantially Achieved	Achieved
2002-03	\$1,043 million (estimate only)	Achieved	Substantially Achieved	Achieved
2003-04	\$900 million	Achieved	Substantially Achieved	Achieved
2004-05	\$1,009 million	Achieved	Substantially Achieved	Achieved
2005-06	\$984 million			
2005-06	\$978 million			

Output 3.4 Army Aviation (Army Capabilities)

Force Structure & Role:

Army aviation is based around the **1st and 5th Aviation Regiments**, which have components in Oakey & Townsville in Queensland, and Darwin in the Northern Territory.

The force structure includes thirty-five 1970s-designed **Black Hawk troop lift helicopters**, forty-two 1970s-designed **Kiowa light observation & training helicopters**, twenty-five 1960s-designed **Iroquois troop lift and fire support helicopters** and six 1960s-designed **Chinook medium lift helicopters**. All the helicopters are of US design.

In addition, two **Twin Otter** and three **King Air fixed wing aircraft** are used for surveillance and command & control support.

The role of Army Aviation is to provide troop and logistics transport, surveillance, reconnaissance, aerial fire support and command & control support.

Issues:

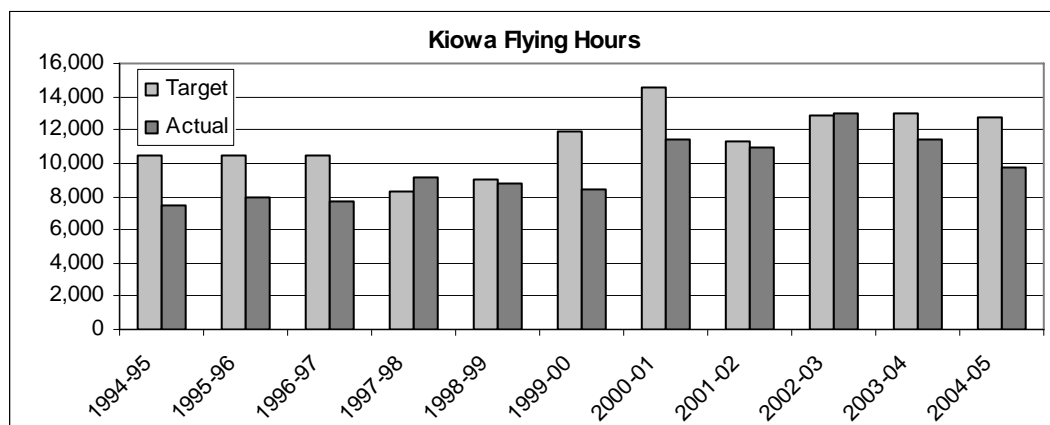
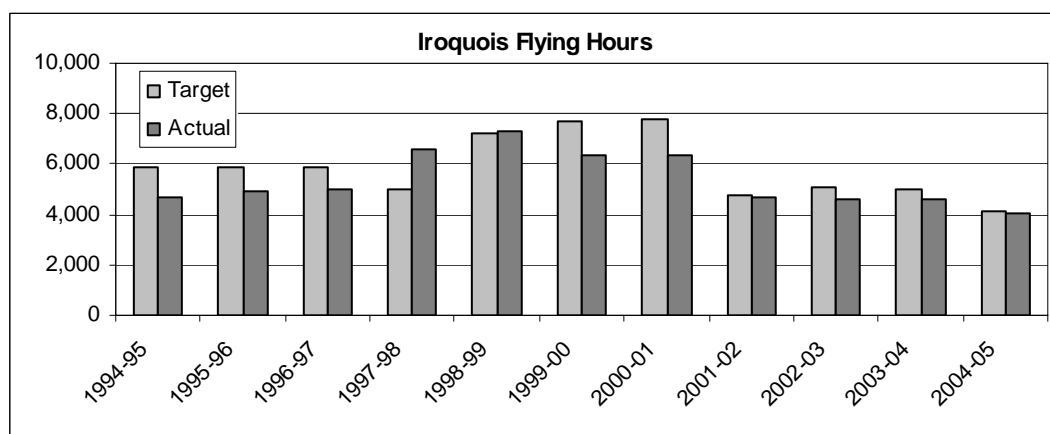
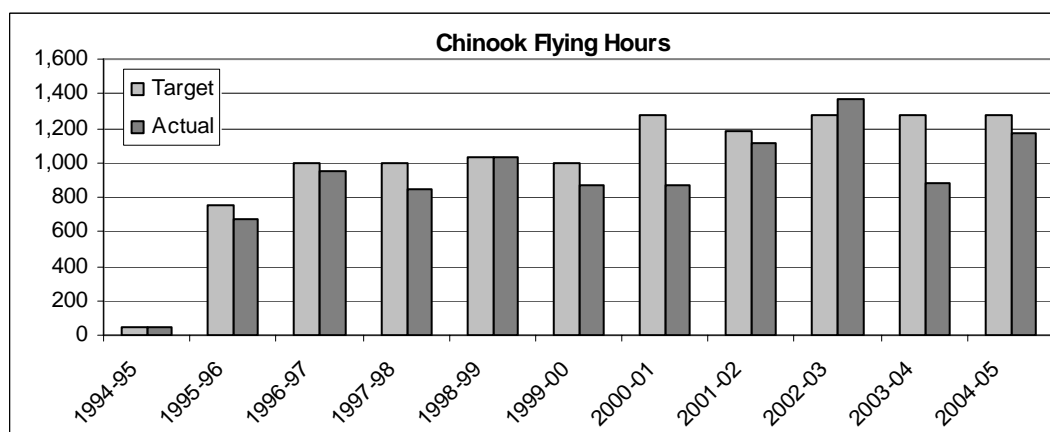
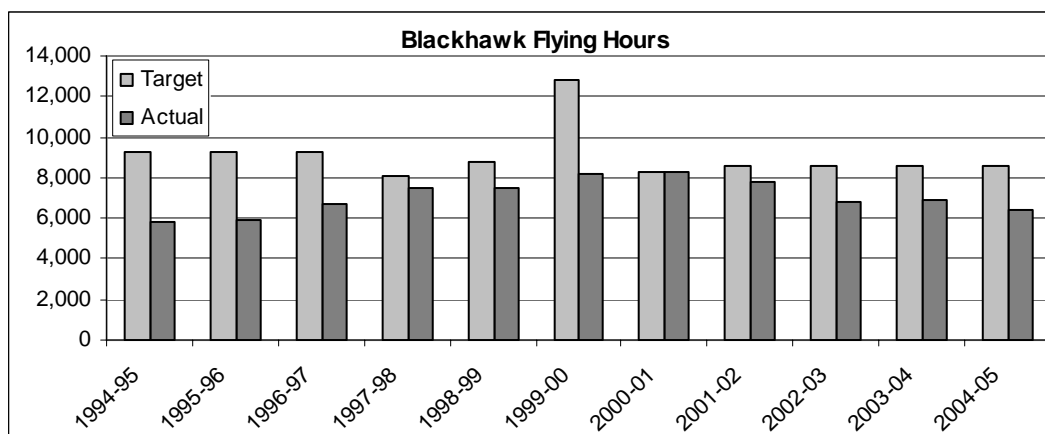
- In 2004-05 the Black Hawks failed to achieve all their allocated flying hours because of aircraft cracking, a maintenance system upgrade and the need to provide crews with leave.
- In 2004-05 planned flying hours for the new Tiger helicopters were under achieved because of delays in the acceptance testing regime and training program.
- The Eurocopter armed reconnaissance helicopter (ARH) entered service in December 2004 in an interim configuration, there are still milestones to be reached before it is an operational capability. As the ARH enter service the current 42 Kiowa will be withdrawn.
- Twelve additional troop lift helicopters are planned with an in-service-date of 2007. These aircraft will be configured to operate from the Navy's LPA vessels.
- The current 25 Iroquois will be withdrawn once the additional troop lift helicopters enter service.

Past Performance:

(*% of planned Black Hawk, Chinook, Iroquois & Kiowa flying hours)

	Net Cost	Preparedness	Core Skills	Quantity*
2000-01		Substantially Achieved	Substantially Achieved	Partially Achieved (91%)
2001-02		Achieved	Substantially Achieved	Substantially Achieved (95%)
2002-03	\$454 million (estimate only)	Achieved	Substantially Achieved	Substantially Achieved (93%)
2003-04	\$593 million	Achieved	Substantially Achieved	Substantially Achieved (86%)
2004-05	\$564 million	Achieved	Substantially Achieved	Substantially Achieved (80%)
2005-06	\$545 million			
2006-07	\$591 million			

Flying hour charts appear overleaf.



Output 3.5 Ground Based Air Defence (Army Capabilities)

Force Structure & Role:

16 Air Defence Regiment in South Australia, equipped with the **Swedish RBS 70** shoulder launched, optically guided, ground-to-air anti-aircraft missile; and the larger towed ground-to-air **Rapier** RF-guided anti-aircraft missile from the United Kingdom. Both weapons were first developed in the 1970s and are classed as short-range systems.

The role of ground based air defence is to shoot down hostile enemy aircraft.

Issues:

- In 2003-04 and 2004-05 shortages in critical trades personnel (particularly tradesmen and air defence gunners) and ammunition prevented full achievement of preparedness targets. Ammunition deficiencies are being resolved through a long-term contract with the missile producer. Stocks will be delivered from 2005-06 onward but, because of long procurement times, remediation will take several years. It's planned that recruiting programs will rectify personnel shortages.
- Project Land 19 (\$100-150 million) is extending the life and enhancing the capability of the existing RBS 70 systems through improved sensors and a night operating capability. The project recently also acquired an RBS simulator to improve training. In the longer term, Land 19 will replace the existing Rapier systems with additional RBS 70 weapons. The in-service date for the new systems is 2005.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity*
2000-01		Partially Achieved	Substantially Achieved	Partially Achieved
2001-02		Partially Achieved	Substantially Achieved	Partially Achieved
2002-03	\$108 million (estimate only)	Substantially Achieved	Substantially Achieved	Partially Achieved
2003-04	\$123 million	Substantially Achieved	Substantially Achieved	Partially Achieved
2004-05	\$121 million	Partially Achieved	Substantially Achieved	Partially Achieved
2005-06	\$110 million			
2006-07	\$126 million			

Output 3.6 Combat Support Operations (Army Capabilities)

Force Structure & Role:

Combat Support Operations includes all non-logistic support to combat operations that is not embedded within Army's brigades. As such, it does not represent any single capability nor formation, although most of its components report directly to land HQ.

Accordingly, the sub-output includes a diverse collection of units including

HQ Engineer Support Regiment,

21 Construction Regiment (Sydney),

22 Construction Regiment (Melbourne),

17 Construction Squadron (Sydney),

21 Construction Squadron (Brisbane),

19 Construction Engineer Works Section (Sydney),

1 Topographical Survey Squadron (Enoggera, QLD),

Combat Training Centre (Townsville),

131 Surveillance Target Acquisition Battery (Enoggera, QLD),

110 Signals Squadron - Electronic Warfare (Sydney),

1 Military Police Battalion (Sydney), and

1 Intelligence Battalion

Issues:

- Over the past four years this Output has experienced personnel shortages, especially in critical trade areas which are inherent to many of the specialist units. These shortages are being progressively addressed through a 'critical trades remediation plan'.
- In addition, equipment deficiencies resulted in less than full achievement against preparedness, core skills and quantity in 2003-04. This is being addressed through new acquisitions and some redistribution of assets.
- Some training requirements were not met in 2003-04 and 2004-05 because of operational deployments and shortfalls in personnel in critical trades.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Substantially Achieved	Substantially Achieved	Partially Achieved
2001-02		Substantially Achieved	Substantially Achieved	Partially Achieved
2002-03	\$386 million (estimate only)	Substantially Achieved	Substantially Achieved	Substantially Achieved
2003-04	\$411 million	Substantially Achieved	Substantially Achieved	Substantially Achieved
2004-05	\$504 million	Substantially Achieved	Substantially Achieved	Substantially Achieved
2005-06	\$372million			
2006-07	\$440 million			

Output 3.7 Regional Surveillance (Army Capabilities)

Force Structure & Role:

This is the smallest of all the Army outputs, being made up of three regional surveillance units that are predominately manned by reserve personnel. These are:

51st Battalion Far North Queensland Regiment which is responsible for conducting reconnaissance and surveillance over 640,000 square km in Far North Queensland and the Gulf country;

The West Australian based **Pilbra Regiment** with 1.3 million square km to cover from the Kimberley boundary in the north, to Shark Bay in the south, then east to the NT/SA/WA border; and

North West Mobile Force (NORFORCE) which covers the Northern Territory and the Kimberly region of Northern Western Australia, an area of operations covering nearly one quarter of Australia's land mass – 1.8 million square kilometres.

The three regional surveillance units are also responsible for offshore islands and the Pilbra Regiment has specific responsibility for the oil and gas infrastructure on the northwest shelf.

Issues:

- Unique among Army sub-outputs, the three regional surveillance units have achieved their targets for preparedness, core skill and quantity four years in a row.
- During 2004-05 a total of 441 patrol days by Regional Force Surveillance units were delivered.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Not Applied	Not Applied	Not Applied
2001-02		Achieved	Achieved	Achieved
2002-03	\$108 million (estimate only)	Achieved	Achieved	Achieved
2003-04	\$128 million	Achieved	Achieved	Achieved
2004-05	\$132 million	Achieved	Achieved	Achieved
2005-06	\$131 million			
2006-07	\$157 million			

Output 3.8 Land Operational Logistics Support (Army Capabilities)

Force Structure & Role:

The Logistics Support Force (LSF) is a brigade sized grouping of reserve and permanent ADF units which can sustain a brigade on operations for extended periods while concurrently maintaining a battalion group elsewhere.

It provides supply, fuel, communications, transport, repair, health and psychology capabilities. The LSF has its own **HQ** and includes;

2, 9 & 10 Force Support Battalions,

1, 2 & 3 Health Support Battalions,

130 & 145 Signals Squadrons,

Deployed Force Support Unit,

HQ Force Support Unit,

1 Psychology Unit,

1 Petroleum Coy,

3 Recovery Coy, a logistics support force workshop and detachments on HMAS Tobruk and the two LPA vessels.

The units are geographically dispersed.

Issues:

- The high operational tempo over the last several years has seen parts of the Output deploy frequently in support of operations. As a result, remediation will be ongoing through 2004-05.
- Over the last four years the Output has experienced personnel shortages especially in a number of key trade areas. This contributed to targets not being met in preparedness, core skills and quantity in 2002-03, 2003-04 and 2004-05.
- Equipment deficiencies adversely impacted preparedness in 2002-03, 2003-04 and 2004-05.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Substantially Achieved	Substantially Achieved	Substantially Achieved
2001-02		Substantially Achieved	Substantially Achieved	Partially Achieved
2002-03	\$448 million (estimate only)	Substantially Achieved	Substantially Achieved	Substantially Achieved
2003-04	\$534 million	Substantially Achieved	Substantially Achieved	Substantially Achieved
2004-05	\$542 million	Partially Achieved	Partially Achieved	Partially Achieved
2005-06	\$570 million			
2006-07	\$588 million			

Output 3.9 Motorised Combined Arms Operations (Army Capabilities)				
<p>Force Structure & Role (previously called <i>Motorised Infantry Operations</i>):</p> <p>Motorised Combined Arms Operations are based around the mostly medium readiness 7 Brigade.</p> <p>It is an integrated reserve-regular formation including a HQ in Enoggera Queensland, and including three motorised Battalions;</p> <p>6 Royal Australian Regiment (Enoggera),</p> <p>9 Royal Queensland Regiment (Queensland),</p> <p>25/49 Royal Queensland Rifles (Brisbane and Darling Downs region), and the</p> <p>2/14 Light Horse Regiment a reconnaissance battalion (Enoggera),</p> <p>1 Field Regiment (Enoggera) plus engineering and logistics support including;</p> <p>2 Combat Engineer Regiment, and</p> <p>7 Combat Services Support Battalion.</p>				
<p>Issues:</p> <ul style="list-style-type: none"> For several years now, the Motorised Combined Arms Operations Output has suffered from equipment deficiencies, personnel shortfalls in key trades, ammunition shortages and sustainability issues. On top of this, operational commitments have contributed to some collective training being foregone. The Output has a significant Reserve component which is under-staffed due to lower than expected recruiting results. Equipment deficiencies are being addressed through the acquisition of new equipment and the redistribution of existing equipment to priority areas. This includes upgraded ASLAV light armoured vehicles and new Bushranger infantry mobility vehicles. Personnel shortages are being addressed through recruitment and retention. 				
<p>Performance Target:</p> <p>Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months, including the provision of a battalion-sized group within 90 days readiness and achieve a level of training that maintains core skills and professional standards across all warfare areas.</p>				
Past Performance (Annual Report):				
	Net Cost	Preparedness	Core Skills	Quantity*
2000-01		Partially Achieved	Partially Achieved	Substantially Achieved (Regular) Partially Achieved (Reserve)
2001-02		Partially Achieved	Partially Achieved	Substantially Achieved (Regular) Partially Achieved (Reserve)
2002-03	\$591 million (estimate only)	Partially Achieved	Partially Achieved	Substantially Achieved (Regular) Partially Achieved (Reserve)
2003-04	\$497 million	Partially Achieved	Partially Achieved	Substantially Achieved (Regular) Partially Achieved (Reserve)
2004-05	\$518 million	Partially Achieved	Partially Achieved	Substantially Achieved (Regular) Partially Achieved (Reserve)
2005-06	\$549 million			
2006-07	\$594 million			

Output 3.10 Protective Operations (Army Capabilities)

Force Structure & Role:

The protective operations sub-output includes all those reserve units not attributed to other sub-outputs. It is structured around 6 infantry brigades each of which has a HQ, two or three infantry battalions, an armoured reconnaissance unit and combat and logistics support units. These are:

4 Brigade in Melbourne,
5 & 8 Brigades in Sydney,
9 Brigade in Adelaide and Hobart,
11 Brigade in Townsville, and
13 Brigade in Perth

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Issues:

- During 2002-03 a High Readiness Reserve Response Force was established. It comprises a company sized Response Force in each of the six Reserve Brigades, plus the 1 Commando Regiment in Sydney and Melbourne.
- Aside from the High Readiness Reserve Response Force, quantity targets were not met in 2003-04 and 2004-05 due to personnel shortages, although Reserve personnel still provided a reinforcement and rotation base within the combat force component of the Army.
- This budget announced a number of Reserve retention initiatives, including some tailored for the new High Readiness Reserve that will be progressively built up over the remainder of the decade.

Performance Target:

Achieve levels of preparedness directed by the Chief of the Defence Force for military response options with a warning time of less than 12 months and achieve a level of training that maintains core skills and professional standards across all warfare areas.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Partially Achieved	Partially Achieved
2001-02		Achieved	Partially Achieved	Partially Achieved
2002-03	\$569 million (estimate only)	Partially Achieved	Partially Achieved	Partially Achieved
2003-04	\$632 million	Partially Achieved	Partially Achieved	Partially Achieved
2004-05	\$737 million	Partially Achieved	Partially Achieved	Partially Achieved
2005-06	\$575 million			
2006-07	\$980 million			

Output 4.1 Air Combat (Part 1 - Strike Reconnaissance)

Force Structure & Role:

17 F-111C & 5 F-111G Strike Aircraft: 1960s design US-made supersonic bombers (plus 5 F-111G in storage and 2 being used for spares). The F-111C and F-111G aircraft provide a long-range strike capability that can bomb targets in adversary territory or attack vessels using the Harpoon anti-shipping missile. Only the F-111C is equipped with a precision bombing laser designation capability.

4 RF-111C Strike Reconnaissance Aircraft: for aerial photographic reconnaissance and battle damage assessment.

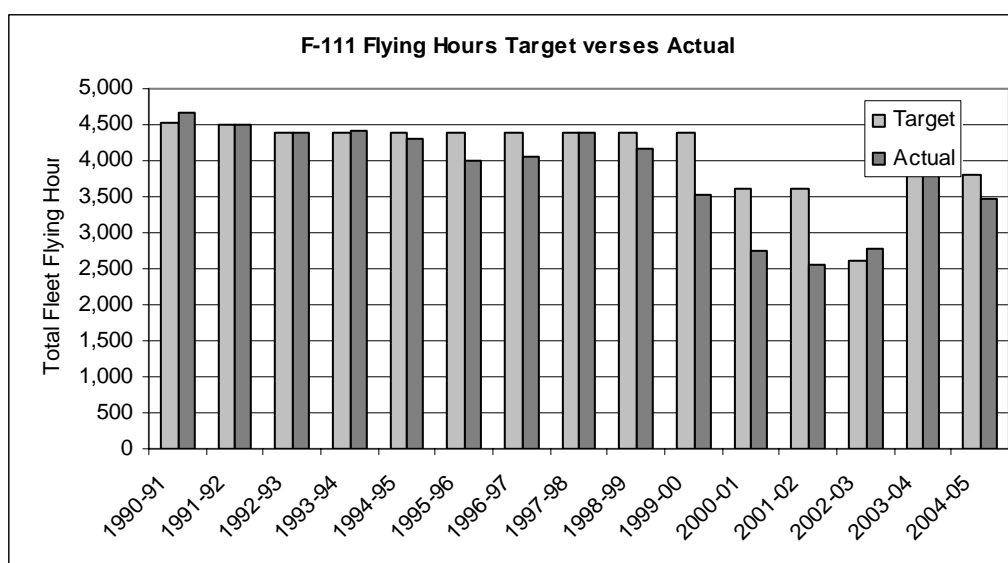
Issues:

- The F-111 fleet has been in service since the early seventies and the RAAF is now the sole operator of the aircraft. Current planning is to retire the aircraft around 2010 assuming that the development of the AP-3C and F/A-18 fleets goes according to plan, though the RAAF has indicated a preference for an earlier retirement date.
- Projects to provide improved electronic warfare self-protection and a long-range stand-off missile capability for the fleet are both significantly delayed. A number of planned projects have been scrapped because of the advancement of the retirement date.

Past Performance of the Strike Reconnaissance part of the Air Combat Output:

	Net Cost*	Preparedness	Core Skills	Quantity
2000-01		Partially Achieved	Partially Achieved	77% 2727 hrs
2001-02		Partially Achieved	Partially Achieved	71% 2559 hrs
2002-03	\$1,856 million**	Partially Achieved	Partially Achieved	107% 2779 hrs
2003-04	\$1,804 million	Achieved	Achieved	104% 3949 hrs
2004-05	\$2,091 million	Achieved	Achieved	91% 3,469 hrs
2005-06	\$1,768 million			Target 3,800 hrs
2006-07	\$1,593 million			Target 3,800 hrs

*including both Strike Reconnaissance and Tactical Fighter components. **Estimate only.



Output 4.1 Air Combat (Part 2 - Tactical Fighter)

Force Structure & Role:

71 F/A-18 Fighter Aircraft: these 1980s vintage US designed and Australian assembled aircraft provide a capability for; air-defence using short and medium range air-to-air missiles, tactical air support and land strike using laser guided and unguided bombs, maritime strike using the Harpoon anti-shipping missile, and air reconnaissance.

33 Hawk Lead-in-Fighters (LIF): these recently acquired UK made jet trainers provide a training capability for both the F-111 and F/A-18 aircraft. The Hawks replace the now retired Macchi jet trainers.

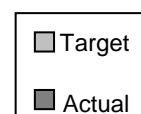
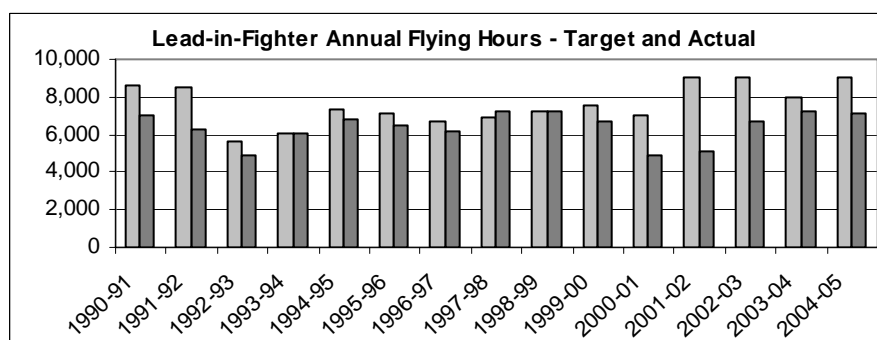
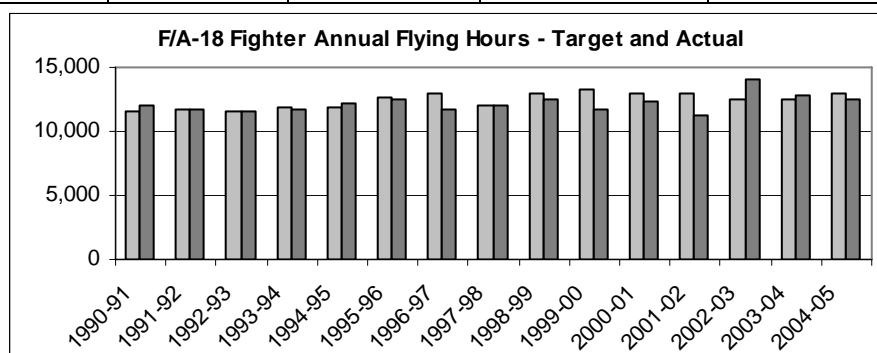
4 PC-9 Forward Air Control aircraft: used to designate targets for the F/A-18 aircraft.

Issues:

- The next phase of the F/A-18 Hornet Upgrade (centre barrel replacement) was approved in 2003-04.
- Although LIF serviceability has been steadily improving in recent years, the rate of effort fell below the budgeted target again in 2004-05.

Past Performance of the Tactical Fighter part of the Air Combat Output:

	Net Cost \$'000	Preparedness	Core Skills	Quantity	
				F/A-18	LIF
2000-01		Achieved	Partially Achieved	95% 12,331 hrs	70% 4917 hrs
2001-02	-	Achieved	Partially Achieved	87% 11,287 hrs	56% 5057 hrs
2002-03	\$1,856 m (estimate only)	Achieved	Substantially Achieved	113% 14,007 hrs	74% 6691 hrs
2003-04	\$1,804 m	Achieved	Achieved	103% 12,820 hours	91% 8,000 hours
2004-05	\$2,091 million	Achieved	Achieved	96% 12,467 hours	79% 7,094 hours
2005-06	\$1,768 million			Target 13,000 hours	Target 9,000 hours
2006-07	\$1,593 million			Target 13,000 hours	Target 8,000 hours



Output 4.2 Combat Support of Air Operations (Air Force Capabilities)

Force Structure & Role: Details about this Output are difficult to find beyond that it comprises

2 x Combat Support Wings,

1 x Expeditionary Combat Support Wing,

1 x Combat Reserve Wing,

1 x Health Services Wing and

1 x Air Field Defence Wing.

Its role is to provide 'operations support activities required to support expeditionary air bases within Australia and overseas in contingencies, and maintain operating bases day-today in Australia'.

Issues:

- According to the 2004-05 DAR: Overseas commitments continue to place significant pressure on training programs. The training opportunities available to Air Force personnel embedded in the Corporate Services and Infrastructure Group were limited by the restructure of the group's business practices.

Past Performance (Annual Report):

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Partially Achieved	Partially Achieved	Partially Achieved
2001-02		Partially Achieved	Partially Achieved	Partially Achieved
2002-03	\$435 million (estimate only)	Achieved	Substantially Achieved	Partially Achieved
2003-04	\$632 million	Achieved	Achieved	Achieved
2004-05	\$678 million	Achieved	Partially Achieved	Achieved
2005-06	\$777 million			
2006-07	\$954 million			

Output 4.3 Surveillance and Response Operations, Surveillance component (Air Force Capabilities)

Force Structure & Role:

10 x Air Traffic Radar: including 9 fixed radar and one mobile, for the control of ADF air traffic.

4 x Tactical Air Defence Radar: ground based radar to detect hostile and own aircraft.

JORN Over the Horizon Radar network: Operational over-the-horizon radar network including radar sites Laverton Western Australia and Longreach QLD, and seventeen coastal beacons in the north of Australian and Christmas Island.

The network is operated from the **Jindalee Operational Radar Network Coordination Centre** in Edinburgh SA and can detect both sea and air-borne moving objects.

The capability for strategic surveillance provides sensors and battle space management elements as support for wide-area aerospace surveillance, air defence, airspace control, and battle space management.

Issues:

- In 2004-05 the four tactical air defence radars were beyond their planned withdrawal date. They are being replaced by project Air 5375.
- The \$1.2 billion JORN network commenced operation in May 2003 and has achieved 100% of directed hours since then.

Past Performance of surveillance component of Surveillance and Response Operations

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Partially Achieved	Partially Achieved	Partially Achieved*
2001-02		Partially Achieved	Partially Achieved	Partially Achieved*
2002-03	\$352 million (estimate only)	Substantially Achieved	Substantially Achieved	Substantially Achieved*
2003-04	\$592 million	Achieved	Achieved	Substantially Achieved*
2004-05	\$1,098 million**	Achieved	Achieved	Substantially Achieved*
2005-06	\$1,132 million**			
2006-07	\$1,181 million**			*Qualitative Assessment by ASPI

** Total net cost of Surveillance and Response Operations Output

Output 4.3 Surveillance and Response Operations, Maritime Patrol Aircraft component (Air Force Capabilities)

Force Structure & Role:

19 AP-3C Orion: 1970s vintage US-made maritime patrol aircraft. All 19 aircraft have been upgraded to AP-3C standard through an Australian-unique upgrade program. The AP-3C undertake maritime patrol equipped with the Harpoon anti-shiping missile, the Mk46 Lightweight anti-submarine torpedo, 500lb and 2000lb mines, and expendable sonobuoys used to locate submarines. They undertake maritime surveillance, reconnaissance, offensive air support, surface & sub-surface strike, and search and survivor supply. The **3 TAP-3 Orion** training aircraft previously used for operational conversion training were retired in 2003-04. **6 AEW&C Aircraft** are being acquired under project Wedgetail.

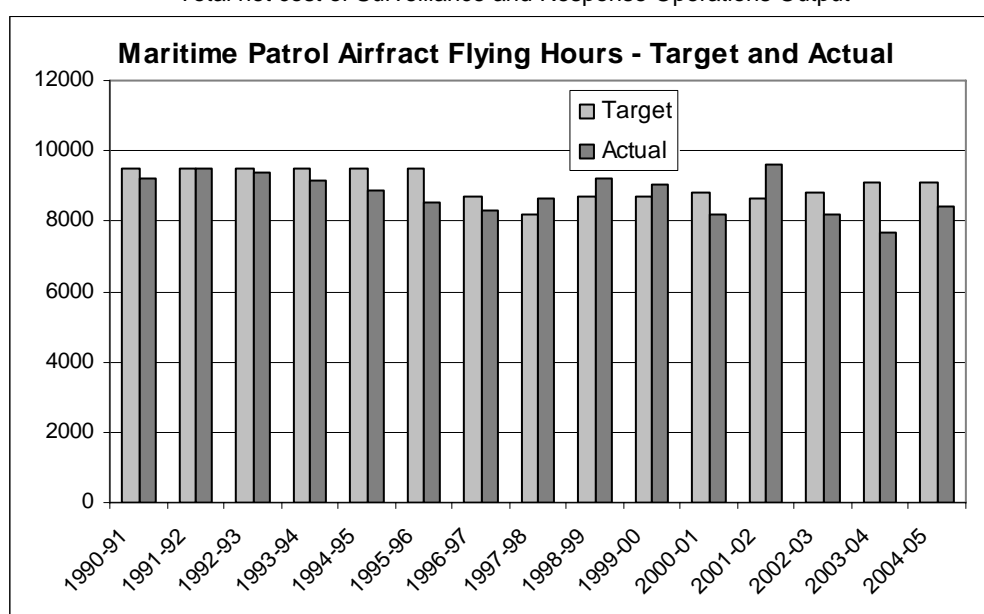
Issues:

- In 2004-05 the AP-3C fleet achieved 8,431 hours (compared with a target of 9,000 hours).
- In 2006-07 the first (one or two) of six AEW&C aircraft are due to arrive in Australia and achieve 690 flying hours.

Past Performance of Maritime Patrol Aircraft component of Surveillance and Response

	Net Cost	Preparedness	Core Skills	Quantity
2000-01		Achieved	Substantially Achieved	93% 8216 hours
2001-02		Partially Achieved	Substantially Achieved	111% 9624 hours
2002-03	\$534 million (estimate only)	Substantially Achieved	Substantially Achieved	85% 8172 hours
2003-04	\$641 million	Substantially Achieved	Substantially Achieved	85% 7,702 hours
2004-05	\$1,098 million**	Achieved	Achieved	93% 8,431 hours
2005-06	\$1,132 million**			Target 8,200 hours
2006-07	\$1,181 million**			

* Total net cost of Surveillance and Response Operations Output



Output 4.4 Airlift (Air Force Capabilities)

Force Structure & Role:

12 x C-130J Hercules & 12 x C-130H Hercules: Troop lift and transport aircraft also capable of being used in parachute operations and medical evacuation.

14 x Caribou: Tactical transport aircraft able to operate from short runways.

4 x Boeing 707: Troop transport & air-to-air refuelling, previously also used as VIP aircraft.

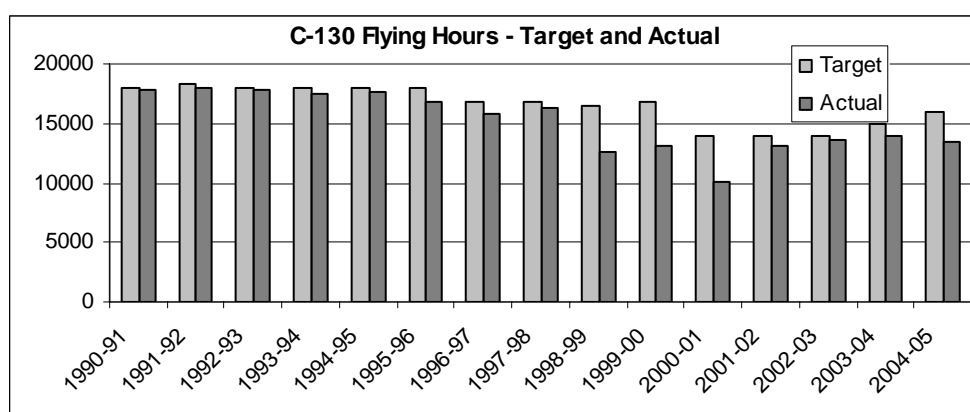
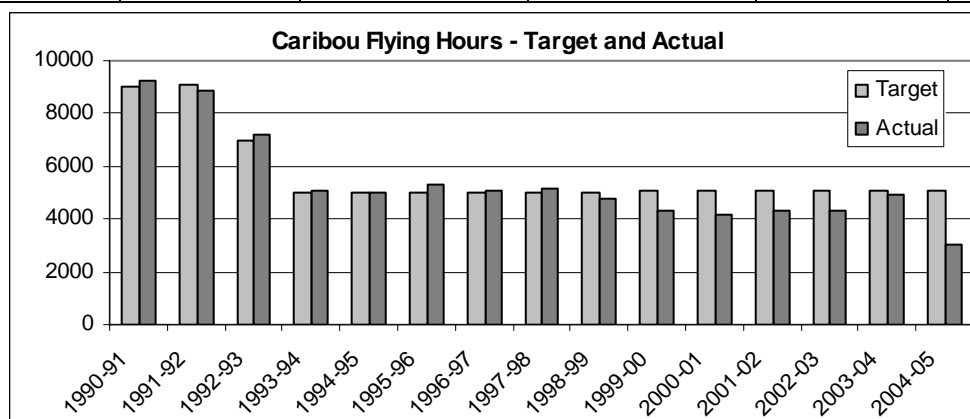
2 x Boeing 737 and 3 x CL604 Challenger: VIP aircraft.

7 x Kingair B300: navigation training aircraft (replaced the old HS748 during 2003-04).

Issues: The number of C-130 flying hours in 2006-07 will reduce to allow for the rapid introduction into service of the initial (one or two) C-17 Globemaster aircraft which are planned to fly 750 hours.

Past Performance:

	Net Cost	Preparedness	Core Skills	Quantity	
				C-130H/J	Caribou
2000-01		Partially Achieved	Partially Achieved	78% 10,054 hrs	82% 4,174 hrs
2001-02		Partially Achieved	Partially Achieved	94% 13,102 hrs	84% 4,289 hrs
2002-03	\$982 million (estimate only)	Substantially Achieved	Substantially Achieved	97% 13,622 hrs	85% 4332 hrs
2003-04	\$831 million	Substantially Achieved	Substantially Achieved	93% 13,992 hrs	97.2% 4,490 hrs
2004-05	\$947 million	Substantially Achieved	Substantially Achieved	84% 13,502 hrs	59.8% 3,038 hrs
2005-06	\$1,005 million			Target 10,000 hrs	Target 4,100 hrs
2006-07	\$1,109 million				



Output 5.1 International Policy, Activities and Engagement

Force Structure & Role:

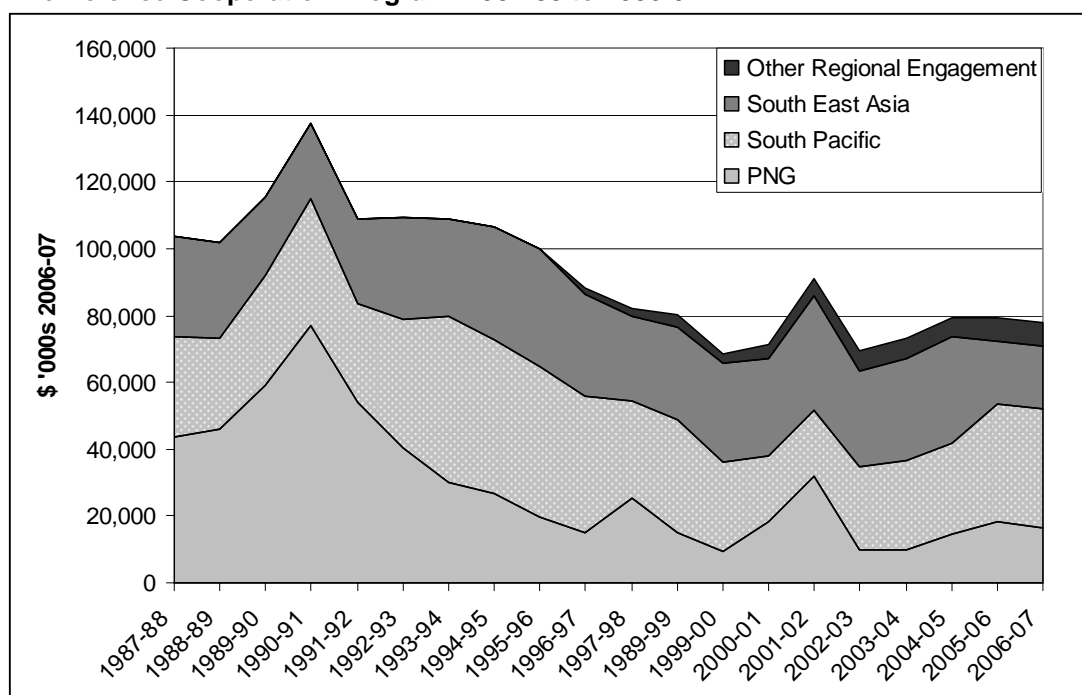
Includes International Policy Division within Russell Offices and Defence attachés in foreign countries. According to the 2005-06 PBS this Output 'provides strategic and international policy advice to the government to enable it to make sound judgements on, and develop appropriate response to, changes in Australia's strategic circumstances, and on specific issues as they arise'. It also makes recommendations to government on international engagement activities and initiatives.

Issues: In recent years, this Output has had to balance the demands of recurrent crises with the day-to-day ongoing management of defence international engagement, including the more than \$70 million a year Defence Cooperation Program that funds regional military-to-military activities and cooperation.

Past Performance: In the past two years this Output has achieved all or most of its performance targets, see recent Annual Reports for a very extensive narrative.

	2002-03	2003-04	2004-05	2005-06	2006-07
Net Cost	\$156 million (estimate only)	\$176 million	\$210 million	\$190 million	\$179 million

The Defence Cooperation Program: 1987-88 to 2006-07



Output 5.2 Strategy Policy and Military Strategy					
Force Structure & Role: This Output previously included strategic command division but this has since become part of the Joint Operations Command. As it stands, this Output provides input into the development of Defence White Papers and strategic reviews; policy advice on national, defence and military strategy; guidance for the development of long-term defence capability; defence aspects of non-proliferation and arms control; and advice and management of export controls for defence and dual use items.					
Performance Targets: The performance targets include providing the government and Defence with comprehensive and timely strategic policy advice on current and emerging strategic issues in the international, national and domestic environment that affect Defence.					
Past Performance: In the past two years this Output has achieved all or most of its performance targets, see recent Annual Reports for a very extensive narrative.					
	2002-03	2003-04	2004-05	2005-06	2005-06
Net Cost	\$ 20 million (estimate only)	\$30 million	\$36 million	\$43 million	\$45 million

Output 6: Intelligence					
Force Structure & Role: <p>Defence Intelligence Organisation (DIO) at Russell Offices in Canberra undertakes analysis of intelligence information from the full range of available resources. They produce reports, briefs and assessments on an ongoing basis as well as in response to emerging areas of concern. Topics range across military, economic, technical, scientific and political areas.</p> <p>Defence Imagery and Geospatial Organisation (DIGO) includes a HQ at Russell Offices in Canberra and the Geospatial Information Branch in Bendigo. It acquires, processes and distributes imagery and geospatial intelligence including maps and charts. DIGO also sets technical standards for imagery and geospatial products.</p> <p>Defence Signals Directorate (DSD) collects and distributes foreign signals intelligence (and is prohibited by law from collecting domestic intelligence) and provides information security advice, products and services to the government and ADF. DSD has its HQ in Russell Offices in Canberra and maintains collection facilities elsewhere.</p> <p>Defence intelligence collection and analysis activities support ADF operations, Defence policy making including force development, and support wider government decision making. For more information see http://www.defence.gov.au/intelligence/.</p> <p>Security is also the responsibility of the Intelligence and Security Group, which is the organisational element that largely aligns with this Output. A branch is devoted to this task.</p>					
Issues: The recent high operation tempo has placed additional pressures on Defence intelligence resources, and the recruiting and retention of skilled personnel remains important, especially when other agencies are undergoing expansion. The PBS also mentions substantial investment in intelligence capabilities over the next decade in a variety of areas, and the PBS implies that these initiatives are on track. Implementation of the Flood inquiry into Australian Intelligence Agencies is ongoing with this					
Past Performance: See the most recent Annual Report for an extensive narrative – overall assessment is ‘substantially achieved’.					
	2002-03	2003-04	2004-05	2005-06	2006-07
Net Cost	\$ 342 million	\$413 million	\$459 million	\$494 million	\$467 million

Section 2.6: Management Reforms and Efficiencies

[PBS Chapter Six: p. 179-216]

Chapter 6 of the PBS is divided into four parts.

- *Capability Development and Acquisition Reform*
This section details the progress to date on implementing the recommendations of the Kinnaird review of defence procurement. It says that the implementation of the recommendations is about 80 per cent complete.
- *Defence Information Environment Reforms*
There's a lot written here about the work of the Chief Information Officer group, much of which is abstract, procedural or both. However, it does say that the group will 'complete the integration of personnel and financial management systems, applications development and support resources'. See the CIO web page for more information.
- *Financial Reforms Including Financial Statements Remediation Plans*
It deals with the plans for remediating the financial statements following their qualification by the Australian National Audit Office last year. We discuss this in Section 3 of this brief.
- *Delivering Internal Services*
The third part deals with the work of the Corporate Services and Infrastructure Group, who deliver corporate support, infrastructure services including facilities acquisition and defence legal services. Once again, the discussion is mainly high level with a couple of gems of data. These include a breakdown of the \$2.2 billion spent each year by the group [Table 6.3] and a breakdown of the \$382 million facilities operations program [Table 6.4].
- *Other Management Reforms*
This sub-section discusses a range of reforms and reviews in various areas. Included are health services, education and training, financial management and business training, and the Defence Australian Public Service learning and development strategy.
- *Portfolio Evaluation*
The final part deals with the portfolio evaluations endorsed by the Defence Audit Committee and the Defence Committee for calendar years 2006 and 2007.

What happened to the Commercial Support Program?

Normally this part of the PBS contains short description of the activities planned under Defence's long standing Commercial Support Program. It appears to be no longer subject to reporting.

Section 2.7: Defence Materiel Organisation PBS [PBS Section Two: p. 243-298]

On July 1 2005 DMO became a prescribed agency under the *Financial Management and Accountability Act 1997*. Since then it has had its own independent part in the Defence portfolio PBS.

Overview

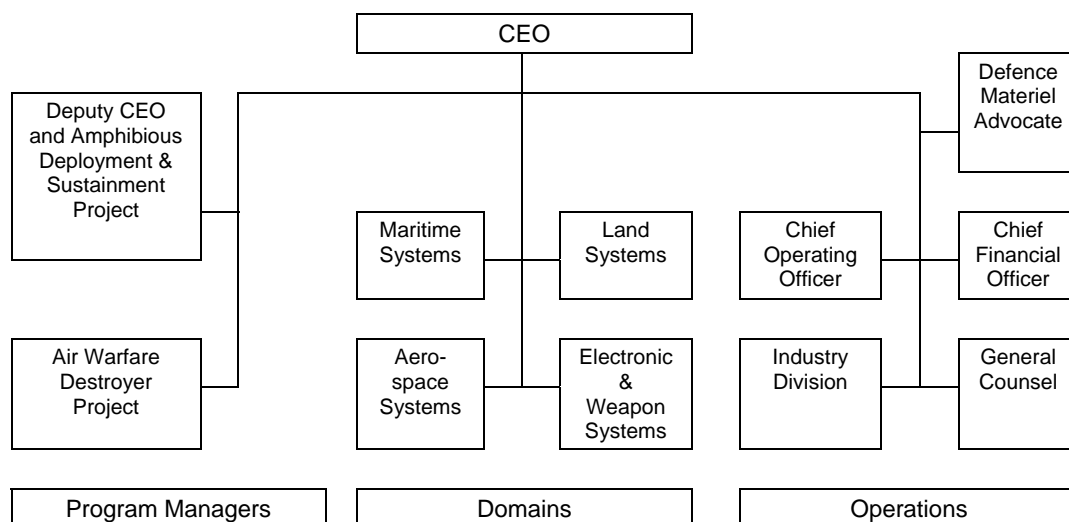
DMO acquires and supports equipment for Defence on a quasi-commercial basis. It is a totally independent entity from a financial perspective, but administratively is somewhat of an agency within an agency (hence the PBS within a PBS). The overview of the DMO PBS [pp. 245–249] starts with a description of the organisational structure and challenges facing DMO, the key points of which we detail below. It is first worth quoting the vision for the organisation:

‘...to become Australia’s premier program management and engineering services organisation, delivering projects and material support on time, on budget and to the required quality, capability and safety.’

Organisational structure

DMO is divided into eleven divisions, each headed by a band-2 SES civilian or 2-star military officer, as shown in Figure 2.7.1.

Figure 2.7.1 DMO Organisational structure



Source: 2004-05 PBS page 244

The divisions fall into three categories:

‘Domain’ divisions are set up on the traditional environmental domains of land, sea, and air, plus a division dealing with electronics and weapons. They manage and deliver the vast bulk of the 240+ major equipment acquisition projects (and a hundred or more minor acquisition projects) that DMO is responsible for, and manage the materiel support of existing capabilities – some 1000 major fleet groupings – across all domains.

'Program manager' divisions acquire high profile capabilities of strategic significance. That is, if a project is big, important (and politically sensitive) enough it gets its own dedicated division. At the moment there are only two such programs: Air Warfare Destroyer and the Amphibious Ship projects (the AEW&C project having been downgraded). No doubt the Joint Strike Fighter project will come to occupy a space in the wiring diagram over time.

'Operations' divisions provide the full range of corporate services including those of the Chief Operating Officer, Chief Financial Officer, Defence Materiel Advocate and General Counsel (legal). In addition, there is an industry division that manages DMO's relationship with industry.

A prescribed agency

The September 2003 report from the Defence Procurement Review (known usually as the Kinnaird Review) recommended a number of changes to Defence and DMO. Key among them was to establish DMO as a separate executive agency. After consideration, the government decided to take the lesser step of making DMO a 'prescribed agency', which nevertheless still delivers a high degree of autonomy.

As a prescribed agency, the CEO of DMO is accountable directly to the Minister for Defence for financial matters, hence the need for separate financial statements. On other matters, DMO still remains close to Defence from an administrative perspective; the CEO being accountable to the Chief of the Defence Force through the *Defence Act 1903* and to the Secretary through the *Public Service Act 1999*.

Resourcing

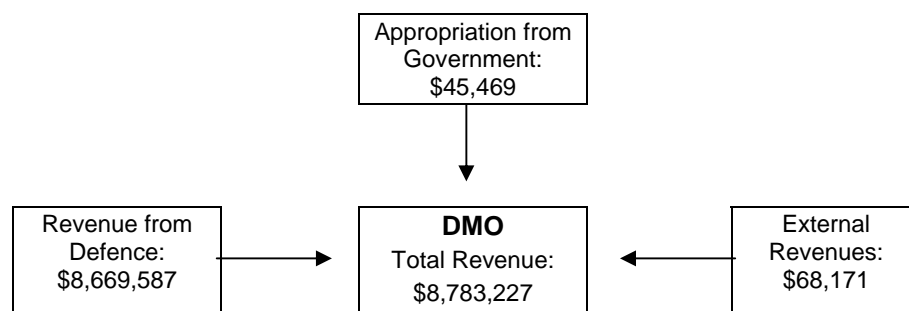
In 2006-07 the total resourcing available to DMO will be \$8,783.2 million. This comes through three separate channels, (see Figure 2.7.2):

Departmental Appropriation from government to pay for policy advice and management services. In 2006-07, this will be \$45.4 million.

Revenues from Defence in payment for acquisition and sustainment services from Defence. In 2006-07 this totals \$8,669.6 million, including \$200 million from 2005-06 retained from 2005-06 due to the timing of some payments for major projects.

Revenues from external sources including things like the disposal of commercial vehicles and payments from foreign forces for materiel services provided. In 2006-07 this will amount to \$68.171 million.

Figure 2.7.2 DMO Resources 2006-07 (\$ '000s)



Purchaser-provider arrangements [p. 254]

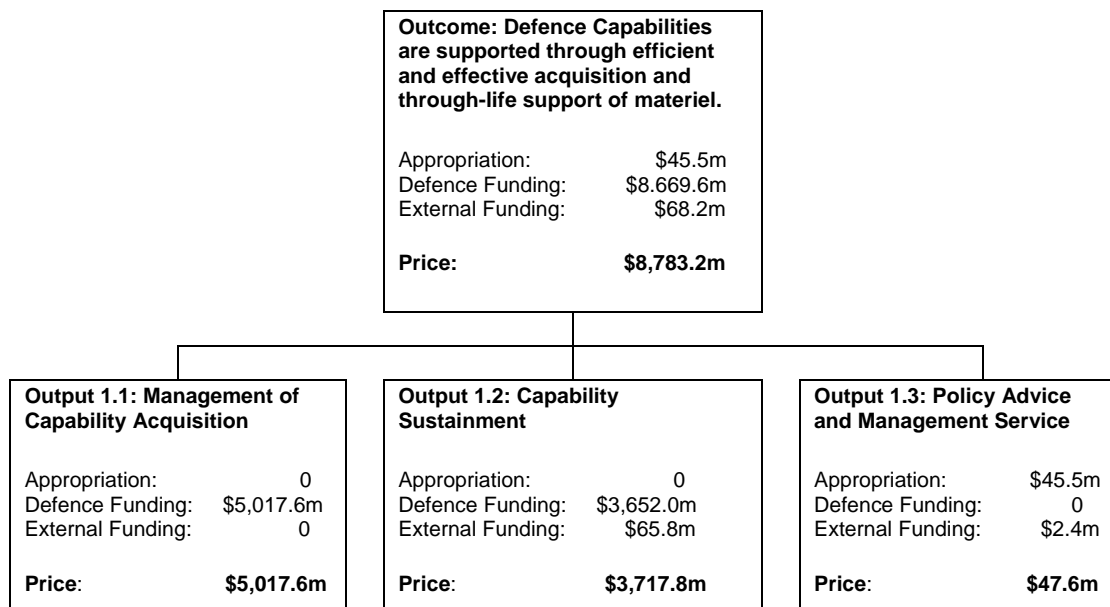
Central to the resourcing framework for DMO are purchaser-provider arrangements with Defence for acquisition and sustainment services. In 2006-07, DMO will receive \$5,017.6 million through *Materiel Acquisition Agreements* with Defence, and another \$3,652.0 million through *Materiel Sustainment Agreements*. In addition, there are several *Shared Services Agreements* (for which no payment is made) that cover such services things as payroll, accommodation, and banking services provided by Defence, and contracting policy and advice provided by the DMO.

DMO also expects to make use of some 1,677 military personnel whose salaries and other personnel expenses are counted in Defence's financial statements. DMO pays Defence for the services provided by these personnel, as a suppliers expense (rather like payments made to companies for contractor staff). In 2006-07 this amounts to \$166.7 million.

Planned Outcome Performance [p. 259]

As a prescribed agency DMO has its own Outcome/Outputs structure as detailed in Figure 2.7.3 above. As shown, the first two Outputs are predominantly funded through the Materiel Acquisition and Sustainment Agreements with Defence, while the third is mainly funded through the Departmental Appropriation. Note that DMO refers to the 'price' of outputs rather than 'net cost' as in Defence.

Figure 2.7.3 DMO Output prices 2005-06



Performance Information for Outputs [p. 259]

The PBS sets performance targets for the three DMO outputs and outlines how they will be evaluated in Table 3.2 [PBS p. 259]. We have reproduced this in Table 2.7.1 below.

Table 2.7.1 DMO performance targets and planned evaluation

Output	Performance Target	Planned evaluation of performance
Output 1.1 Management of Capability Acquisition	Project scope, schedule and budget criteria, as agreed between the CEO DMO and the Defence 'customer', and expressed in the Materiel Acquisition Agreements.	Delivery of major and minor capital equipment projects against the Materiel Acquisition Agreement scope, schedule and budget criteria.
Output 1.2 Capability Sustainment	Performance targets agreed between the DMO and Capability Managers will be consistent with enabling the ADF to deliver its operations and capability preparedness requirements as directed by the Government.	Deliver quality, timely and cost effective maintenance, repair, and supply services to the levels and standards agreed by Defence including support to on-going operations.
Output 1.3 Policy Advice and Management Services	Deliver quality policy advice and management services	Within the first year of prescription, the DMO will evaluate the delivery and quality of advice and services.

Management of Capability Acquisition – Output 1.1

Each of the 240 odd major acquisition projects undertaken by DMO has a Materiel Acquisition Agreement with Defence that specifies scope, schedule and budget. The PBS summarises the top-30 acquisition projects by expenditure in 2006-07 (see top-30 projects below). Agreements also exist to cover the minor acquisition projects DMO manages.

Capability Sustainment – Output 1.2

On pages 276 to 279, the PBS details the goals and challenges for 2006-07 in the area of capability sustainment. Such detail, which was first provided in the 2005-06 PBS, gives a useful insight into the range of activities undertaken. In general, capability sustainment include repair and maintenance, engineering, supply, configuration management and disposal, as well as the provision of spares, technical data, support and test equipment, training equipment and explosive ordnance. Importantly, it also includes the long-troubled Standard Distribution and Supply System (SDSS) under the responsibility of the Chief Operating Officer. It will be interesting to see how the Annual Report tackles the difficult job of measuring the 'quality, timely and cost effective' goals for this output. It will not be easy.

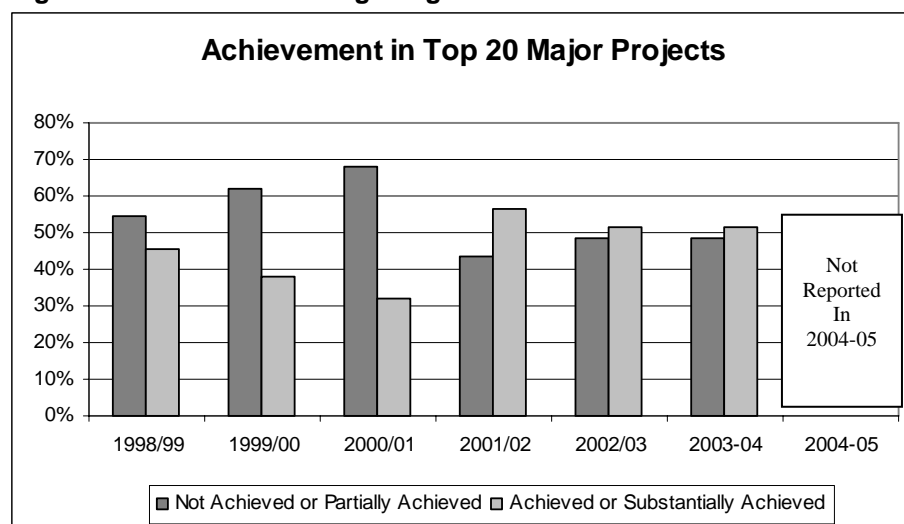
Policy Advice and Management Service – Output 1.3

This includes contracting and procurement policy advice for Defence and the DMO, industry policy and advice to Defence and the government, and corporate reporting requirements. Key performance targets for this output are given on page 280 of the PBS and related primarily to advice to government and effective corporate governance and reporting.

The 'Top Thirty' Projects

The PBS lists the top 30 major capital equipment projects by 2006–07 expenditure [PBS Table 3.3 page 260] and provides a description of each. We reproduce the top-30 projects in Table 2.7.2 overleaf. In the past we have included the assessment of project delivery from the previous Defence Annual Report, but the long-established practice of assessing projects as 'achieved', 'substantially achieved', 'partially achieved' and 'not achieved' was discontinued in the 2004-05 Report. Figure 2.7.4 pertains.

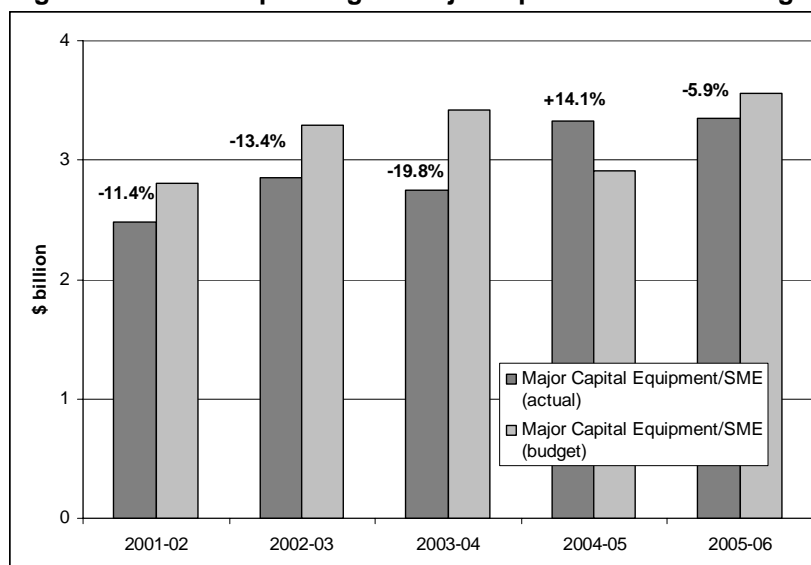
Figure 2.7.4: DMO delivering the goods?



Source: Defence Annual Reports

What we can do, however, is plot the budgeted and actual capital investment spending by DMO (Figure 2.7.5). While budget spend is an imperfect proxy for project delivery, it does say something about DMO's ability to progress according to plan. In general terms, 2004-05 and 2005-06 have seen improved performance by the organisation. Note that \$200 million unspent from 2005-06 is being held over for payment in 2006-07.

Figure 2.7.5: DMO spending its major capital investment budget?



Source: Defence Annual Reports and 2006-07 PBS

Table 2.7.2 Top 30 Defence Major Capital Equipment Projects (million \$)

Project	Project Number	Approved Project Expenditure	Spend to 30 June 2006	2006-07 Budget Estimate
Aerospace				
Heavy Airlift ⁽¹⁾	AIR 8000 Ph3	2,233	5	795
Armed Reconnaissance Helicopter	AIR 87 Ph2	1,962	1,149	312
F/A-18 Hornet Upgrade	AIR 5376 Ph2	1,503	939	210
Additional Trooplift Helicopter	AIR 9000 Ph2	1,012	269	183
ADF Air Refuelling Capability	AIR 5402	1,761	392	167
Anzac Ship Helicopter	SEA 1411 Ph1	1,006	935	64
F/A-18 Hornet Upgrade - Structural Refurb	AIR 5376 Ph3.2	177	38	53
F/A-18 Hornet Upgrade - Target Designation	AIR 5376 Ph 2.4	147	23	50
Airborne Early Warning and Control				
Airborne Early Warning and Control	AIR 5077 Ph3	3,530	2,463	439
Air Warfare Destroyer				
Aegis Combat System	SEA 4000 Ph3.1	1,329	20	219
Air Warfare Destroyer Design Activity	SEA 4000 Ph2	474	74	141
Maritime				
Armidale-class Patrol Boat	SEA 1444 Ph1	548	253	182
SM-1 Missile Replacement	SEA 1390 Ph4B	599	11	96
Anzac Ship Project	SEA 1348 Ph2	5,372	5,214	87
FFG Upgrade Implementation	SEA 1390 Ph2	1,480	1,008	74
Anti-Ship Missile Defence	SEA 1448 Ph2A	342	44	63
New Heavyweight Torpedo	SEA 1429 Ph2	430	175	51
Collins Replacement Combat System	SEA 1439 Ph4A	448	309	47
Collins-class Reliability and Sustainability	SEA 1439 Ph3	375	186	35
Land				
Tank Replacement Project	LAND 907 Ph1	557	305	157
Upgrade of M113 Armoured Vehicles	LAND 106	594	199	118
Bushranger Infantry Mobility Vehicles	LAND 116 Ph3	356	182	86
Electronic and Weapons Systems				
Electronic Warfare Self Protection for ADF a/c	AIR 5416 Ph2	295	89	62
Lightweight Torpedo Replacement	JP 2070 Ph3	269	32	54
Explosive Ordnance Reserve Stocks	JP 2085 Ph1B	207	76	49
Jindalee Operational Radar Network	JP 2025 Ph3/4	1,245	1,180	45
Lightweight Torpedo Replacement	JP 2070 Ph2	321	143	45
New Air Defence Command and Control	AIR 5333	253	91	32
Amphibious Vessels				
Maritime Operations Support Capability	SEA 1654 Ph2A	143	102	32
New Air Combat Capability				
New Air Combat Capability (SDD)	AIR 6000 JSF	213	148	30
TOTAL TOP 30 APPROVED PROJECTS		29,181	16,054	3,978
Other Approved Project Estimate		26,008	22,150	876
Projects Planned for Government Decision				229
Total Program Estimate for Major Capital		55,189	38,204	5,083
Provision for Expenses post 30 June 2007				-426
Total Funds Available				4,657

1. Project approved but funds transferred subject to finalisation of inter-agency Material Acquisition Agreement

This year, ASPI has again commissioned a team of defence specialist journalists to prepare reports on what we thought the top 24 projects for 2006–07 would be (see Section 8 of this brief). The PBS also includes a listing of previously approved top-30 projects that is useful (Tables 3.4 & 3.5 on p. 281 through 283).

Governance and Materiel Reform

The PBS provides a good explanation of the progress made in establishing DMO as a prescribed agency, including the extensive change management program that is presently underway (see page 284 of the PBS). Key points are:

- DMO was established as a prescribed agency on 1 July 2005
- Material Acquisition and Support Arrangements were in place on 1 July 2005
- An external advisory board has been established as is operating
- A ‘Material Reform’ program with six goals has been commenced:
 - Professionalise the DMO workforce
 - Re-prioritise activity into areas of high importance
 - Standardise corporate systems and work practices
 - Benchmark against the best organisations of similar scale and scope
 - Improve industry relations
 - Lead reform in Defence

When all is said and done, what really matters are results. And here we can have no complaint – at least as far as recent projects go so far. The government’s decision to bring forward \$625 million of previously deferred capital investment in this budget is a strong vote of confidence in DMO’s ability to deliver.

People

The DMO workforce is a mixture of military personnel, civilians and contractors as detailed on p. 288 of the PBS. The key information is collected in Table 2.7.3 overleaf.

The civilian and military personnel in DMO are held under slightly different arrangements. Civilians in DMO are Defence employees and the CEO of DMO has delegations from the Secretary of the Department that he exercises. The expenses associated with DMO’s civilian workforce appear in their financial statements as employee expenses.

In contrast, the military personnel in DMO are provided through a purchaser provider arrangement with Defence. In 2005-06 this will result in a payment from DMO to Defence of \$153.6 million for their services. This does not cover the full per-capita cost of the military personnel, but rather represents a payment for their services roughly corresponding to their costs exclusive of allowances and overheads specific to

their military role (and this is broadly commensurate with what would be needed to secure similar skills in the labour market). Thus, if the military fail to deliver sufficient personnel (due, for example, to operational demands or shortages) DMO has the money to hire people from outside.

Table 2.7.3: Workforce summary for DMO (average funded strength)

	2004-05 Project	2005-06 Budget	2005-06 Projected	2006-07 Budget
Navy	433	353	299	352
Army	552	501	424	484
Air Force	807	830	795	841
subtotal	1,792	1,684	1,518	1,677
Reserve	189	169	142	158
Civilian	4,478	4,448	4,426	4,620
PSP	389	338	374	374
Total				

Source: 2005-06 and 2006-07 PBS.

It's noteworthy that DMO had 2.7% less personnel in 2005-06 than anticipated, including an almost 10% shortfall in military personnel. The latter figure probably reflects the overall downturn in military numbers experienced by Defence. In 2006-07 it's anticipated that both military and civilian numbers will increase – no doubt reflecting the increased workload planned.

Budgeted Financial Statements

The budgeted financial statements for DMO appear on pages 290 to 298.

SECTION 3 – DEFENCE MANAGEMENT

Introduction

It is beyond the scope of this brief to canvass the intricacies of how the massive Defence enterprise is managed. With a workforce in excess of 90,000 spread across the continent and beyond, plus an almost \$20 billion annual budget, it presents a range of unique problems. For this reason, this section focuses on just four key areas which are of either systemic importance or topical, or both:

- organisation
- efficiency
- financial management
- transparency

Organisation

Ever since Sir Author Tange dragged the three Services and the departments of Supply and Defence (kicking and screaming) together to create the current Defence organisation in 1973, successive Ministers, Secretaries and Defence Chiefs have struggled to find a satisfactory organisational structure. Over the years, this has led to numerous reviews, reorganisations and a long string of revised organisational charts.

Most of the changes have been minor, like the creation of a Chief Information Officer in 2000. Other changes have been more significant, like the reestablishment of DMO as a prescribed agency in 2005. And some have been seismic, like the reorganisation in 1997 following the Defence Reform Program that stripped the Service Chiefs of many of their powers. Another reshuffling of the bureaucratic deckchairs is now underway, and while not earth shattering, it will have important consequences.

Figure 3.1 sets out the current and planned upper-level organisational structure of Defence. The reorganisation does two main things; it creates a headquarters and consolidates control of a range of support activities.

Australian Defence Headquarters (ADHQ)

A key recommendation of the 1997 Defence Efficiency Review (which underpinned the subsequent Defence Efficiency Program) was the formation of an Australian Defence Headquarters (ADHQ). Prior to this, the civilian and military sides of the department maintained more-or-less duplicate bureaucratic entities in several areas including personnel, capability development and strategic policy. The new ADHQ was designed to bring these disparate parts closer together under the joint responsibility of the Vice Chief of the Defence Force (VCDP) and the now defunct position of Deputy Secretary Strategy and Intelligence.

This occurred in early 1997 and remained in place until 2000 when it was discarded in favour of an arrangement broadly in line with the upper wiring diagram in Figure 3.1. The post 2000 structure had at its heart the concept of ‘Output Executives’, ‘Owner

Support Executives’ and ‘Enabling Executives’ as explained in Section 1 of this Brief. It should be said that the decision to disband the then ADHQ was not accompanied by tears – it had never come even close to being a central headquarters for Defence. There are many reasons for this, including a failure to include critical functions like finance and personnel within its remit and, more importantly, no single person was in charge. It’s bad enough that no single person below the Minister is accountable for Defence’s performance, replicating this arrangement within the organisation perpetuated the problem.

Six years on and it’s being tried again. This time the plan has been thought through a little more carefully – the full gamut of what could make a credible claim to being a headquarters function has been pulled together including: capability development, strategy, personnel policy, finance, public affairs/coordination and operational command. This is a positive initiative. Although there have been some improvements in recent years, these various functions have historically lacked coordination both administratively and from a policy perspective. The (re)creation of an ADHQ has the potential to further improve the higher-level management of Defence. There are, however, two problems.

First, it appears once again that no single person will be responsible and accountable for the ADHQ. Moreover, rather than impose a ‘junior diarchy’, as in the last incarnation of ADHQ, the proposal is to have a management committee made up of the senior people from within the headquarters.

As if Defence need yet another committee. Someone must be put in charge of the new headquarters if it is to work. Because ADHQ includes operational command in its responsibilities, the obvious choice is the VCDF (since a civilian cannot sit in the chain of command). But he already has a day job. Alternatively, the command function could be hived off and a civilian put in charge. If necessary a new civilian or military position penultimate to the diarchy could be created – a Deputy Chief or Under Secretary. Given the proliferation of senior sirs (especially on the civilian side) over the last decade, the cost could be recovered by recombining the roles of a couple of deputy secretaries. Unfortunately, it looks as though it’s just too hard to decide whether a suit or uniform should be first among equals below the diarchy.

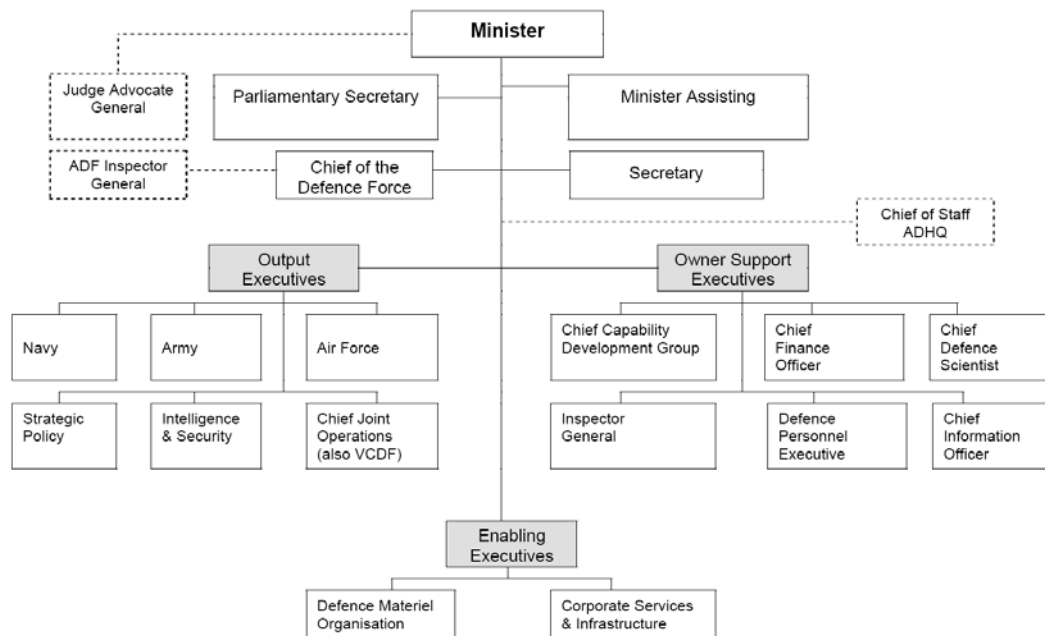
Second, the new scheme for the ADHQ leaves the Service Chiefs on the outer, with no defined role in the day-to-day management of Defence beyond their presence in the monthly fourteen-member Defence Committee. Moreover, the reorganisation as a whole leaves unassailed the fundamental flaw in the current structure – the Service Chiefs still don’t control the resources necessary to deliver the capabilities they are nominally accountable for.

Defence Support Group

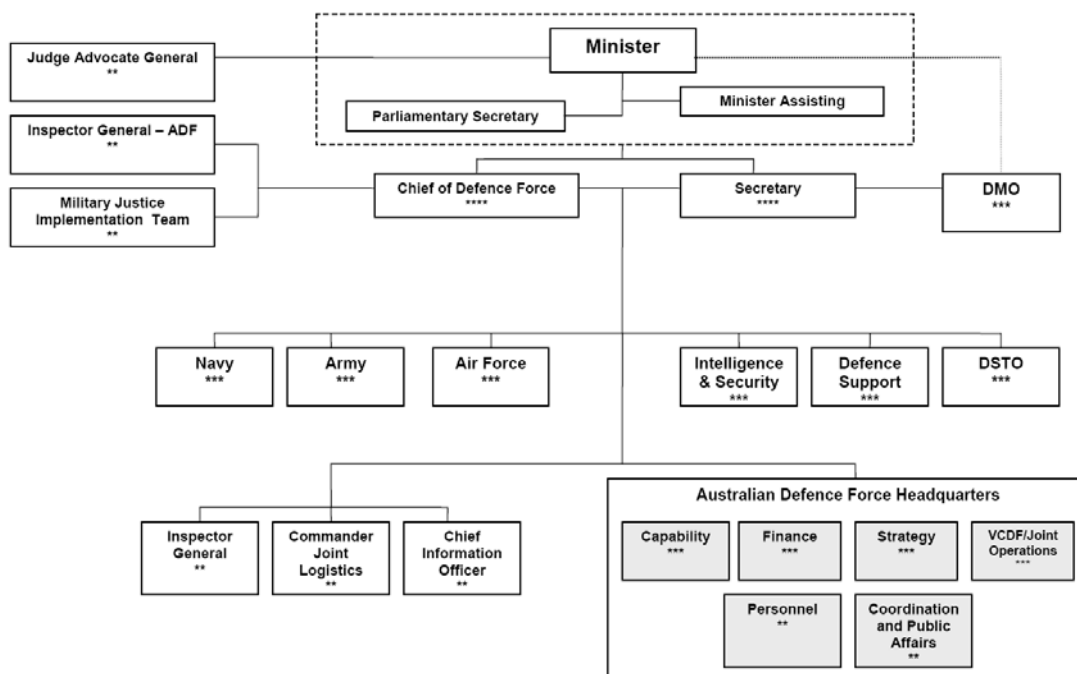
The reorganisation bundles together a range of support functions under a single span of control. Whether this will make much of a difference remains unclear. There are very few synergies apparent in the new arrangement, so it’s unlikely that efficiencies will arise simply from the new structure alone. But it does create a big fat target for savings.

Figure 3.1: Current and planned Defence organisational structure

Current:



Future:



Efficiency

This year's budget contained yet another instalment of efficiency and savings measures. Table 3.2 shows the cumulative impact of the initiatives since 2001-02. The initiatives take two forms. The first two items, the White Paper savings and administrative savings measures, are redirected back into Defence to offset costs in other areas. The last four items have effectively been sliced off Defence's bottom line.

Table 3.2: Efficiency measures and savings Targets of Defence

\$m	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	after
White Paper Savings Initiatives	50	200	200	200	200	200	200	200	200	200
Administrative Savings Targets			50	100	150	175	200	200	200	200
Extra Administrative Savings						70	60	12		
Progressive Efficiency Dividend ¹					3	16	36	59	85	+ \$30 p.a.
Absorbed Budget Measures 2005/06					65	78	46	28	?	?
Rationalisation of Command/Control						6	13	21	31	31
Total	50	200	250	300	418	545	555	520	516	547+

¹After 2009-10 the efficiency dividend will continue to grow by roughly \$30 million per annum

Adding up the various initiatives, a somewhat forbidding figure of more than half a billion dollars per annum emerges. So how are these various savings achieved?

How will Defence make the savings?

White Paper Savings Initiatives

In the case of the White Paper Savings Initiatives, the money was mainly recovered by 'rebaselining' the individual internal Defence budgets in one hit. Where the impact was felt, or how the savings were achieved, remains unclear.

Administrative Savings Initiatives

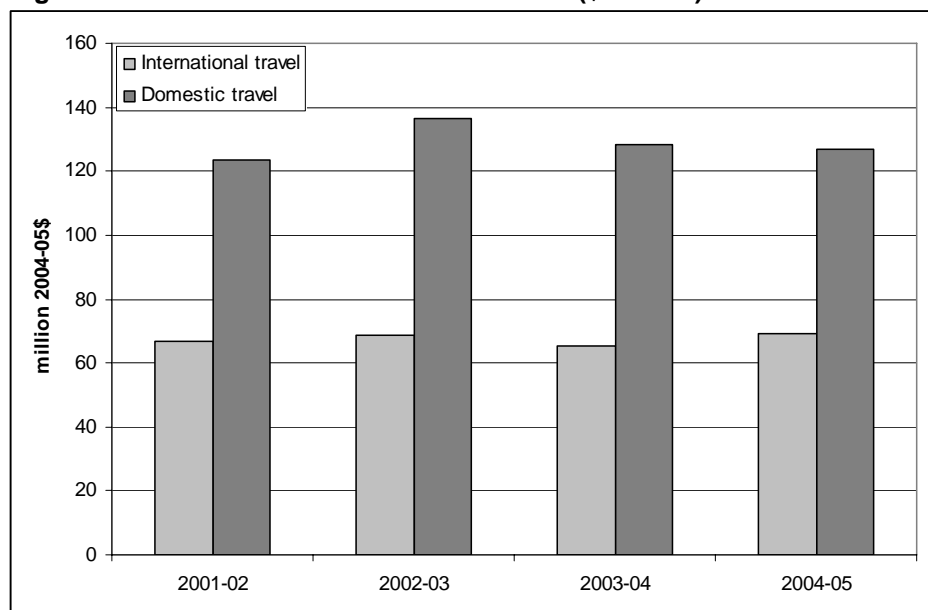
The detailed steps for the Administrative Savings Initiatives are detailed in Table 2.15 of the PBS which lists 29 separate initiatives that have or will deliver savings under the administrative savings program. As can be seen, Defence is actually doing a little better than required so far. For example in 2003-04, they exceeded the target for administrative savings by 20%, in 2004-05 by 30% and in 2005-06 by 8%. One of the reasons for this is that Defence continues to improve its housekeeping through both reduced administrative spending and better day-to-day business processes.

Unfortunately, we cannot put the vast majority of the administrative savings measures in any sort of context because we lack a detailed breakdown of how Defence spends its money. For example, it's hard to say anything about the \$20.4 million dollar reduction in 'non-operational overseas positions' without knowing how much is spent on overseas positions. We can, however, examine the annual savings planned for

domestic (\$11.5 million) and international (\$7.4 million) travel expenses because the expenses in both these areas are disclosed in the Defence annual report.

Figure 3.1 charts international and domestic travel expenses for the last four years expressed in 2004-05. The data goes back two years before the program of savings measures commenced in 2003-04. It shows that savings in 2003-04 and 2004-05 totalled \$11.6 million and \$9.5 million respectively (compared with a target of \$18.9 million). Perhaps the savings were relative to an expected rise?

Figure 3.1: International and domestic travel (\$ million)



Source: Various Defence Annual Reports.

Finally, it's worth pausing to see where the money is going. Table 2.16 in the PBS details the redirection of funds. While a lot of the money has gone directly to capability in the form of military pay and allowances, a significant amount of the money is being ploughed back in to cover administrative expenses.

Rationalisation of ADF Command and Control Infrastructure

This is a genuine efficiency dividend; same output, less input. Defence undertook a review of its network of headquarters and found that they could get by with 241 fewer personnel. Credit is due for this self-generated efficiency.

Other Savings Measures

It remains unclear how Defence will cover the shortfall from the *Extra Administrative Savings*, *Progressive Efficiency Dividend* and *Absorbed Budget Measures*. Ultimately it's for them to work out how to deliver these and the earlier administrative savings. With the more stringent internal budgeting framework that's developed over the last several years, they are much better placed to do so than in the past.

With so much money flowing into Defence, the danger is that a 'magic pudding' is created as successive efficiency measures do little more than strip back the steady accretion of administrative overheads. Despite the churn, this is probably not a bad way to protect the taxpayer – provided the demand for savings does not let up.

Financial management

In recent years, media reports of an ‘\$8 billion Defence black hole’ have given the impression that the department had somehow misplaced, or perhaps lost outright, assets worth around half of their annual budget. The truth, while concerning, is hardly that dire.

At the centre of the matter was the qualification of Defence’s financial statements for 2003-04 and 2004-05 by the Australian National Audit office (ANAO). The form of the qualification was that auditor was ‘unable to, and [did] not express an opinion, as to whether the Statements’:

- had been prepared in accordance with the orders made under the *Financial and Management and Accountability Act 1997* (FMA), and
- gave a true and fair view of Defence’s financial position, performance and cash flows for the year.

These are more serious qualifications than the ‘except for’ qualifications that arose in 2001-02 and 2002-03. These essentially gave an assessment of ‘true and fair’ with a cautionary caveat due to identified uncertainties. In addition, and as was the case in 2002-03, the Department was found to have been in breach of section 48 of the FMA on a technical matter relating to the administration of ‘Special Accounts’. The Secretary of the Department of Defence agreed with the ANAO assessment.

In comparison, of the 252 Australian Government entities audited by the ANAO in 2005, only four had their financial statements qualified and only eighteen breached the FMA. What’s more, the time taken to finalise Defence’s financial statements contributed to a delay in the finalisation of the consolidated financial statements for the Australian Government until 12 December 2005. The uncertainties in Defence’s financial statements contributed to (but were not the sole source of) the ‘limitation of scope’ qualification of the government’s overall consolidated financial statements for 2004-05.

Table 3.1 tracks Defence’s audit outcomes over recent years. While a clear deterioration in the audit outcomes is apparent, this probably has as much to do with an increasingly accurate understanding of the true situation (and the growing rigour of the auditor) than any dramatic backward step in the substantive situation.

Table 3.1: Defence audit outcomes

Year	Outcome
pre 2000-01	no qualification
2001-02	‘except for’ qualification
2002-03	‘except for’ qualification and breach of section 48 of the FMA
2003-04	‘unable to form an opinion’ qualification and breach of section 48 of the FMA
2004-05	‘unable to form an opinion’ qualification and breach of section 48 of the FMA

Source: Various Defence Annual Reports

As in previous years, the specific problem in 2004-05 was that Defence and the ANAO were unable to resolve significant uncertainties in the values assigned to assets and liabilities.

Does it really matter?

Yes and no. In one sense, whether Defence can precisely account for the *value* of all its assets and liabilities is of little importance. In four years of closely watching the Defence budget, this author has yet to see a single datum emerge from the accounting of assets and liabilities that might usefully inform the management of the defence dollar. After all, if Defence's property holdings were to rise in value by 50% or its military equipment fall in value by 50% what action would need to be taken? If anything, what we have is a compliance nightmare (at least in so far as the mere question of valuation goes) that has diverted resources and energy away from much more important areas of financial management. The only possible exception is the better understanding of employee entitlements that's emerged, but that could have been achieved without all the accrual rigmarole. It's hard to see what will really have been gained even once the battle to tame Defence's rogue balance sheet is won.

But in another sense, it does matter a very great deal. It is symptomatic of a failure to properly manage billions of dollars of assets. The May 2006 ANAO report into the Procurement of Explosive Ordnance for the ADF found that action is needed in respect of: procurement planning, financial management, inventory management and safety & suitability for service assessments for explosive ordnance. In short, pretty much the entire life-cycle of some \$2 billion worth of assets is not being managed as well as it should. Extraordinarily, \$1.04 billion of ordnance was classified as other than 'serviceable'.

When will it be fixed?

Defence has been working to fix its management information systems and bed-down its business processes since the late 1990s following the Defence Efficiency Review. It's a story of repeated underestimation of the task, growing delays and increasing costs. In early 2005 Defence said that it will probably take at least two or three more years before an unqualified audit report can be achieved. The PBS [pp. 187-205] includes an entire section devoted to the remediation of the financial statements. It lists the results achieved in 2005-06 and details the activities and major outcomes planned for 2006-07.

Transparency

The first two ASPI Budget Briefs included extensive suggestions of how to improve Defence budget transparency. We like to think that this contributed in some way to the very substantial increase in clarity and disclosure in subsequent Defence budget papers.

Because Defence continues to improve its disclosure of Defence budget information, there is little point in reiterating previous year's detailed suggestions that remain on the public record. Instead, we've prepared Table 7.1 overleaf that focuses on a number of key areas where we think that the public interest would be better served by greater disclosure.

Table 7.1 Defence Budget Transparency

Suggestion	Status
1. Routinely disclose casualty and medical discharge statistics for ADF deployments.	Nil except through parliamentary scrutiny.
2 Set targets, and report on, the cost, time and technical performance of projects. Just as the US and UK do in a routine and comprehensive manner.	Despite some improvement in the level of detail provided on capital investment, clear targets remain undisclosed.
3 Set quantitative performance targets for the activity levels of platforms and units.	Air Force, Navy Aviation and Army Aviation have targets for activity levels. Navy is yet to do so aside from the Patrol Boat days provided for civil surveillance.
4 Set quantitative performance targets for the availability of platforms and units in Outputs.	Navy has availability targets but Air Force and Army are yet to do so.
5 Disclose ADF permanent, Reserve and Civilian personnel numbers for each Output.	Not Achieved.
6 Provide the breakdown of civilian and military personnel numbers across the Defence Groups.	This information has been provided since the 2004-05 PAES and 2003-04 DAR for civilian personnel. Military personnel numbers remain undisclosed.
7 Quantify personnel shortages.	Often disclosed through the Senate Estimates process. Last disclosure was in mid-2004.

SECTION 4 – WHITE PAPER UPDATE

The 2000 White Paper set out a decade long program of capability development – the Defence Capability Plan (DCP) – backed up with a commitment to 3% *average* annual real growth in Defence spending for ten years. In this budget, the government extended its commitment to long-term defence spending by promising to boost spending by 3% real growth *compounding* from 2010-11 to 2015-16. In this section we examine progress to date on delivering the goals of the 2000 White Paper, explore the consequences of the extended funding commitment and track the progress of the DCP.

White Paper Funding

The 2000 White Paper provided \$28.5 billion in additional funding to Defence (as measured in 2006-07 prices). This funding formed the basis of 3% average real growth across the decade. Since then, the schedule of spending has undergone several revisions. Commencing in 2004-05, the PBS has detailed the changes [Table 1.3, page 8] between the original funding and ongoing revisions. Importantly, the changes since 2000 represent a rearrangement of *when* money is spent, rather than *how much* is available. Moreover, the changes have not arisen due to budget pressures. Instead, it's Defence and Industry's ability (or inability) to deliver equipment that's driven changes to the original schedule.

What's in the White Paper money?

The White Paper provided money in two broad categories (all figures are in 2006-07 prices):

Major Capital Investment: \$19.8 billion

The original White Paper provided \$19.6 billion for major capital equipment. Ongoing revisions to the plan maintain this amount in real terms, although inflation and exchange rate variations have moved the nominal total to \$19.8 billion. This money goes into the DCP.

Operating and Personnel Costs: \$8.7 billion

There's \$2.9 billion to cover the through-life support costs of new capabilities that will enter service as a result of the DCP. Because of delays in the delivery of projects, some of this spending was deferred in the revision of the funding in 2004-05. In addition, the White Paper provides \$1 billion to adjust the operating cost baseline in the Defence budget. This includes offsetting shortfalls in Defence Reform Program (DRP) savings, and fixing the logistics shortfall caused by redirecting DRP savings in 1999 to increase the target strength of the ADF from 42,500 to 50,000.

The White Paper also included \$4.8 billion to cover an expected annual 2% growth (above inflation) in personnel costs. Under the current funding model, the Defence budget is indexed annually on the basis of the implicit non-farm GDP deflator (NFGDP) which tends to fall below the real increase in wages and salaries (see Section 2.4 of this brief). Recognising this, the White Paper promised to make up the difference between the routine indexation received and the real cost of attracting and retaining personnel through a 2% increase in per-capita personnel expenses. In the

2004-05 budget, additional funding was provided to cover a 2.5% per annum real increase in military personnel expenses. Unfortunately, it is not possible to separately identify the personnel and operating cost components of the White Paper funding.

So what's changed?

The original White Paper funding profile appears in Figure 4.1.1 and the latest profile appears in Figure 4.1.2. In producing these graphs, we've assumed that the underlying Defence budget (exclusive of deferred spending that has been shifted into those last three years in the revised plan) remains constant in real terms beyond the end of the decade.

There were a number of intermediate steps between the spending profiles in Figure 4.1 and 4.2. To begin with, investment funds in the DCP were reprogrammed (deferred) into the future in the 2002-03, 2003-04 and 2004-05 budgets. In total, more than \$2 billion in planned investment was put off because Defence and industry were unable to deliver the aggressive investment ramp-up planned back in 2000. Then, in last year's budget, things began to turn around. The DMO performed strongly enough in 2004-05 to provide sufficient confidence for \$300 million to be brought back forward for 2005-06. In this budget, another \$625 billion of spending has been brought forward, and DMO looks like achieving its goals for the year. In tandem with the changes to the DCP, the associated personnel and operating costs have been shifted back and forth, although this has a small impact on the overall funding envelope.

The good news is that these latest changes to the DCP bring spending – and therefore capability delivery – closer to the original scheme, see Figure 4.3. Having said that, the next couple of years will demand a steep increase in the rate at which equipment is delivered. That is, in part, because this year's budget added still more projects to be delivered.

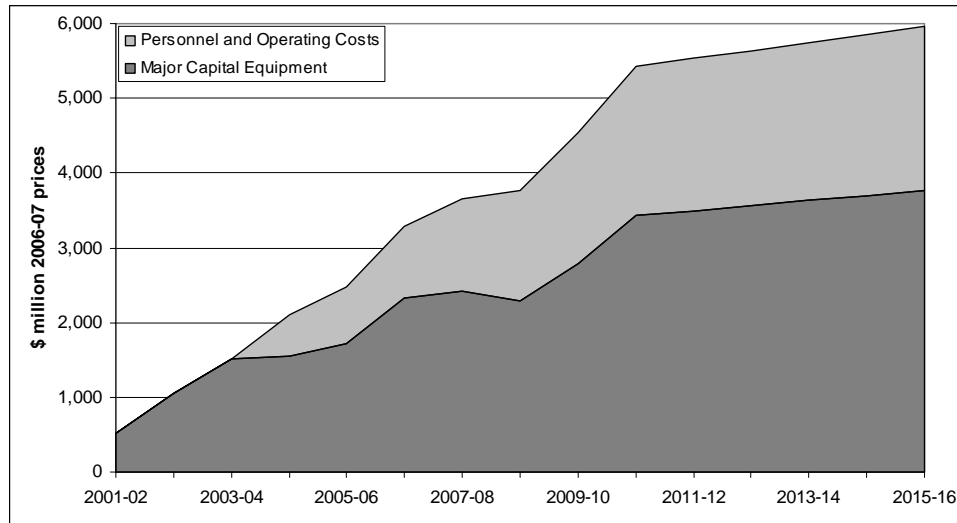
Last year we lamented that the Government had not provided a long-term funding trajectory for Defence. This year they have done so.

3% real growth out to 2015-16

The 2000 White Paper envisaged a ten-year rolling program of defence planning. Built around a new ten-year 'Defence Financial Management Plan', the clear intent was to ensure that financial and capability planning extended out a full decade so that an affordable program of defence capability could be planned and delivered. The White Paper recognised that it was difficult to do 'without a clear understanding of funding levels a decade ahead, and even beyond', hence the original commitment to 3% growth this decade. For this reason, it is surprising that it took five years for the Government to make a decision on spending post 2010.

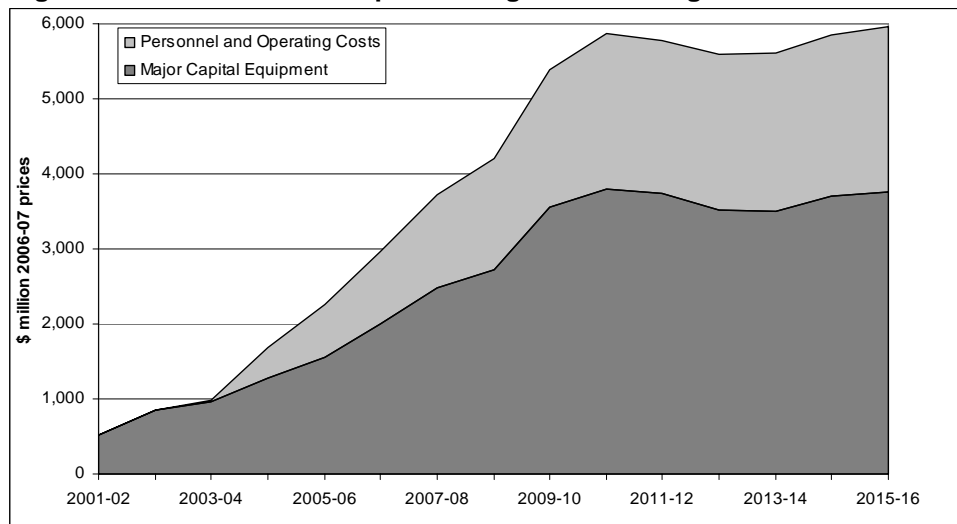
In this budget, the government has committed itself to continue to increase defence spending from 2010 to 2015 at a rate of 3% above inflation *compounding*. This is more generous than the *average* growth delivered back in 2000. We now turn to examine this new spending in detail.

Figure 4.1: White Paper funding as originally planned.



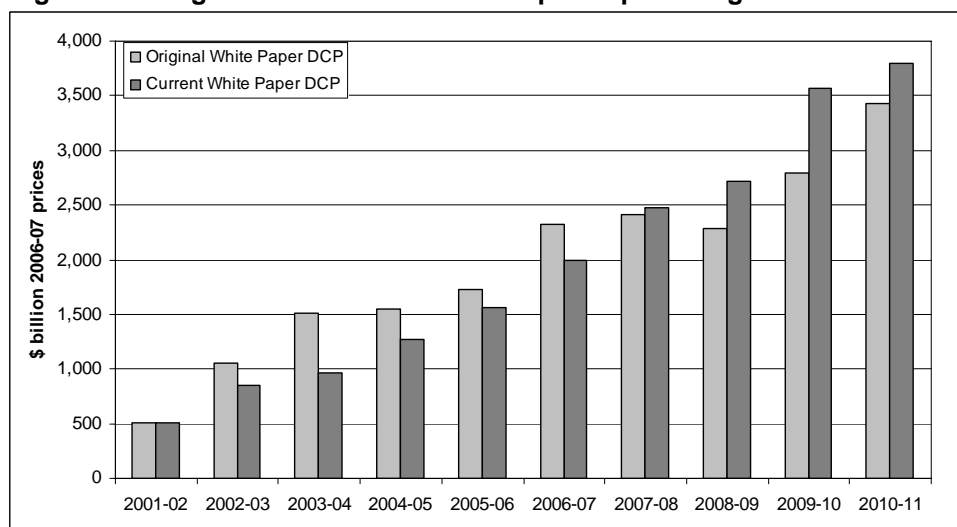
Source: Table 1.3, 2006-07 PBS

Figure 4.2: Revised White Paper funding 2006-07 Budget



Source: Table 1.3, 2006-07 PBS

Figure 4.3: Original and Revised White Paper Capital Program



Source: Table 1.3, 2006-07 PBS

An extra \$10.7 billion over five years

The 3% real growth past 2010-11 takes the form of a five year ramp of additional funding totalling \$10.7 billion. This is detailed in Table 1.2 of the PBS which we reproduce below in Table 4.1.

Table 4.1: Allocation of the 3% real growth funding

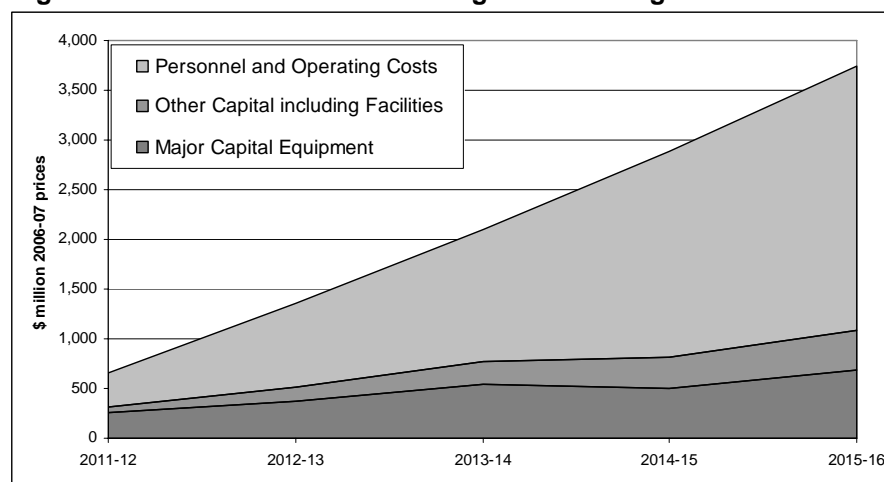
	11-12	12-13	13-14	14-15	15-16	Total
Personnel Costs	147	337	534	741	918	2678
Living-In Accommodation	48	101	159	221	290	819
Defence Capability Plan	251	374	543	499	683	2350
Major Capital Facilities Program	17	35	54	74	95	274
Other Capital Purchases	4	8	13	17	23	65
Ops Costs including for New Equipment	49	192	396	854	1160	2651
Logistics Sustainment	61	125	192	264	339	980
Facilities Ops Costs/Estate Upkeep	75	178	203	217	228	901
Total Allocation	652	1,350	2,094	2,888	3,735	10,719

Source: Table 1.2, 2006-07 PBS

The first point to make about the allocation of new money past 2010-11 is the extent to which it has been divided across a wide range of activities. This makes good sense. Over the last five years Defence has repeatedly come back to ask for more cash to fund personnel, logistics and estate. Capital investment alone is not enough for an operational defence force. By spreading the new money across the portfolio as in Table 4.1, there is a much better chance that the budget next decade will achieve harmony between personnel, operating and capital investment spending.

To contrast the difference with the original White Paper funding, we've plotted in Figure 4.4 the additional spending post 2010-11 in similar categories as in Figures 4.1 and 4.2. Less than 22% of the new funding is directed to equipment purchases in stark contrast to the 69% allocated in the 2000 White Paper.

Figure 4.4: Allocation of the 3% real growth funding



Source: Table 1.2, 2006-07 PBS

How big will the budget be next decade?

Good question. Unfortunately, the PBS does not contain the answer. To recover the total budget from the data in Table 4.1 requires knowledge of what rate of NFGDP inflation has been assumed for the period 2009-10 to 2015-16. Unfortunately, Defence were unable to oblige us with the figures. So we've had to make-do with what fragments of information we have available.

The strongest hint we have is a graph on the back of a very colourful glossy brochure issued on budget night¹. As best we can make out, it shows spending rising from around \$21.7 billion in 2010-11 to about \$26.7 billion in 2015-16. There's also a Ministerial press release that gives a final figure of \$26.7 billion. With a bit of work, this can be reconciled to within a about half a percent of the figures in Table 4.1 provided that we assume that NFGDP inflation is running at 1.9% per annum over the period and if we tolerate a deviation from the figures in the glossy brochure of one and one-half percent. The trick appears to be to assume that the 3% growth occurs on a baseline corrected for the reprogramming of DCP investment funds (which is reasonable).

Moreover, it's possible to recover the spending figure for 2010-11 from that in PBS for 2009-10 (the last figure available in the forward estimates) to within one-third of one percent by correcting for inflation and accounting for White Paper funding in those two years. Table 4.2 gives our best estimate of what defence spending will be across the next decade. To make our assumptions explicit we've included the NFGDP deflator used.

Table 4.2: Best estimate of future defence budget to 2015-16

	projected	budget estimate	forward estimate	forward estimate	forward estimate	ASPI estimate	ASPI estimate	ASPI estimate	ASPI estimate	ASPI estimate	ASPI estimate
Year	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16
\$ b	17.8	19.6	19.6	20.0	21.1	21.7	22.2	22.5	23.6	25.5	26.8
NFGDP	4.5%	2.5%	1.05%	0.77%	2.1%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%

Is it really 3% real compounding growth?

The figure you get for real growth from 2010-11 to 2015-16 depends on whether you calculate it before, or after, the addition of other 2006-07 budget measures and adjustments. If you do it before you get 3% exactly (because that's the way we constructed our estimates). If you do it after, you get 2.3% because of the skewing effect of large exchange rate shifts and a big boost in 2010-11 for the C-17 aircraft and Hardened and Networked Army initiatives. We think that it makes sense to do the calculation before.

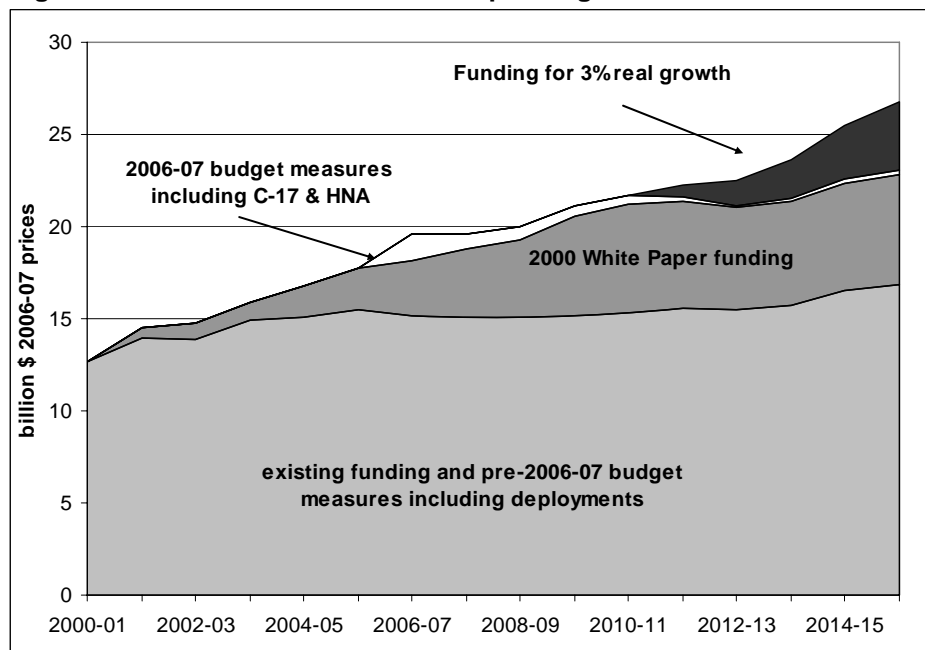
¹ Budget 2006-07: *To Defend Australia – A long term plan to protect our people, interests and values.*

As an aside, some other defence funding growth figures for recent times are: average real growth from 2000-01 to 2015-16, 3.3% per annum, and average compounding growth for the same period, 2.7%. Although these are impressive growth rates compared with the doldrums of the 1980s and 1990s, this does little more than return Australian defence spending to the post-WWII average of around 3% per annum compounding growth (See Section 5 of this brief).

Still further spending

On top of the new funding post 2010-11, and in addition to the White Paper funding, the government gave Defence extra money for a number of budget measures this year. The largest two are the \$2.2 billion purchase of C-17 strategic lift aircraft and \$1.5 billion for HNA. Adding this all up yields Figure 4.5

Figure 4.5: Best estimate of defence spending 2000-01 to 2015-16



What are the trends?

We've already noted that the additional funding post-2010-11 appears to be a balanced package, but what about the budget as a whole? We explore this question below by looking at the three canonical chunks of defence expenditure: capital investment, personnel and operating costs (= budget – capital – personnel).

Capital investment – the Defence Capability Plan

For the first time, the PBS contains a graph of capital investment across the decade [PBS Chart 3.1 p. 59]. We've used the data contained therein along with that for the White Paper [PBS Table 1.3], 3% funding growth [PBS Table 1.2] and this year's budget initiatives [PBS Table 2.3] to produce Figure 4.6. There are three things worthy of mention:

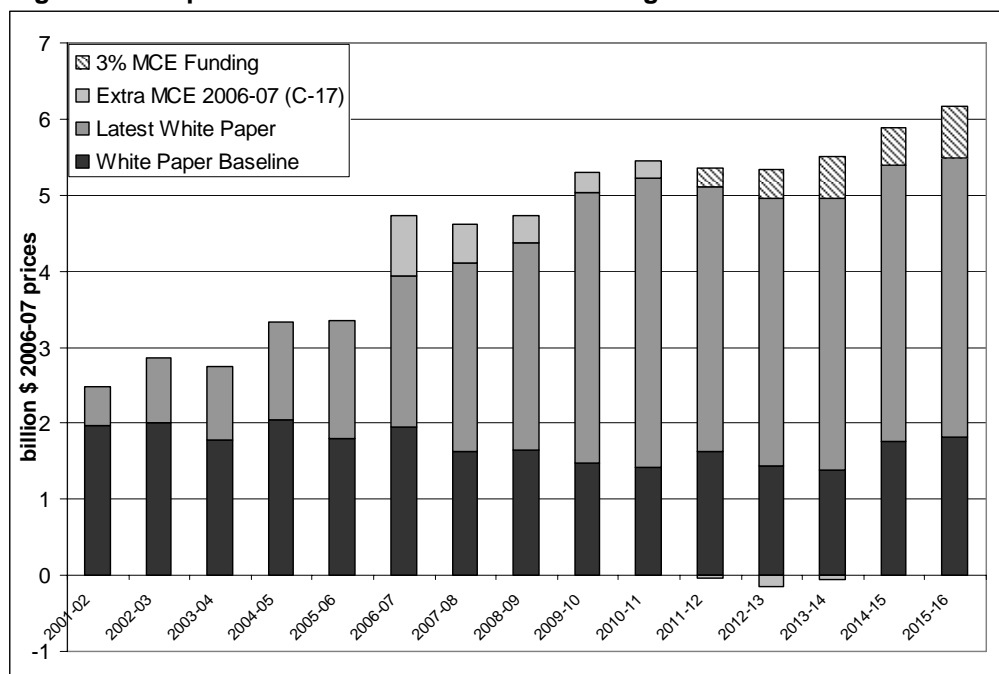
First, a substantial increase in investment spending is planned for next year. The resulting year-on-year increase amounts to a 41% jump. Fortunately around half of the

increase is accounted for by the military-off-the-shelf (actually out-of-the-factory) purchase of C-17 aircraft at a cost of almost \$800 million in 2006-07. This will see the first aircraft in-service with the RAAF by December this year. Nonetheless, and as Figure 4.6 shows, this is the first step up a very steep hill of investment spending for DMO.

Second, as we already alluded to, the relative emphasis on capital investment between the latest 3% funding measure and the 2000 White Paper is very apparent.

Third, the implied level of baseline (pre-White Paper) major capital equipment investment is less than \$2 billion per annum. This is surprisingly small given that this is out-turned (inflation adjusted data). It shows that some of what's claimed as 'new investment funds' is really just filling-in a pothole in the baseline investment budget. We explore long-term trends in investment spending in Section 2.7 of this brief, along with the performance of DMO.

Figure 4.6: Capital investment – sources of funding



Personnel costs

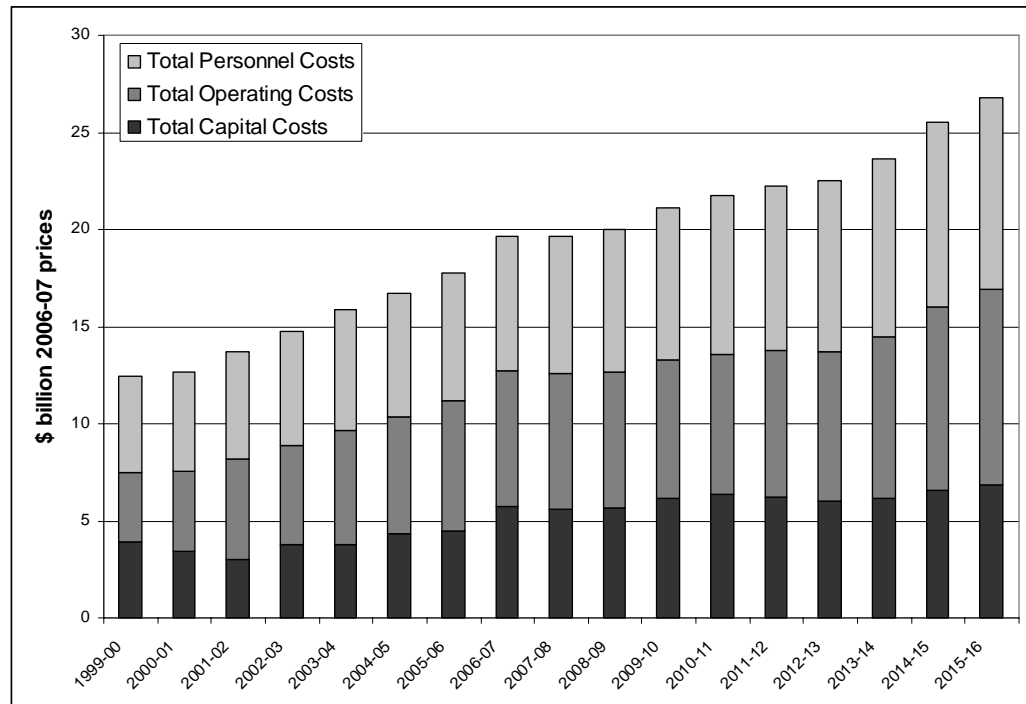
Defence is currently around 3,000 full-time military personnel below its target for next decade, which includes around 1,500 personnel for HNA. Given that personnel expenses rise 2-2.5% faster than inflation, the budget will be hit by two factors in the coming years: rising personnel costs and, hopefully, rising personnel numbers.

Assuming that the growth in numbers occurs at a steady rate of around 350 people per annum, it's possible to project the cost of personnel out to 2015-16 and in between. Doing this yields a bill of just under \$9.8 billion in a decade's time (remembering to include the DMO civilian workforce that appears as a suppliers expense on Defence's accounts). With an estimate of personnel costs and a firm figure for planned capital investment from the PBS, we can use our estimates from Table 4.2 to calculate the money left to cover operating costs. The results of this calculation are graphed in

Figure 4.7. (We've corrected for the hand-back of \$780 million in 2001-02 to give a more accurate picture of the historical data).

The steady growth of personnel expenses is apparent in the figure as is the planned growth in capital investment spending. Between these two expanding wedges sits the poor cousin – operating costs. Fortunately, it looks as though post 2010-11 the 3% growth funding allows operating costs to expand in unison with personnel and investment spending. However, it appears that operating costs are going to be squeezed between now and the end of this decade.

Figure 4.7: Estimated Personnel-Operating-Capital



Of course, it's dangerous to draw simple conclusions from a graph like Figure 4.7. Not only are the figures expressed in nominal dollars, but the recent series of overseas deployments skews the picture. These two factors could mean that the apparent squeeze is nothing to worry about. To check, we can correct for inflation and subtract the cost of military operations going back to 1999-00. In doing so, we need to be careful to isolate capital spending and assumed that 90% of non-capital deployment supplementation goes to operating costs and 10% is attributed to personnel to reflect deployment allowances etc.

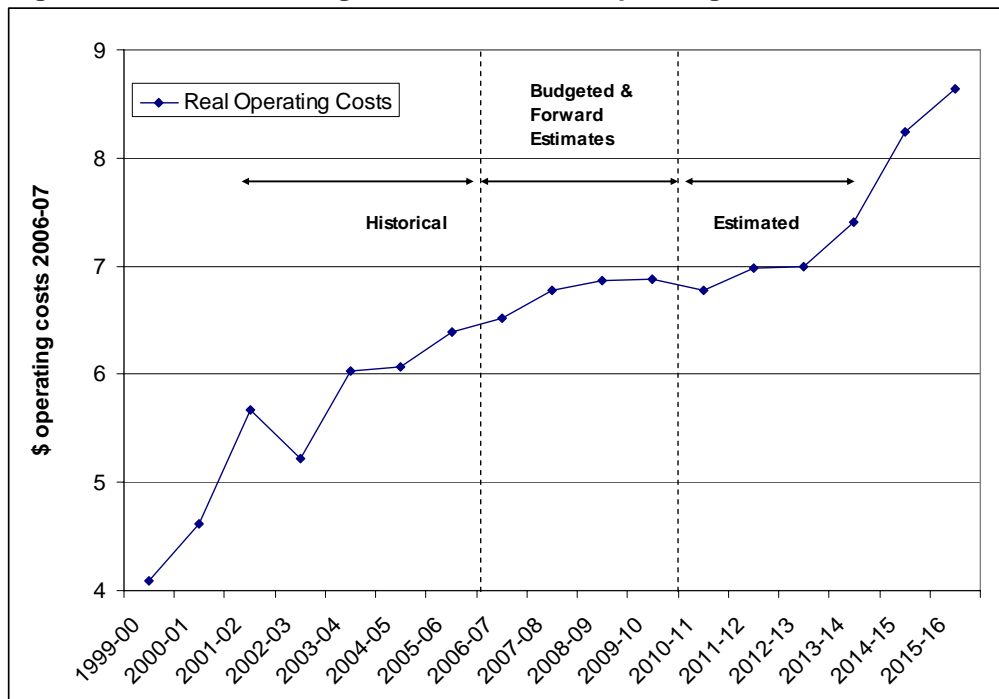
The result is not encouraging. In Figure 4.8 we've plotted the actual, planned and estimated operating costs since 1999-00 in 2006-07 dollars. From 2007-08 to 2012-13 the growth in operating costs falls flat in direct contradistinction to the historical trend preceding it, and planned spending mid next decade. There are two reasons to believe that this is unrealistic:

- Over the next several years, just when the money available to cover operating costs falls flat, there are a large number of projects due to deliver new capability into the ADF. These include four C-17 transport aircraft, six

AEW&C aircraft, four A330 refuellers and twenty-two armed reconnaissance helicopters. Not to mention a host of smaller projects that will be coming due over that period as a result of the elevated investment of the past several years.

- There are no major efficiency measures planned to cut the cost of maintaining ADF equipment. Indeed, the vast bulk of the outsourcing programs initiated by the Defence Reform Program have been completed. In fact, on the basis of the historical trend, we can expect an ongoing increase as the cost of maintaining equipment continues to outpace inflation.

Figure 4.8: Historical, budgeted and estimated operating costs



In part, the looming shortfall in operating costs can be traced back to the so-called ‘logistics shortfall’ measures of 2003-04 and 2004-05 when the government provided around \$400 million per annum extra for logistics, Table 4.3.

Table 4.3: Logistics shortfall funding

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09 +
2003-04 budget	244.3	258.5	284.9	229.0	205.2	~200
2004-05 budget		142.1	146.7	158.4	163.1	0
Total	244.3	400.6	431.6	387.4	368.3	

Because the measures from 2004-05 have not been renewed past 2007-08, it’s not surprising that 2008-09 is the year where the money available for operating costs starts to flatten out.

How big is the shortfall?

At a minimum, the shortfall from 2008-09 to 2015-16 would be in the vicinity of \$1.6 billion on the basis of extending the 2004-05 logistics shortfall funding and accounting for some modest growth past the 2007-08 figure. This does not take account of the overall growth in operating costs or of the range of additional capability that will enter service over the period – like the C-17 fleet. The actual shortfall is almost certainly much larger.

What does this say about Defence planning?

The 2000 White Paper was a ‘bottom up’ attempt to construct an affordable ten-year program of defence activity. It took account of the personnel and operating costs necessary to turn the equipment being brought into operational military capability. In retrospect, it was overly optimistic about both capital and operating costs – both of which have grown well beyond the estimates made in 2000. But the methodology was sound. Unfortunately, there is little sign that such a thorough approach has been applied this time. Instead, there appears to be a rush to purchase equipment in the near-term without knowing what it will cost, let alone securing the money.

This makes no sense. It could easily lead to the situation faced back in 2003 when the government cut two frigates, two minehunters and accelerated the retirement of the F-111 fleet to save money as defence costs spiralled. This shows just how expensive inadequate planning can be. And the situation might actually be worse. If operating costs are not being properly taken into account, what about personnel numbers? How many more people will Navy need to operate their Air Warfare Destroyers next decade? Are they factored into the plan?

The program of spending and capability set out in this year’s budget does not add up. Either more money will be required or capability will have to be cut.

The 2004 Defence Capability Plan

The 2001-2010 Defence Capability Plan (DCP-2001) outlined the government’s major capital equipment investment plans for the coming decade as decided at the time of the 2000 White Paper. It was originally planned that the DCP would undergo annual revisions to take account of new information and changing strategic priorities. But it was not until February 2004 that the first full revision of the plan was publicly released. The resulting plan, DCP-2004, reflected the detailed decisions taken by the government in the Defence Capability Review (DCR) in late 2003.

A new plan is anticipated in the next several months. When that occurs, ASPI will analyse the changes from the previous versions. In the meantime, the best we can do is chart the progress in delivering, or otherwise, on the capability goals of DCP-2004.

Last year we found that after a flying start in 2003-04, the approval of new projects stalled. The situation is not all that much different this year except that a couple of big projects are planned for consideration in 2007-08. The situation is summarised in Figure 4.9 and Figure 4.10 overleaf. With a new DCP only weeks away there is little point in dissecting the results except to note that:

- Of the 78 projects in the first four years on DCP-2004 only 30 have been approved and another 12 are scheduled for approval in 2007-08. This represents a hit rate of less than 39%. What's more, 10 of the approved projects were approved late.
- In terms of value, of the \$26.4 billion of planned for approval in the first four years of DCP-2004, only around \$5.2 billion worth has been approved, with another \$10.5 billion scheduled for 2007-08.

Figure 4.9: Progress on approving DCP-2004 projects – numbers

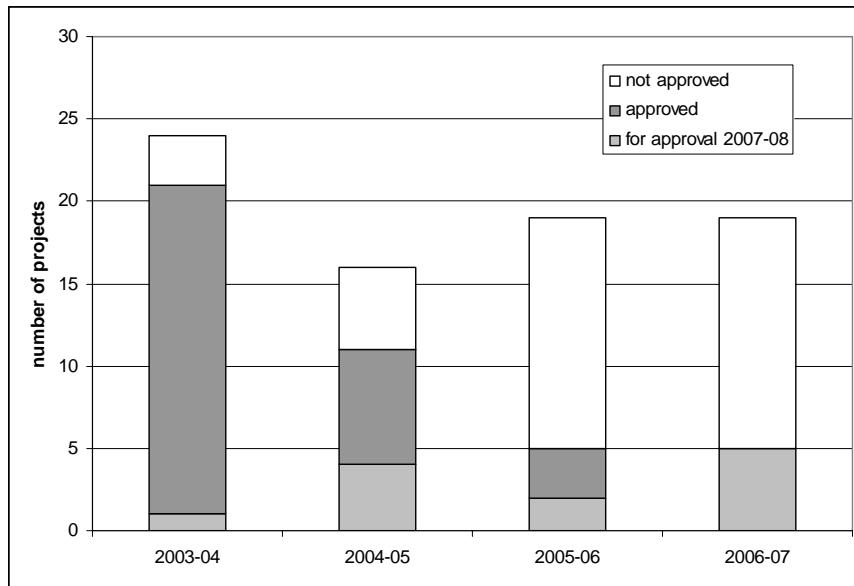
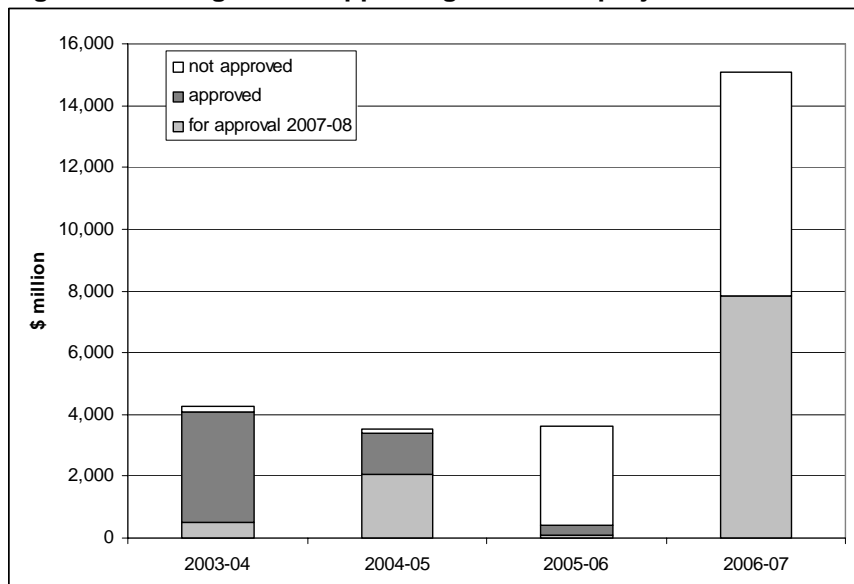


Figure 4.10: Progress on approving DCP-2004 projects – financial



What's the problem?

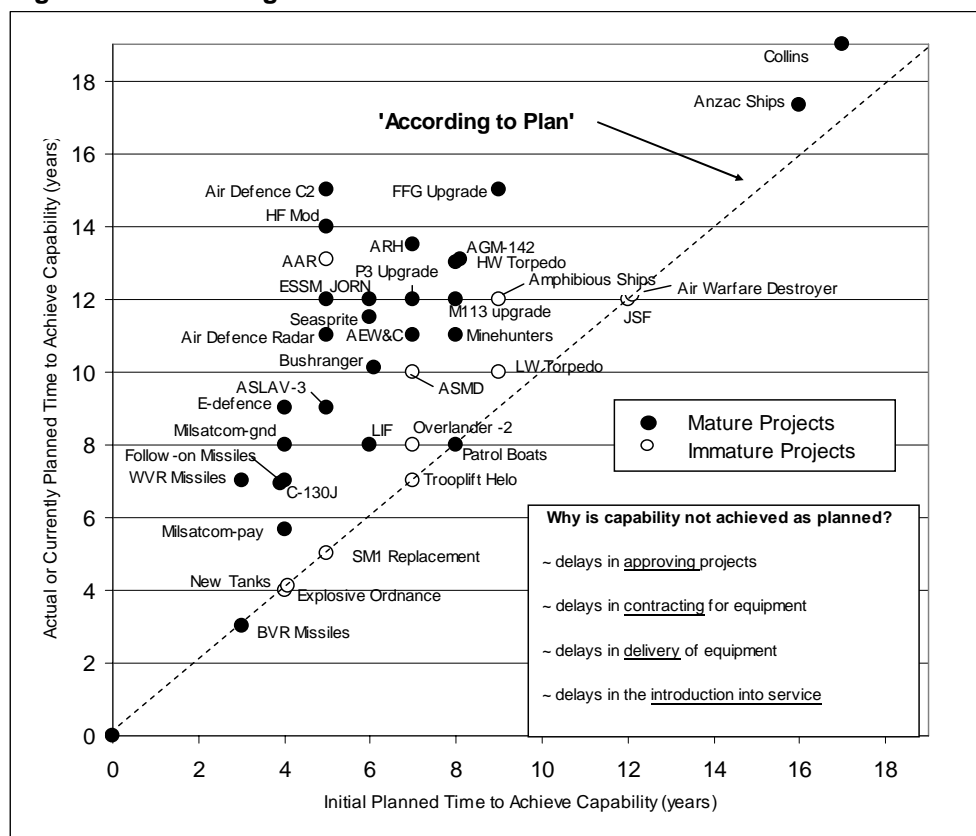
As near as we can determine, there are three possible reasons why the approval of DCP-2004 projects has stalled. First, the introduction of the new two-pass process of project approval has caused an extended hiatus while the new system is bedded down.

The new process imposes much more stringent demands on information before a project is approved. While a delay of this sort is disappointing, it may eventually lead to better results in the long run.

Second, it may be that there is insufficient money to commence new projects. If there is a shortage of money, it probably reflects a failure to properly anticipate project cash flow rather than escalation in the cost of individual projects. So far, there have been few signs of cost blow outs in projects from the early years of DCP-2004 – but we cannot be sure until the new DCP arrives.

Third, it might just be that Defence systematically underestimates the time it takes to develop projects up to the point where they are ready to go. In effect, setting itself stretch targets for delivery. Certainly, there are signs from past projects that Defence is almost always overly optimistic about the total time it takes to bring a project from conception to reality. And, in many cases, late project approval has been an important factor in the delay. Figure 4.11 plots the planned time to bring capability into service against actual achievement for all the projects listed in the 2005-06 PAES that we could find good data for. We've relied heavily on old unclassified 'Pink Books' (the precursor to the DCP) to find the first instance when capability was planned to enter service or when a project was due to conclude.

Figure 4.11: The long wait



SECTION 5 – AUSTRALIAN DEFENCE ECONOMICS

This section examines Australia's defence effort from international and historical perspectives. In the process, many of the underlying factors and trends in national and international defence economics will be introduced.

Australia's defence effort in an international context

According to the IMF, Australia has the fifteenth largest economy on Earth measured at market exchange rates (and seventeenth using Purchasing Power Parity—PPP). From this annual bounty of around a trillion dollars, 1.9% is directed to defence. Table 5.1 displays Australia's 2004 defence spending along with that of a selection of countries including allies, regional neighbours and other developed industrial economies around the globe.

Table 5.1: Defence Spending and Burden 2004

2004 GDP		2004 Defence Budget		% GDP	
Country	\$US billion	Country	\$US billion	Country	%
USA	11,700	USA	490.0	Israel	8.3%
Japan	4,660	China	62.5	Singapore	8.2%
Germany	2,670	Russian Fed	61.9	North Korea	8.1%
United Kingdom	2,130	France	51.6	Vietnam	7.0%
France	2,000	United Kingdom	49.6	PNG	5.6%
China	1,680	Japan	45.1	Russian Fed	4.4%
Italy	1,660	Germany	37.7	USA	4.2%
Russian Fed	1,400	Italy	30.5	China	3.7%
Spain	986	India	19.6	Pakistan	3.5%
Canada	980	South Korea	16.3	India	3.0%
South Korea	673	Australia	11.4	Indonesia	3.0%
India	648	Canada	10.1	Turkey	2.9%
Australia	598	Israel	9.7	France	2.6%
Netherlands	575	Netherlands	9.5	Taiwan	2.5%
Sweden	340	Singapore	8.6	South Korea	2.4%
Taiwan	304	Turkey	8.5	United Kingdom	2.3%
Turkey	297	Spain	8.3	Malaysia	1.9%
Indonesia	251	Indonesia	7.6	Australia	1.9%
Thailand	161	Taiwan	7.5	Italy	1.8%
Israel	117	Sweden	5.3	Netherlands	1.6%
Malaysia	117	Pakistan	3.3	Sweden	1.6%
Singapore	105	Vietnam	3.2	Germany	1.4%
New Zealand	95	Malaysia	2.3	New Zealand	1.3%
Pakistan	94	Thailand	1.9	Thailand	1.2%
Philippines	86	North Korea	1.8	Canada	1.0%
Vietnam	45	New Zealand	1.2	Japan	1.0%
North Korea	22	Philippines	0.8	Philippines	1.0%
PNG	4.4	PNG	0.2	Spain	0.8%

Source: (International Institute of Strategic Studies: 'The Military Balance' 2005-06)

Note: other estimates usually have New Zealand much further down the chart in percentage GDP.

Table 5.1 uses GDP expressed in US\$ calculated at prevailing market exchange rates rather than the Purchasing Power Parity (PPP). This is because the basket of goods and services used to calculate PPP conversion rates is unlikely to better reflect the cost of military capability than market exchange rates. In any case, the percentage of GDP spent on defence is completely independent of whether PPP or market exchange rates are used.

Our level of defence spending sees us with a budget broadly comparable with India, Israel, Canada and the Netherlands, but far below the heavy hitters like Italy, Germany, UK, Japan, France and China. Of course, the US remains in a class of its own. Importantly, we out-spend all our Southeast Asian neighbours by a reasonable margin. (In terms of the world as a whole, in 2003 we ranked 14th among nations – about the same place as we do for GDP).

In terms of defence spending as a percentage of GDP, Australia slips a few places in our ranking. We devote a similar share of our national wealth as does Italy, and significantly more than the Netherlands (1.6%), Germany (1.4%), Spain (0.8%), Canada (1%) and Japan (1%). The only fully developed Western countries to clearly do more are the US (4.2%), France (2.6%) and the UK (2.3%). It seems that there are dues to be paid for a permanent seat on the UN Security Council.

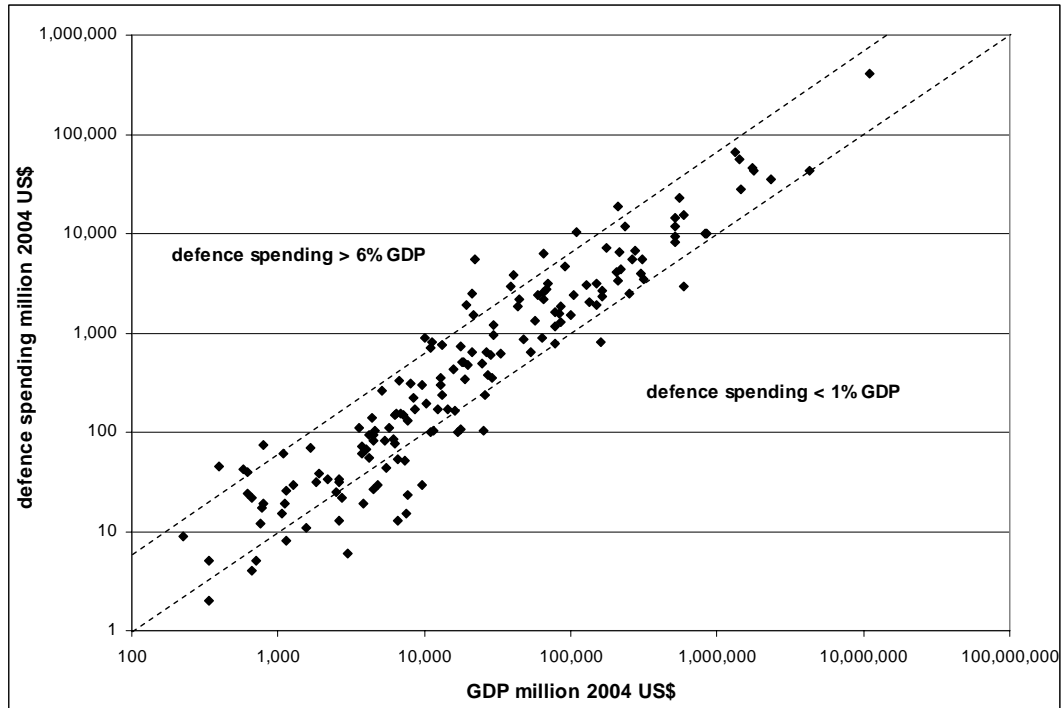
Closer to home, we devote a smaller share of GDP than Vietnam (7.0%), China (3.7%), Indonesia (3.0%), India (3.0%), South Korea (2.4%), and Taiwan (2.5%), but more than Thailand (1.2%) and the Philippines (1.0%). Not surprisingly, we rank ahead of New Zealand (1.3%) and Canada (1.0%).

To summarise, we spend a greater share than most developed western nations (the exceptions are all permanent members of the UN Security Council), but a lesser share than most of our significant regional neighbours. This probably reflects three things. First, the synergy derived from collective defence in Western Europe. Second, the reality that our regional neighbours are still developing economically, and therefore have to spend more to meet the demands of what is, in many ways, a more challenging strategic environment than faced by Western Europe. Third, the economic dynamics of alliance burden sharing – a topic we will return to later in this section.

As we have argued in previous Budget Briefs, GDP share is not a measure of the adequacy or otherwise of defence spending – that's something that depends on the task at hand. Rather, as it is presented here, it simply measures the proportion of national wealth that a nation devotes to defence. Often, this is captured by the use of the term 'defence burden'.

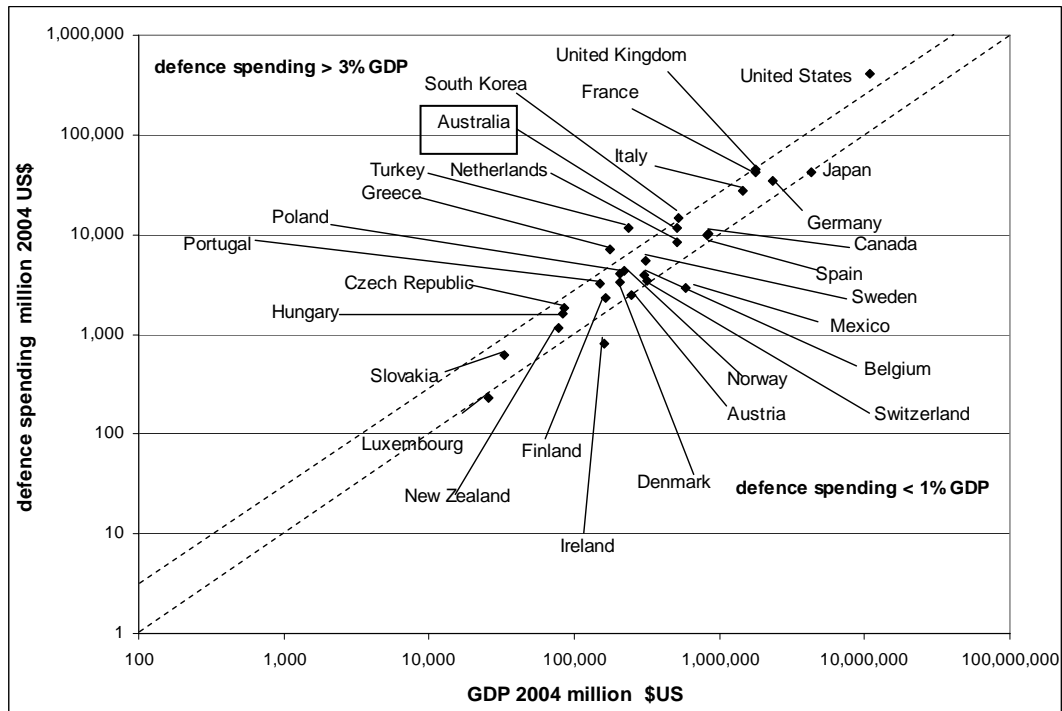
An alternative, and particularly illuminating, depiction of the economic resources a country allocates to defence can be achieved by plotting its position on a graph of GDP versus defence spending along with other nations. We've done this in Figure 5.1 for some 160 countries based on data using US market exchange rates to convert to a common currency. In Figure 5.2 we've isolated the results for OECD countries. Unfortunately, we've been forced to use data from 2003 because later data sets are not conveniently tabulated. To properly capture the wide spread of GDP and defence spending values, the data has been plotted on a dual logarithmic scale. This has the effect of separating out data that would otherwise be clumped together at the lower end of the scale.

Figure 5.1: GDP and defence spending – all nations 2003



Data source: International Institute of Strategic Studies: 'The Military Balance' 2004-05, analysis ASPI

Figure 5.2: GDP and defence spending – OECD 2003



Data source: International Institute of Strategic Studies: 'The Military Balance' 2004-05, analysis ASPI

A couple of things are immediately apparent. Most obviously, there is a rough correlation between defence spending and economic size; the larger a nation's economy the more it tends to spend on defence. In addition, the vast bulk of nations spend within the narrow band of between one and six percent of GDP on defence. Not surprisingly, those countries that spend larger shares of GDP tend to have more challenging strategic circumstances than those that spend less, or else they are

impoverished nations that need to spend a greater share of their meagre resources to achieve a credible capability. Small shares of GDP spending tend to correlate with advantageous geography, strong alliances and benign neighbours. But another factor is also at play. Economically prosperous developed nations tend, understandably, to be able to provide for their defence with a smaller share of GDP, as Figure 5.2 shows.

Money is not the only resource that a nation has available to devote to its defence; there is also people. Table 5.2 lists populations along with the percentage in the armed services.

Table 5.2: Human Resources

Country	POP 2005	Country	Total Armed Forces	Country	% of POP
China	1,306,313,812	China	2,255,000	North Korea	4.83%
India	1,080,264,388	India	1,325,000	Israel	2.68%
United States	293,027,571	United States	1,258,250	Singapore	1.64%
Indonesia	241,973,879	North Korea	1,106,000	South Korea	1.41%
Pakistan	162,419,946	Russian Fed	707,000	Taiwan	1.27%
Russian Fed	143,420,309	South Korea	687,700	Turkey	0.74%
Japan	127,417,244	Pakistan	619,000	Vietnam	0.58%
Philippines	87,857,473	Turkey	514,850	Russian Fed	0.49%
Vietnam	83,535,576	Vietnam	484,000	Thailand	0.48%
Germany	82,431,390	Thailand	306,600	Malaysia	0.46%
Turkey	69,660,559	Indonesia	302,000	United States	0.43%
Thailand	64,185,502	Taiwan	290,000	France	0.40%
France	60,656,178	Germany	284,500	Pakistan	0.38%
United Kingdom	60,441,457	France	241,095	Germany	0.35%
Italy	58,103,033	Japan	228,400	Spain	0.34%
South Korea	48,640,671	United Kingdom	205,890	United Kingdom	0.34%
Spain	40,341,462	Italy	191,875	Italy	0.33%
Canada	32,507,874	Israel	168,300	Sweden	0.31%
Malaysia	23,953,136	Spain	137,805	Australia	0.25%
North Korea	22,912,177	Malaysia	110,000	Netherlands	0.23%
Taiwan	22,894,384	Philippines	106,000	New Zealand	0.21%
Australia	20,090,437	Singapore	72,500	Canada	0.19%
Netherlands	16,407,491	Canada	62,000	Japan	0.18%
Sweden	8,986,400	Australia	51,189	China	0.17%
Israel	6,276,883	Netherlands	38,250	Indonesia	0.12%
PNG	5,545,268	Sweden	27,600	India	0.12%
Singapore	4,425,720	New Zealand	8,660	Philippines	0.12%
New Zealand	4,035,461	PNG	3,100	PNG	0.06%

Source: UN Population Database and IISS 2005-06 Strategic Balance.

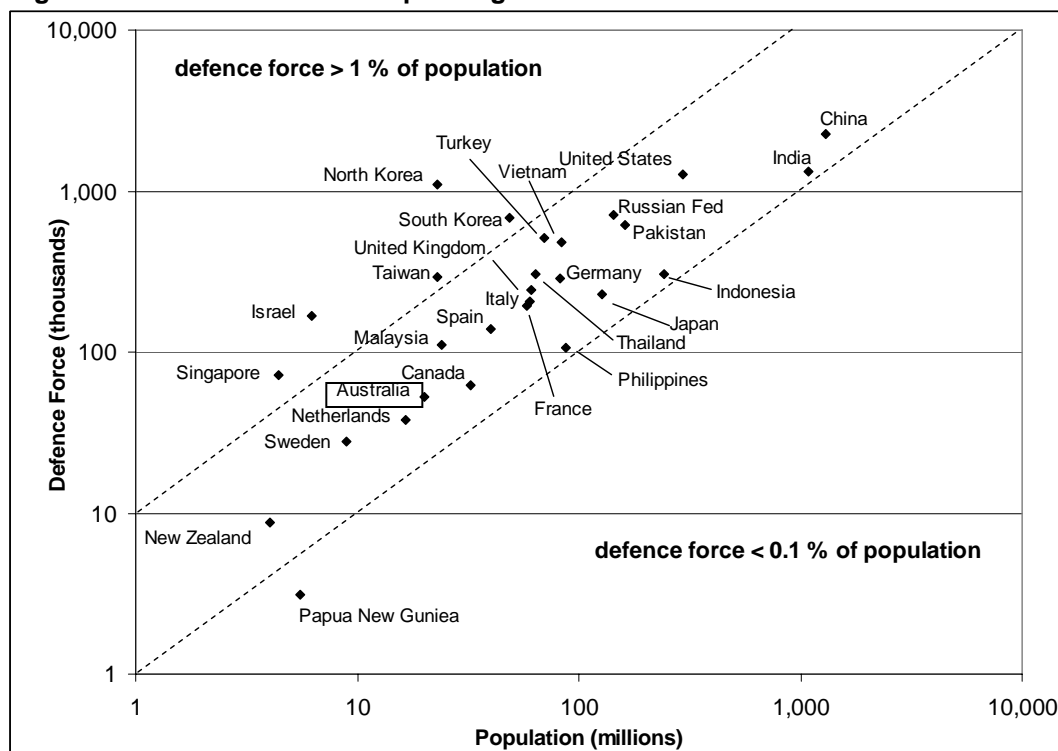
Here Australia is somewhat less well endowed. According to the US Census Bureau, Australia ranked 52nd in population in 2005, ahead of Sri Lanka and behind Yemen. We have about one-third the population of the larger European powers and less than one-tenth that of the US. In regional terms, we're just a little smaller than Malaysia, North Korea and Taiwan, but only a quarter the size of Thailand and the Philippines. Indonesia has more than ten times our population, and we are but a drop in the ocean compared with India and China. The sobering fact is that we account for less than one-third of one percent of the world's people.

Our permanent armed forces amount to a bit over 51,000, which puts us near the bottom of the table in our selection of countries. Overall, there are around 65 countries with armed forces numerically superior to ours (*International Institute of Strategic Studies: 'The Military Balance' 2004-05*). As a proportion of population, we have just over one-quarter of one percent of our population engaged as full-time military personnel. This is significantly less than European nations like the United Kingdom (0.34%) Germany (0.35%) and France (0.40%), and even further behind the United States (0.43%). In fact, in our selection, the only Western countries we comfortably beat are those well-known strategic optimists, Canada and New Zealand (both of which have their strategic approaches covered by more powerful neighbours). In regional terms, we fall well behind Singapore (1.64%), Malaysia (0.46%) and Thailand (0.48%) but ahead of Japan (0.18%), China (0.17%), Indonesia (0.12%) and the Philippines (0.12%). In general, the trend is that only very populous regional nations devote a smaller proportion of their population to the task of defence than Australia.

Australia's relatively modest ranking in terms of proportion of population needs to be seen in the context of our avowed 'maritime strategy' that has driven force development since the early 1970s, when the 'defence of Australia' doctrine was adopted. In fact, with the exception of a short period in the 1960s that saw conscription boost the Army to over 40,000, Australia has never maintained a large peacetime standing Army. Put simply, as a country with no land borders and no prospective adversaries with an amphibious capability, the imperative to develop a large manpower-intensive land force is slight.

Figure 5.3 plots the size of the permanent defence force against the population for our selection of nations.

Figure 5.3: GDP and defence spending – OECD 2003



Data source: *International Institute of Strategic Studies: 'The Military Balance' 2004-05, analysis ASPI*

Sharing the burden

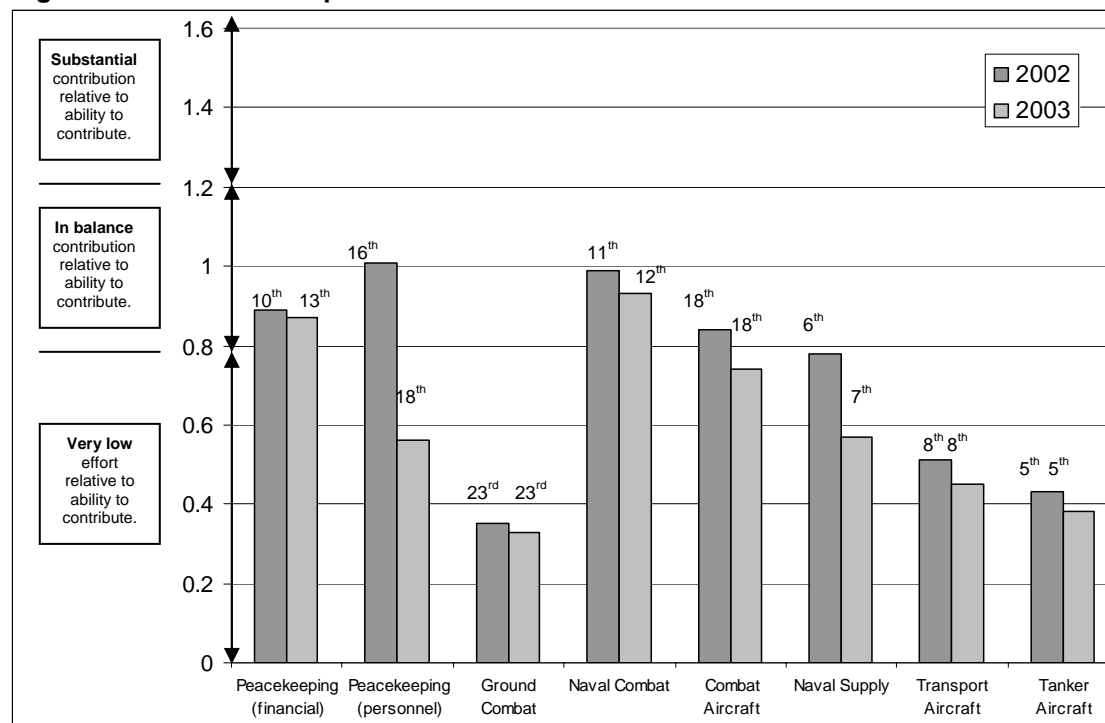
Each year the Pentagon reports to the US Congress on ‘*Allied Contributions to the Common Defence*’. The most recent version covers the situation in 2003 and is built around a quantitative assessment of each ally’s military capacity to contribute armed forces relative to their underlying workforce and economic capacity. While this is a more detailed approach than that we undertook in the previous section, it employs a similar methodology.

The result is a report card for each country marked against eight criteria. Two of the criteria reflect financial and personnel contributions made to multinational peacekeeping in the preceding year, and six criteria rate different components of the country’s force structure. Each criterion is graded on a numerical scale which has the following meaning:

- 0 to 0.8 indicates ‘very low effort relative to ability to contribute’
- 0.8 to 1.19 indicates ‘roughly in balance with ability to contribute’
- 1.2 or above indicates ‘substantial contributions relative to ability to contribute’.

According to the report, a nation is considered to be doing its *fair share* in a particular category if its share of total contributions is ‘in balance’ with its share of total GDP or labour force. Figure 5.4 summarises the Pentagon’s assessment of Australia for 2002 and 2003 compared with 27 other countries.

Figure 5.4: Australia’s report card – US assessment 2002 & 2003



Source: US DoD Report on Allied Contributions to the Common Defence, 2002 and 2003

While we score well for our contribution to multinational peacekeeping (we still had a sizable contingent in East Timor through 2002 and 2003), the assessment of our force structure is less favourable. In only two areas – naval combat assets and combat

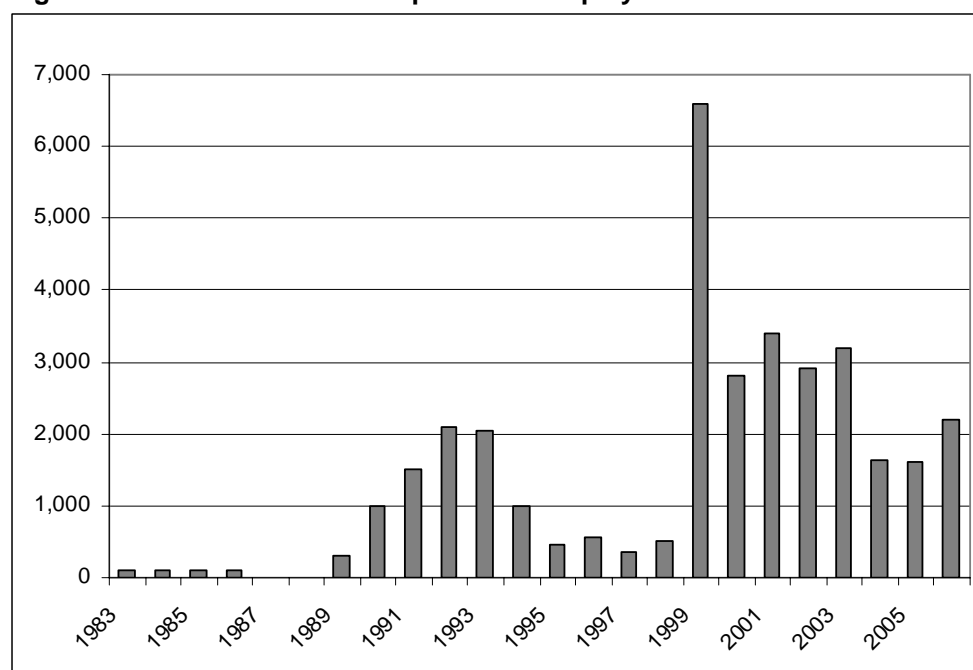
aircraft – are we rated as doing our ‘fair share’, in the remaining four areas we are making a ‘very low effort relative to our ability to contribute’.

Deployment record

Having an armed force is not the same as actually using an armed force. And in recent years, the ADF has been used more often, and in a broader range of circumstances, than at any time in the preceding three decades. Nonetheless, in all but one instance the proportion of the force involved has been small.

Figure 5.5 plots the number of ADF personnel deployed on operations between 1983 and 2006. With the exception of the deployment to East Timor in 1999 when the number of personnel on operations exceeded 13% of the permanent force, the fraction of the force deployed has remained below 7% – even during the period of covering deployments to Afghanistan, Iraq and Solomon Islands in 2002 and 2003. That is, only one in fourteen members of the permanent ADF was actually deployed on operations at any one time during that period. And this is before any account is taken of the roughly 19,000 Reserve force members available to augment the permanent force.

Figure 5.5: ADF Personnel on Operational Deployments 1983-2006



Source: Report of the Strategic Workforce Planning Review, 2003 and 'as at May' figures from other defence sources.

That's not to say that the recent high operational tempo has not posed difficulties for the ADF (and the difficulties are growing with each new penny-packet of troops sent). Even small deployments disrupt training and the posting cycle, and the rigours of operational deployments place a very heavy burden on individuals and their families. But this is true for all militaries, not just the ADF. Indeed, the UK and US have been forced to make much more extensive use of their Reserve forces and the duration of individual tours of duty is sometimes more than twice that experienced by ADF personnel. Indeed, during the combat phase of the Iraq War in 2003 the United States deployed 31.3% of their permanent strength, the United Kingdom 19.2%, Australian

4% and Canada 0.1%. A similar disparity has been maintained throughout the stabilisation phase of Operation Iraqi Freedom, and similarly in Afghanistan.

The economics of alliances

The fact that Australia makes a proportionately smaller contribution to the common defence within the US alliance is consistent with the behaviour of junior alliance partners world-wide and historically. Consider Table 5.3 below which charts the percentage of GDP spent on defence by members of NATO during the middle to latter part of the Cold War (well after Western Europe had recovered economically from the ravages of WW II).

Table 5.3: Cold-War NATO defence spending as a percentage of GDP

	1970-74	1975-79	1980-84
Belgium	2.9	3.2	3.4
Canada	2.1	2	2.1
Denmark	2.4	2.4	2.5
France	3.9	3.9	4.1
Germany	3.5	3.4	3.3
Greece	4.7	6.7	6.6
Italy	2.7	2.4	2.6
Luxembourg	0.8	1	1.2
Netherlands	3.1	3.2	3.2
Norway	3.3	3.1	2.9
Portugal	6.9	3.9	3.4
Turkey	4.4	5.7	4.8
United Kingdom	5.1	4.9	5.3
United States	6.6	5.2	6

Source: *The Political Economy of National Security*, Ethan Kapstein, 1992

Aside from those less economically developed nations (e.g. Portugal) who have to spend a high proportion of GDP to muster a credible defence capability (and in the case of Greece and Turkey to pursue their mutual security issues), the trend is clear; the bigger nations do more, and the smaller nations do less. Economists refer to this behaviour as ‘free riding’ and explain it in much the same way as why individuals don’t feel guilty not paying taxes.

But while Australia is a minnow compared with the US on the world stage, it is a significant player in the South Pacific among those nations that share a common interest. Consistent with the pattern elsewhere, we carry a disproportionately large burden compared with our neighbours, Table 5.4.

Table 5.4: Australia and the Pacific

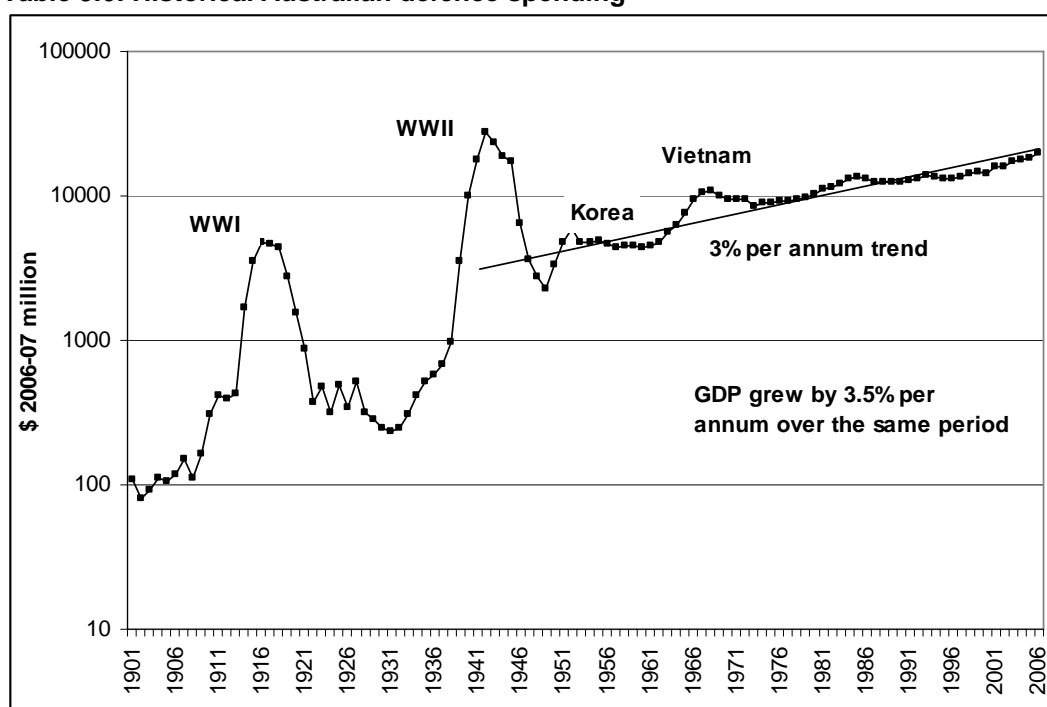
Country	GDP (\$ US 2000) million	% GDP spent on defence
Australia	9,700	1.8%
New Zealand	4,800	0.9%
Papua New Guinea	50	1.3%
Fiji	24	1.2%

Source: DIO publication; 'Defence Economic Trends in the Asia-Pacific 2004. (Figures are not directly comparable with those appearing elsewhere in the Brief.)

Historical Trends

It's easy to focus on the last decade when looking at Australian defence spending and be impressed by the roughly 3% growth achieved since 2000 and planned through to 2015-16. However, a different perspective occurs if we step back and look at defence spending trends over longer timeframes. Figure 5.6 shows the last 105 years of Australian defence spending expressed in 2006-07 dollars using the CPI. What's interesting is that the post-WW II trend is reasonably approximated by a constant compounding 3% real growth once the perturbations due to Korea and Vietnam are taken into account.

Table 5.6: Historical Australian defence spending



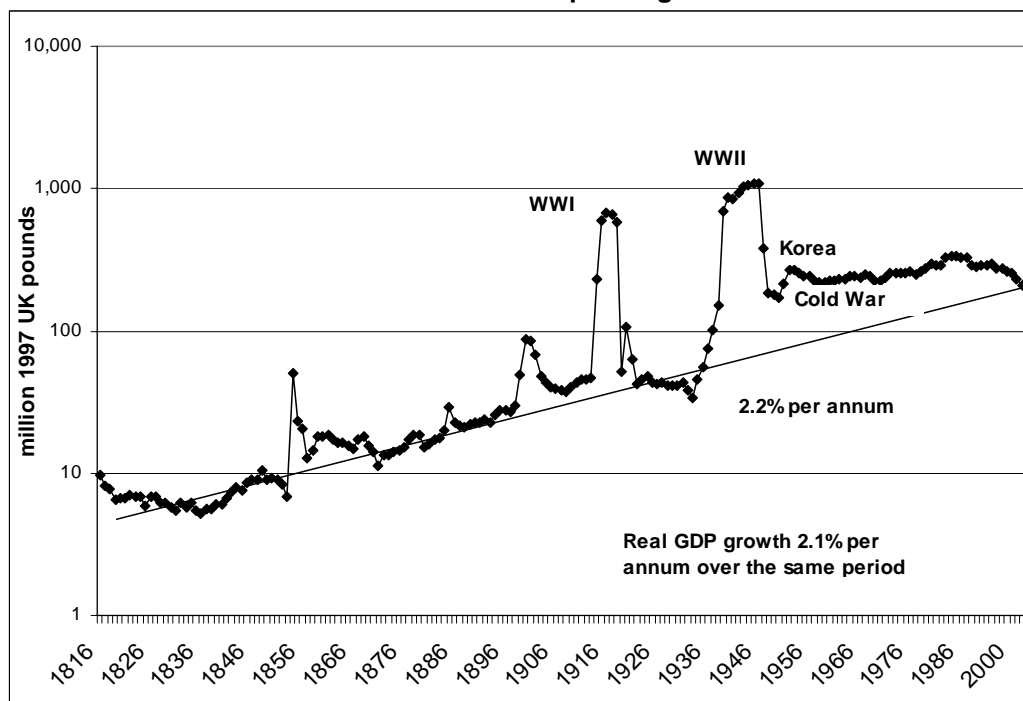
Source data: Correlates of War Project (<http://www.correlatesofwar.org/>), analysis ASPI

This should not come as a surprise. The ADF has been maintained on roughly the same scale (after taking account of contracting-out) for the last fifty years, and the underlying trends in the cost of the inputs to capability have consistently outpaced inflation by 2% to 4%. Specifically, personnel costs have risen by around a real 2% per annum, operating costs by around 3% per annum and the unit cost of equipment by around 4% per annum. It makes sense that the average annual growth comes out around 3% because it's commensurate with these underlying drivers. It's also consistent with the fact that the DCP remains focused on replacing, rather than augmenting, the force structure of the ADF.

Finally, it's worth noting that Australia's defence spending has remained affordable because the long-term rise in GDP has run at 3.5%. For comparison, the long-term trends in UK and US defence expenditure have been plotted in Figure 5.7 and 5.8 overleaf. What's interesting is that, once the Cold War is factored out, both show a remarkably consistent long-term trend in defence spending – over almost 200 years.

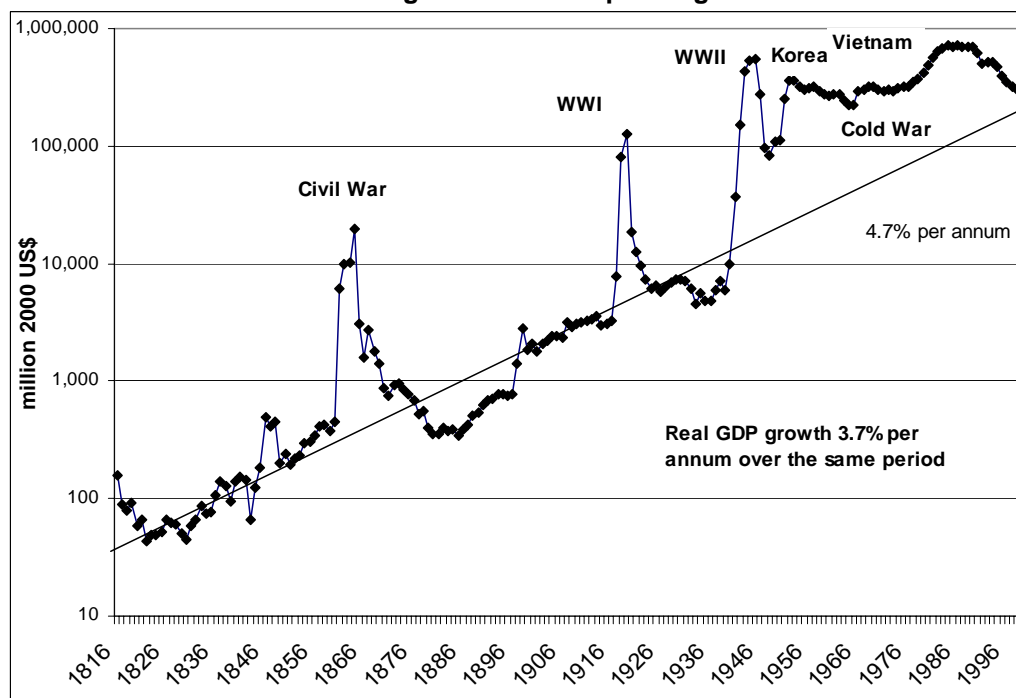
Moreover, the trends track within 1% of GDP growth. For an established but declining power like the UK the trend has been slightly above (2.2% versus 2.1%), for an ascendant power beginning from a low base like the US it's been further above (4.7% versus 3.7%).

Table 5.6: Historical United States defence spending



Source data: Correlates of War Project (<http://www.correlatesofwar.org/>), analysis ASPI

Table 5.7: Historical United Kingdom defence spending



Source data: Correlates of War Project (<http://www.correlatesofwar.org/>), analysis ASPI

SECTION 6 – THE COST OF WAR

Introduction

The 2003-04 ASPI Budget Brief included a full analysis of the cost of all deployments since 1999-00. Since then, rather than repeat that extensive discussion, we've maintained a shorter format. This section includes an explanation of how Defence is funded for deployments, updated tables of historical deployment costs, a summary of the cost of the Iraq, Afghanistan and other recent operations, and an assessment of the impact on peacetime rates-of-effort of recent operations.

What do we mean by the cost of a war?

As a rule, Defence is supplemented for the *net additional* cost of any major military operation. This makes good sense because, in principle at least, it ensures that Defence does not have to compromise peacetime training to fund operations and avoids them having to maintain a contingency reserve to cover unanticipated costs.

Figure 6.1 shows how the net additional cost of an operation is calculated. In the past, Defence only disclosed the aggregate net additional operating cost, the total value of new capital investment and the amount recovered from third parties. However, they now sometimes provide itemised lists of the individual costs incurred in an operation although offsets remain undisclosed.

Figure 6.1 Calculating the 'Net Additional Cost of War'

$$\begin{array}{|c|} \hline \text{Net} \\ \text{Additional} \\ \text{Cost of} \\ \text{War} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Net} \\ \text{Additional} \\ \text{Operating} \\ \text{Cost} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Net} \\ \text{Additional} \\ \text{Capital} \\ \text{Investment} \\ \hline \end{array}$$

Where:

$$\begin{array}{|c|} \hline \text{Net} \\ \text{Additional} \\ \text{Operating} \\ \text{Cost} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Additional} \\ \text{costs above} \\ \text{normal} \\ \text{peacetime} \\ \text{expenditure} \\ \hline \end{array} - \begin{array}{|c|} \hline \text{Offsetting} \\ \text{savings due} \\ \text{to cancelled} \\ \text{peacetime} \\ \text{activities} \\ \hline \end{array} - \begin{array}{|c|} \hline \text{Costs} \\ \text{recovered} \\ \text{from} \\ \text{3}^{\text{rd}} \text{ parties} \\ \hline \end{array}$$

Net additional operating costs include the additional cost of personnel allowances, shipping & travel, repair & maintenance, health & inoculations, ammunition, contracted support, fuel, inventory, consumables etc. Offsetting savings include money saved from foregone activities like the cancelled Exercise Crocodile 99 & Avalon Air Show in 1999/00 due to the deployment of Australian Forces to East Timor. Those costs recovered from 3rd parties include the partial recouping of costs from the UN when participating in a UN peacekeeping operation.

Net additional capital investment usually represents the accelerated filling of capability gaps specific to the operation. Recent examples include the purchase of additional equipment for the AP-3C maritime patrol aircraft for Iraq, and the rapid

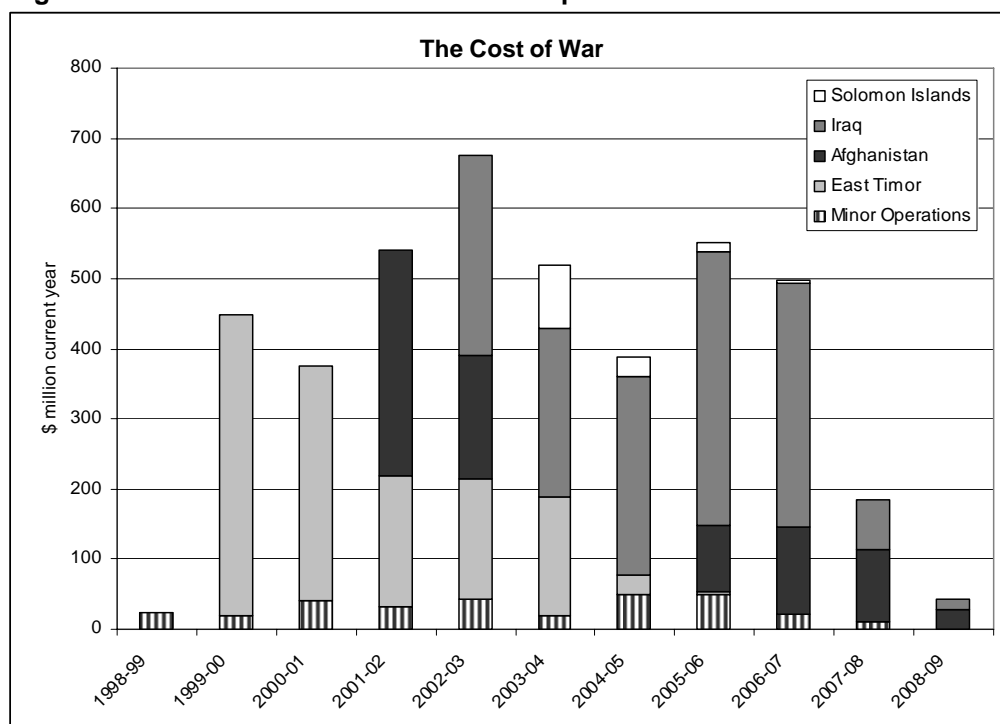
acquisition of the Javelin missile for Afghanistan. The capital cost sometimes also includes modifications to platforms and additional inventory purchases.

Finally, it's worth being specific about what is not included. The net additional cost of an operation does not include pay and allowances that would normally be incurred, nor does it include the cost of operating platforms within the planned peacetime rate of effort (nor does it cover the costs outside of Defence incurred by the AFP, DFAT or others involved in operations). Thus, aside from additional items like new equipment, ammunition, transport and contracted services, the net additional cost is the *marginal* cost of increased ADF activity due to an operation.

What's the big picture?

Figure 6.2 shows the net additional supplementation received by Defence for deployments from 1998-99 through 2008-09.

Figure 6.2: The net additional cost of ADF operations



Source: Defence Annual Reports and Budget Papers

Minor operations include Bougainville which cost \$109 million between 1998 and 2003 (of which \$43.3 million was absorbed by Defence), Border Protection which cost \$104 million between 2001 and 2007, and the 2006 Commonwealth Games (\$13 million). And in the future: support the 2007 APEC Conference (\$20 million). We have not included the \$175 million spent between 2001 and 2006 on increased security at Defence facilities. Although this was previously called 'Operation Safebase', it is wrong to describe it as an ADF operation.

Figure 6.2 also excludes the 'force generation' costs nominally associated with expanding the ADF by 3,555 troops for East Timor in late 1999. This roughly \$400–

\$500 million per annum was permanently included into the Defence funding base at the time of the 2000 White Paper. In the figure, Afghanistan includes the Multinational Interception Force (MNIF) which became part of the Iraq operation in March 2003.

Overall, the cost of deployments will fall slightly in 2006-07 as Afghanistan expands and other operations draw down.

New money for operations in the 2005-06 Budget

The PBS explains the additional supplementation that's been provided to cover the net additional cost of operational deployments [PBS pages 25 to 29]. Note that the duration of the spending should not be taken as implying anything final about the likely length of deployment because additional money is often provided post-deployment for repatriation and reconstitution of equipment.

Iraq

The government has provided \$393 million over three years to retain an expanded ADF contribution to Coalition operations in Iraq until the end of the forthcoming financial year. There are currently around 1,400 service personnel in the Middle East area of operations. The government has said that troops currently deployed protecting Japanese reconstruction efforts in Al Muthanna province will be redeployed to train the Iraqi military and undertake security duties when the Japanese depart mid-2006. The total cost of operations in and around Iraq now stands at \$1,635 million.

Afghanistan

In September 2005 the government sent a 190 strong Special Forces task group to Afghanistan for twelve months to support the reconstruction and stabilisation of the country. In addition, two CH-47D Chinook helicopters and 140 personnel have also been deployed in support. Finally, a 240 strong Reconstruction Task Force is being sent to Afghanistan as part of a Netherlands-led Provisional Reconstruction Team for two years. Total new money in the budget for operations in Afghanistan was \$233 million over three years. The total cost of operations in Afghanistan now stands at \$840 million.

Border Protection

The elevated ADF contribution to coastal surveillance will be extended through 2006-07 at a cost of \$12 million.

2006 Commonwealth Games

A total of \$13 million over three years was provided last year as part of the whole-of-government support provided to the 2006 Commonwealth games in Melbourne.

2007 Asia Pacific Economic Cooperation forum

A total of \$20 million over two years was allocated last year for 'counter-terrorism, security and ceremonial capabilities' in support of the 2007 Asia Pacific Economic Cooperation forum in Sydney in 2007.

Impact of operations on peacetime rates of effort

The impact of deployments on planned peacetime rates of effort is often counter-intuitive because rates-of-effort sometimes fall due to disruption caused. For example, despite getting \$14 million for increased P-3C operating costs due to the Iraq deployment during 2002-03, the fleet fell short of its planned rate of effort by 15% in that year. Table 6.2 lists the rate of effort for key platforms employed in recent operations. Unfortunately, figures are not available for Navy vessels, although anecdotal evidence is that they regularly deliver substantial numbers of additional steaming days in support of operations well above peacetime rates-of-effort.

In 2004-05; the DCH-4 Caribou transport aircraft rate of effort fell short by around 40% due to recovery from operations in Solomon Islands and maintenance problems, the AP-3C Orion Maritime rate of effort increased by 3% due to higher operational tempo, and the C-130 fleet fell short by 16% due to a number of problems including high operational tempo.

Table 6.2: Impact of Deployments on Key Flying Hour Rates

Platform	Budgeted Peacetime Rate of Effort (flying hours)	Actual Rate of Effort (flying hours)	% Difference
<i>1999-00 (period including East Timor INTERFET operation)</i>			
Blackhawk	9,260	8,179	-11.67%
Kiowa	8,985	8,379	-6.74%
C-130	16,762	13,144	-21.58%
Caribou	5,080	4,356	-14.25%
<i>2001-02 (period including War on Terror & Border Protection operations)</i>			
C-130	14,000	13,102	-6.4%
F/A-18	13,000	11,287	-13.2%
P-3C	8,660	9,624	+11.1%
<i>2002-03 (period including Iraq war)</i>			
C-130	14,000	13,622	-2.7%
F/A-18	12,500	14,077	+12.6%
AP-3C	9,600	8,172	-14.9%
Chinook	1,270	1,364	7.4%
Blackhawk			
<i>2003-04 (period including Iraq post-conflict, East Timor and Solomon Islands)</i>			
C-130	15,000	13,992	-6.7%
F/A-18	12,500	12,820	2.6%
AP-3C	9,100	7,702	-15.4%
Chinook	1,270	876	-31.0%
Blackhawk	8,600	6,864	-20.2%
Kiowa	12,970	11,425	-11.9%
<i>2004-05 (period including Iraq and Solomon Islands)</i>			
C-130	16,000	13,502	-16.0%
AP-3C	8,200	8,431	3.0%
DHC-4	5,080	3,038	-40.0%

Sources: Defence Annual Reports and Portfolio Budget Statements for 1999-00 to 2004-05.

What about the human cost?

It is a mistake to view the costs exclusively in financial terms. Military operations are very demanding and dangerous environments for the individuals involved. Table 6.3 lists the (incomplete) statistics we have been able to find on the human cost of recent operations.

Table 6.3: The human cost of recent ADF deployments

Operation	Deaths	Casualties	Medical discharges	Disability Pensions
East Timor	2	unknown	unknown	499
Afghanistan	1	unknown	23+	unknown
Iraq/Middle East	2	unknown		unknown
Solomon Islands	1	unknown	unknown	unknown

Source: see below

East Timor

As of October 2002 (the most recent data we could find), 486 Australian Defence Force personnel and thirteen eligible civilians were in receipt of a disability pension as a result of service in East Timor. A total of 314 received a pension for disability levels between 10% and 50%, 144 received a pension for disability levels between 60% and 100%, two received a pension at the Intermediate rate, twenty at the Temporary Special rate and nineteen received a Totally and Permanently Incapacitated (TPI) pension. Of the 909 recognised disabilities among the 499 individuals, the largest category of disability was musculo-skeletal (413) followed by psychiatric (175) and ear, nose & throat (117). Of the nineteen former Defence Force personnel receiving a TPI pension, all are suffering from post-traumatic stress disorder. [Source: Senate Question on Notice, 14 October 2002]

Afghanistan and the Iraq/Middle East

As of early 2006 (the most recent data we could find), 121 personnel who had served in the Middle East have been discharged from the ADF. Of these, the largest category was mental health (52) followed by spine (18) and multiple injuries (12). However, it should not be assumed that all of these personnel were discharged because of service on operations. For example, only 23 out of the 52 cases are considered by Defence to be confirmed or possible related to service in the area of operation. [Source: SLC Additional Estimates, Questions on Notice Number 14, May 2006.]

ASPI plans to continue to collect information on the human cost of ADF operations for presentation in the next budget brief.

What do we get for our money?

Table 6.4 lists the net additional cost of recent ADF operations along with a brief description of what the operation entailed. It's important to note that many smaller operations, and even the extensive support given to the Sydney Olympic Games, occur without any supplementation. We've done the best we can to separate out the capital component of the funding but in many cases it is not available. In some cases the figure given for capital represents the minimum amount that has gone towards capital equipment.

Table 6.4 Supplementation received for the cost of recent ADF operations (\$ million)

Operation	Net Additional Operating Cost	Net Additional Capital Investment	Duration (months)	Description
East Timor 1999-00	429.7	70.4	9	A peak of 6000 personnel reduced to 1600 in June 2000. Included 12 Blackhawk plus a troop of Kiowa helicopters, plus extensive airlift (Caribou and C-130) and sealift support.
East Timor 2000-01	335.9	123.5	12	1610 personnel in theatre. Included 4 Blackhawk and a troop of Kiowa helicopters, Caribou detachment plus airlift and sealift support.
East Timor 2001-02	187.5	0	12	1470 personnel. Included Battalion Group, troop of Kiowa helicopters plus airlift/sealift support. (Blackhawk & Caribou use unknown.)
East Timor 2002-03	172.4	0	12	1250 personnel. Included Battalion Group, troop of Kiowa, and detachment of Blackhawk helicopters plus airlift/sealift.
East Timor 2003-04	169.1	0	12	Similar to above but drawing down. By 30 June 2004 there were only around 440 personnel and a Blackhawk detachment remaining.
East Timor 2004-05	27.4		12	Australian contribution to extended UN peacekeeping in East Timor. Around 100 personnel with no helicopters.
East Timor 2005-06	4.1			Remediation and repatriation costs
Bougainville 1998-99	23	0	12	Unstated number of personnel plus airlift/sealift.
Bougainville 1999-00	18.3	0	12	Unstated number of personnel plus airlift/sealift.
Bougainville 2000-01	20.0	0	12	176 personnel plus airlift/sealift
Bougainville 2001-02 2002-03	10.1 14.6	0	12	35 personnel plus airlift/sealift

Bougainville 2003-04	3	0	12	ADF involvement ended in August 2003. This funding covered extraction and remediation of equipment.
Border Protection 2001-02	15.9	6.3	10	Undisclosed but included Frigates, Amphibious Transport Vessels, Patrol Boats, Hydrographic Vessels, P3C Maritime Patrol Aircraft, Special Forces & other Army personnel.
Border Protection 2002-03	25.1	2.7	12	Undisclosed.
Border Protection 2003-04 2004-05 2005-06 2006-07	15.9 16.0 16.4 12.1	?	12	Undisclosed.
Afghanistan & MNIF 2001-02	180	140	9	1100 personnel. Included 2 Frigates, 1 LPA Amphibious Vessel, 4 F-18 Fighters, 2 B707 Air-to-Air Refuelling Aircraft, 2 P3C Maritime Patrol Aircraft, C-130 Transport Aircraft, 150 Special Forces plus command elements.
Afghanistan & MNIF 2002-03	169	30	MNIF 9 Afghan 3	1100 personnel. Included 2 Frigates, 1 LPA Amphibious Vessel, 2 P3C Maritime Patrol Aircraft, C-130 Transport Aircraft, 150 Special Forces plus command elements.
Afghanistan 2003-04	-5	0	-	
Afghanistan 2005-06	94.6	?	9	190 strong SF Task Group for 12 months from September 2005 plus 2 CH-47D Chinook helicopters with 140 personnel until November 2006.
Afghanistan 2006-07	124.5	?	12	240 strong Reconstruction Task Force
Afghanistan 2007-08	102.9	?	12	240 strong Reconstruction Task Force
Iraq 2002-03	285.3	?	7	2000 personnel. Included 2 Frigates, 1 LPA Amphibious Vessel, 14 F-18 fighters, 3 C-130 Transport Aircraft, 2 P3C Maritime Patrol Aircraft, 2 x Chinook helicopters, 500 Special Forces, Clearance Diver Team plus command elements.
Iraq 2003-04	240.6	?	12	830 personnel including 279 in Iraq. Deployment included C-130 Airlift detachment, Air Traffic Controllers, AP-3C Maritime Patrol Aircraft, Frigate, Army Training Team, Medical Team various HQ elements and a security detachment for the Australian mission in Iraq.

Iraq 2004-05	255.4	17.3	12	Pre-April 05: 920 pers roughly as per 2003-04. Post-April 05: 1370 personnel including a 450 strong Task Group to Al Muthanna province along with 40 Light Armoured Vehicles (ASLAV).
Iraq 2005-06	339.7	62.8	12	1370 personnel including a 450 strong Task Group to Al Muthanna province along with 40 Light Armoured Vehicles (ASLAV).
Iraq 2006-07	347.4	?	-	1400 personnel including a 450 strong Task Group to Al Muthanna province along with 40 Light Armoured Vehicles (ASLAV).
Iraq 2007-08	71		-	Remediation and repatriation costs
Iraq 2008-09	15.6		-	Remediation and repatriation costs
Solomon Islands 2003-04	90.4	?	12	Initially 1,400 ADF personnel and an unspecified number of civilians. The size of the operation was reduced as stability returned to the country.
Solomon Islands 2004-05	27.6	?	12	Around 30 ADF personnel who assist with AFP patrols and augment headquarters staff. A larger security detachment of around 200 was temporarily deployed temporarily.
Solomon Islands 2005-06	10.9			Around 30 ADF personnel who assist with AFP patrols and augment headquarters staff. Additional ~ 200 troops were sent in early 2006.
Solomon Islands 2006-07	3.4			Remediation and repatriation costs

Note: Supplementation was not provided to Defence for Bougainville in every year. The capital cost of the Iraq operation in the first two years was around \$146.7 million – split unknown. Most supplementation provided in recent years has been in the form of operating costs.

SECTION 7 – DEFENCE HOUSING AUTHORITY

Overview

The Defence Housing Authority (DHA) was established in 1987 under *The Defence Housing Authority Act 1987* and began operating in January 1988. The DHA's statutory function is:

'To provide adequate and suitable housing for:
(a) members of the Defence Force and their families;
(b) officers and employees of the Department and their families; and
(c) other persons;
in order to meet the operational needs of the Defence Force and the requirements of the Department.'

The DHA is prescribed in the regulations under the *Commonwealth Authorities and Companies Act 1997 (CAC Act)* as a Government Business Enterprise (GBE) and is subject to the provisions in the CAC Act. The Authority is governed by a board of directors whose membership and purpose is outlined in its establishing Act (*the Defence Housing Authority Act 1987*). The DHA is also responsible to its two shareholder ministers being the Minister for the Department of Defence and the Special Minister of State.

Under *The Defence Housing Authority Act 1987*, the DHA is required to operate according to the policies of the Commonwealth as well as according to sound commercial practice. This is reinforced by the general principles of a GBE which also require it to act according to commercial principles and within the framework established for it by government.

The DHA is not funded directly from government appropriation but relies primarily on its two service agreements with the Department of Defence for the provision of housing services and the provision of relocations services. Both service agreements are scheduled for renewal in 2010. Its other income is in the form of interest revenue as well as profits on the sale of property, plant and equipment. Recently (December 2003), the DHA signed an agreement with Customs for the provision of relocation services, contributing marginally to their income stream.

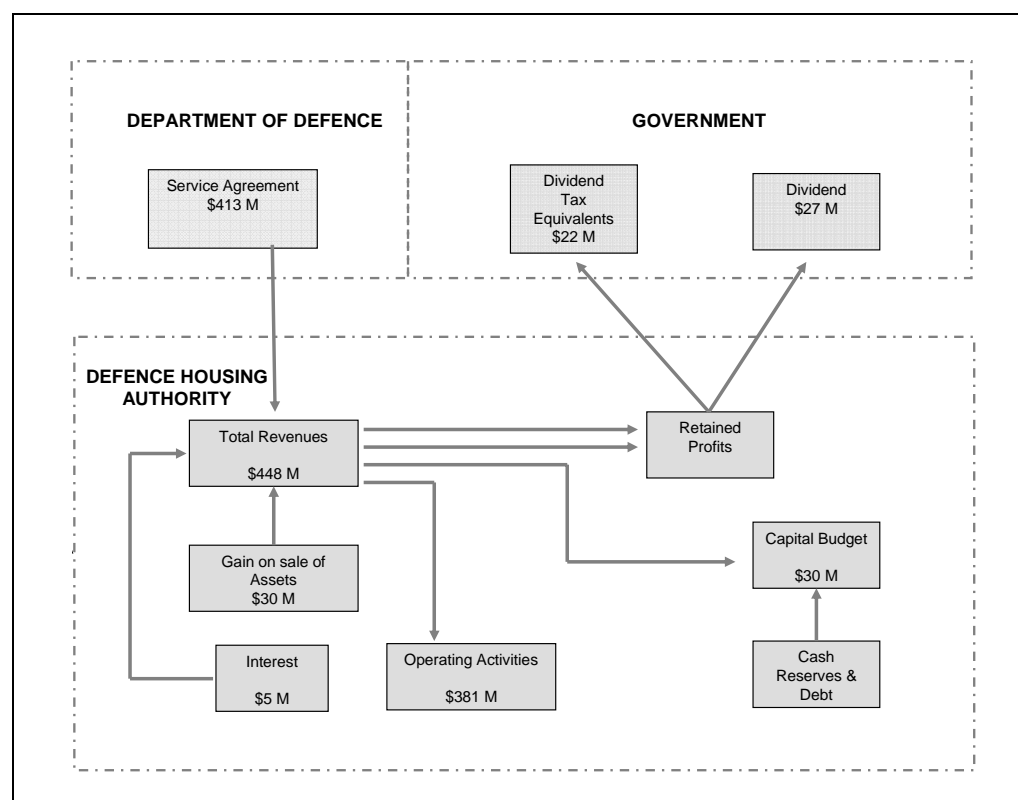
The DHA manages a large property portfolio consisting of approximately 17,000 residences across Australia, estimating approximately \$6 billion in managed assets. In 2004-05 approximately \$1.4 billion of these assets were funded by the DHA with the remainder being funded through private investment.

DHA's preferred method of property acquisition is through construction. By designing and building properties to its specifications it is better able to meet its statutory requirement of providing suitable and adequate housing to ADF personnel. To minimize its capital commitment, DHA offer private investors the opportunity to purchase a DHA home with a lease back arrangement providing investors with secure tenancy for the duration of their agreement.

Housing stock is regularly reviewed and homes deemed unsuitable to Defence are either sold or the lease is not renewed. This allows the DHA to manage a fluid property portfolio limited however by its dependency on market conditions.

Figure 7.1 outlines in summary the financial position for DHA for the 2004-05 financial year. The main source of funding for DHA operations comes from the service agreements it maintains with the Department of Defence with other revenue obtained from the sale of assets and interest on cash deposits. Total revenues are used by DHA to fund its operating expenditure as well as to partially fund the capital budget and dividend payments back to government.

Figure 7.1: Funding Summary 2005-06



DHA Recent History

Historically, DHA has primarily managed the housing requirements of the Department of Defence through the provision of housing stock. However, on 1 July 2000 Defence signed a services' agreement confirming the provision of services relating to the management of housing stock as well as the provision of additional services. These additional services broadly include the provision of maintenance, tenancy management (which includes the allocation of housing, cleaning and inspection services), and the administration of rental allowance.

One year later, on 1 July 2001, DHA also signed an agreement to manage the administration of the removal of furniture and effects of Australian Defence Force (ADF) members. This includes itinerary management, calculation and payment of allowances, and liaison with other providers. It was at this point that DHA began to

provide the entire relocations function to the Department of Defence, with the objective of rationalising and centralising services to ultimately provide savings to Defence.

Part of DHA's centralised model was the establishment of a National Service and Support Centre (NSSC) aimed at centralising processing. The centre is responsible for customer service, posting co-ordination, the Defence homeowner program, relocation entitlements, calculation of payments, and the processing of lessor and supplier payments. Significant investment was also being made in technology projects to support DHA's expanding portfolio of services.

During the 2002 financial year, the centralised model was found to be flawed and a move to a decentralised customer service model was implemented on 1 July 2002. The new model was aimed at providing a case management approach to the provision of relocations services, increasing the face to face element of service provision. This decentralized approach was later seen to be a more successful model for the delivery of relocations services.

One of the outcomes of managing the entire relocations function is that DHA have control over the end to end relocation process beginning from the time they receive a posting order. During the 2003 financial year DHA noted that 70% of removals were door to door, resulting in savings of temporary accommodation costs of approximately \$15 million to the Department of Defence. By way of note, temporary accommodation costs are required where a member relocates to another location without having a property available for them to immediately occupy.

The introduction of Homefind has also assisted in achieving a higher rate of door to door removals contributing also to the reduction of temporary accommodation costs. The Homefind technology allows pre-allocation of a house as ADF personnel are able to choose a home in their new location, before they depart their existing home. The ongoing upgrade of information technology systems (tenant management and property management system) is continuing.

As discussed, DHA aim to contain costs to Defence through the pre-allocation of housing and subsequent arrangement of a door to door removal. In addition, DHA aim to control costs within the rent bill such as maintaining low vacancy rates and paying reasonable rents noting that market conditions directly impact these parameters.

Over the years, DHA has managed its property portfolio via construction, acquisition, upgrades, and sales of properties. At the completion of the 2005 financial year DHA planned to spend \$1.5 billion nationally on the construction of housing, which is to occur over a three year period. Its capital funding is sourced from the Minister for Finance and Administration for which a loan facility is available for a ten year period beginning on 28 May 2001. To reduce its debt and property ownership levels, DHA offers sale and lease back arrangements to private investors.

By 30 June 2005, DHA administer relocations for approximately 30,000 families per annum and manage a property portfolio estimated at \$6 billion dollars. In 2005-06 DHA maintained 26 offices located nationally with approximately 670 staff responsible for managing housing and relocations services to ADF personnel.

Financial Results - Historical

Funding – operational

The DHA does not receive appropriations from government but rather relies on income from its customers, primarily the Department of Defence, to fund its day to day operations. Defence currently maintains two service agreements with the DHA (housing and relocations) and both will be in effect until 2010.

Funding – capital

The DHA does not receive equity injections from the government. However it did receive contributions from the Commonwealth in the form of land and buildings, at its inception, which are disclosed as Commonwealth contributions in the equity section of the balance sheet. At 30 June 2000 these contributions were \$734 million, subsequently reduced by a \$400 million return of capital in the 2001 financial year. Small reductions in this equity balance have also been made when housing has been returned to the Department of Defence (primarily on-base).

In 2001, and following its return of \$400 million capital, DHA began restructuring its capital requirements in the form of debt financing. It agreed a loan facility with the Department of Finance and Administration of \$425 million on the 28th of May 2001 which can be drawn down over ten years. Recently, the loan facility was increased to \$500 million of which \$375 million has been drawn down to date. Interest rates are determined at the time of draw down and can be set as either fixed or floating.

Statement of Financial Performance

The presentation of DHA's statement of financial performance has changed slightly over the years due to the reclassification of items as well as new business ventures being reported. We have considered these impacts in interpreting the results and have attempted to normalise the financial information provided over the years. For example, gross sales of assets were reported from 2001-02 in revenue with the corresponding cost of sale in the expenditure section. Prior to this, net results were reported in the revenue section. We have included net sales of assets in the tables.

Table 7.1: Revenue by Category

Revenue (in 000's)	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Housing allocation fees	0	0	0	7,886	5,422	8,228
Lessor management fees	0	0	0	18,927	21,452	23,635
Relocation and allocation income	0	0	13,202	31,877	68,133	69,269
Interest income	0	20,592	6,883	8,850	8,852	5,169
Other	0	21,248	29,714	6,831	6,591	8,310
Rental revenue (services provided)	275,428	314,191	304,221	307,559	297,398	303,321
Sale of assets	0	7,757	17,926	33,796	31,812	30,013
Total Revenue	275,428	363,788	371,946	415,726	439,660	447,945

Source: DHA Annual Reports

Revenue

The addition of new business lines is apparent in the relocation and allocation income category, Table 7.1, which has grown significantly since the 2000-01 financial year. The stability in rental revenue income (the rent expense of Defence) could be interpreted as better management of the rent bill (including temporary

accommodation) as well as a toughening of market conditions for finding suitable properties, amongst other factors. Revenue for all other categories has remained fairly consistent unless impacted by changes in classification between items and years for which no further data was available (joint venture profits are not included).

Expenditure

DHA expenditure, Table 7.2, has increased over the years with larger movements in employee expenses and lease rentals. The increase in employee costs is assumed to be due to the expansion of DHA's services whilst the increase in lease rentals is reflective of the growth in the property market as well as an increased focus on the mix of assets under management, focusing on sale and leaseback arrangements.

Repairs and maintenance costs accelerated in the 2002-03 financial year and then reduced in the two subsequent years. Relocation expenses should reflect the trend in relocation income, and other expenses (which includes IT costs, motor vehicle, travel, and general administrative costs) have increased up to the 2002-03 financial year and then reduced slightly. Depreciation and amortisation have remained consistent except for in the 1999-2000 financial year, which contained significantly more expense.

Table 7.2: Expenditure by Category

Expenses (in '000's)	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Employee	15,947	21,809	37,066	41,916	45,103	44,758
Lease Rental	130,295	143,991	151,644	154,071	155,969	165,736
Repairs & Maintenance	45,365	46,544	47,669	64,866	60,798	55,054
Depreciation & Amortisation	37,152	18,445	15,773	17,550	16,843	14,974
Defence member relocation expense	0	0	0	17,641	53,458	55,266
Other						
- IT expenses	0	0	0	0	7,925	7,294
- motor vehicle expenses	0	0	0	0	2,362	2,203
- training and travel	0	0	0	0	2,172	2,071
- consultancy and audit	0	0	0	0	1,289	1,281
- write down of assets	644	0	0	0	0	0
- general admin and other	9,945	15,879	24,376	29,646	10,729	11,847
Borrowing Costs	1,180	0	480	6,288	12,599	20,530
Total Expenses	240,528	246,668	277,008	331,978	369,247	381,014

Source: DHA Annual Reports

Employee expenditure which includes salary and wages, leave provisioning, and separation and redundancy has tripled over the years reviewed. Staff turnover (according to amounts paid in separation and redundancy) seems to have peaked in the financial years 2000-2001, 2003-2004, and just recently 2004-2005. Employee numbers increased from just below 300 in 1999-00 to a peak of almost 800 in 2003-04 before falling to around 700 in 2004-05. Over the same period, per-capita employee expenses have grown from \$55,000 to \$65,000 over the six year period.

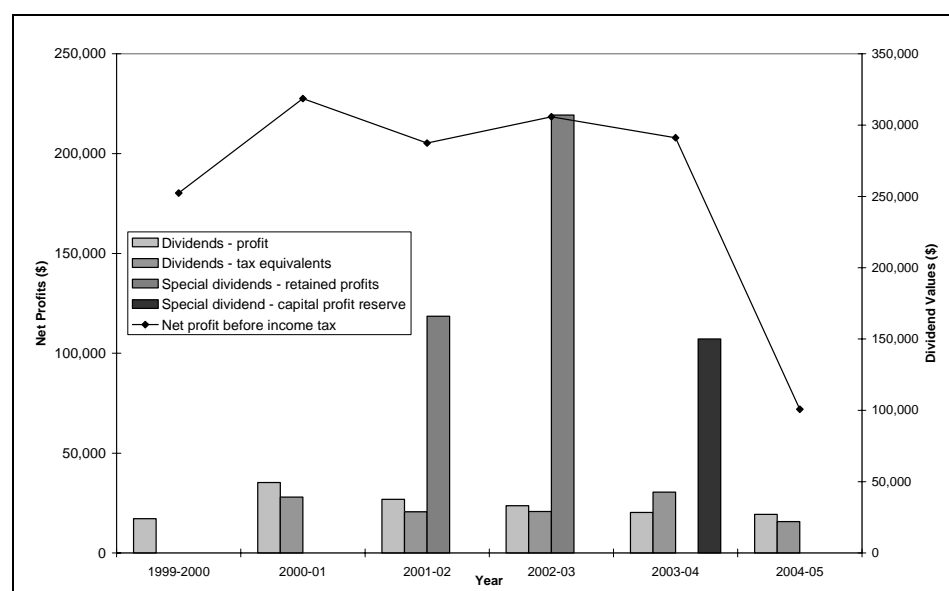
Taxation

DHA is not required to pay taxation (except fringe benefits and goods and services tax), however makes tax equivalent payments in the form of dividends to government. It should be noted that as of 1 July 2003 land tax and stamp duty exemptions for DHA were removed and these costs were passed onto Defence. In May 2004 the last exemptions for state taxes and fees were also removed.

DHA pays dividends on its annual profits, as well as special dividends from both retained profits and capital profits reserves, Figure 7.2. In DHA's case, the payment of dividends on annual profits is two fold. Part of the dividend represents a tax equivalent component comprising company tax, payroll tax, and stamp duty as if DHA were legally liable to pay these amounts; and the second part of the dividend represents the governments return on investment for that financial year.

The payment of special dividends appears to be at the discretion of DHA and amounts are paid primarily from the capital profits reserve. DHA's decision to pay a special dividend would depend on its available reserves as well as its cash position. The payment of a special dividend reflects capital profits the DHA has historically realised upon the sale of assets, not disclosed in its net profit and therefore retained profit position.

Figure 7.2: Net profits and dividends paid



Source: DHA Annual Reports

It should be noted that the net profit disclosed in Figure 7.2 is prior to any transfers to the asset revaluation reserve. Prior to the 2004-05 financial year all off base properties and some on base properties were classified as property, plant, and equipment. Any associated unrealised gains and losses and most realized movements in value were recorded within the asset revaluation reserve or capital profits reserve and would not be shown in the net profits outlined in the above graph.

In the 2004-05 financial year, DHA changed their accounting policy and all property acquired or constructed after 1 July 2003, with the intent to sell, is disclosed as inventory. The associated gains and losses when realised are disclosed in the Statement of Financial Performance and included in the net profit result.

According to this accounting policy change, the graph outlined above understates the net profit by the amount of realised profit contained within the asset revaluation or capital profits reserves. Note 5 to the 2004-05 Financial Statements provides an indication of the possible effect of this change in accounting policy to DHA's net

profit position. An additional \$52 million in profit is recognised when the cost base of inventory assets are used rather than the fair value.

Statement of Financial Position

Assets

DHA disclosed total assets (excluding assets under management) of \$2 billion dollars at 30 June 2005 of which current assets comprised approximately 29%. Its cash position has fluctuated over the years and lease receivables have decreased, as the principal is gradually being reduced by payments from Defence. The finance lease receivable relates to the transfer of on base and some off base properties back to the Department of Defence.

DHA's receivable position (excluding the lease receivable) is growing, although there does not appear to be a provision for doubtful debts disclosed in the financial statements. A large decrease in property, plant & equipment occurred in the 2000-01 financial year, which is consistent with the drop in depreciation expense for that same year. The values have trended upwards from the 2001-02 financial year. Table 7.3 provides an overview of DHA's total asset position.

Table 7.3: Total Assets (excluding assets under management)

Assets (in '000's)	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Cash	231,886	113,154	259,077	170,404	107,096	226,786
Receivables	6,585	6,801	6,337	19,888	27,304	35,123
Other	9,792	10,307	11,211	10,697	11,454	14,808
Lease Receivable	0	391,415	360,114	343,636	305,472	206,523
Inventory, PP&E	1,785,863	1,322,410	1,184,445	1,225,109	1,415,679	1,518,133
Total Assets	2,034,126	1,844,087	1,821,184	1,769,734	1,867,005	2,001,373

Source: DHA Annual Reports

Assets under management

The assets discussed in the previous section exclude assets under management totalling \$6 billion for which DHA own approximately \$1.4 billion (2004-05 annual report). Figure 7.3 overleaf provides an overview of asset numbers under management as compared to their dollar values over the previous six financial years and indicates the growth in the property market over this time. The average unit property price has increase from \$189,375 to \$356,633 over the five year period.

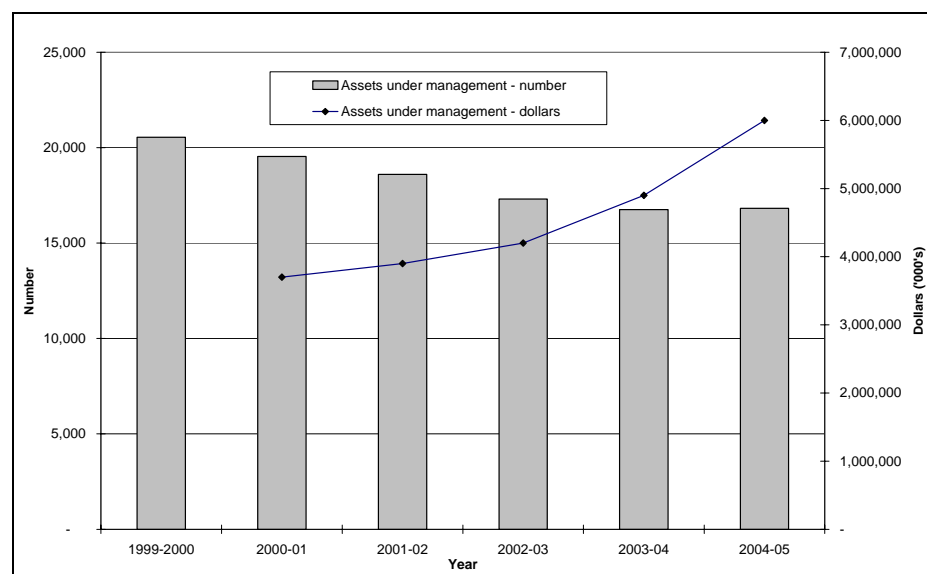
Liabilities

DHA disclosed total liabilities of \$507 million for the year ended 30 June 2005 of which 19% was categorised as current. The majority of non-current liabilities are made up of loans from the government (\$340 million) noting that an additional \$35 million in government loans is disclosed as a current liability.

Employee provisions are steadily increasing which is supported by an increase in employee numbers. Payables and accrued income have fluctuated over the years and the provision for make good on sale and leaseback property is steadily increasing. There is no further information on the level of provisioning for make good and whether the balance is adequate or excessive. In addition, the Australian equivalents to International Financial Reporting Standards require certain accounting for

provision for make good, however there is no indication on the accounting treatment adopted by DHA. Table 7.4 outlines DHA's total liability position.

Figure 7.3: Assets under Management



Source: DHA Annual Reports

Table 7.4: Total Liabilities

Liabilities (in 000's)	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Employee Provisions	3,056	3,217	4,307	6,197	7,136	7,484
Payables	34,536	101,828	86,833	21,126	21,803	52,517
Accrued Income	13,684	15,098	19,217	14,454	10,198	15,382
Sale and Leaseback Provn	38,775	41,109	44,564	50,245	54,796	57,055
Loans	0	0	100,000	200,000	300,000	375,000
Total Liabilities	90,051	161,252	254,921	292,022	393,933	507,438

Source: DHA Annual Reports

Equity

DHA's net asset and equity position at 30 June 2005 is approximately \$1.494 billion dollars of which \$249 million is initial Commonwealth contributions; \$137 million is retained profits, and \$1.108 billion is in asset revaluation reserves and capital reserves.

The future of DHA

The 2004-05 annual report notes that the Board of DHA '*continues to seek amendments to the Defence Housing Authority Act 1987 that will allow them to take full advantage of business opportunities and add flexibility to their financial management and strengthen their position as a modern GBE*'. The changes being proposed are outlined in Defence's Portfolio Additional Estimates Statements 2005-06 and include:

- allowing DHA to offer additional housing related services to Defence
- allowing DHA to offer housing services to other Commonwealth Agencies

SECTION 8 – TOP 24 PROJECTS 2006

Compiled by:

Gregor Ferguson
Daniel Cotterill
Tom Muir

Editor and senior writers of Australian Defence Magazine

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2 CRU/3 CRU Replacement (AIR 5333 - Vigilare)

Project overview and key issues

Project Vigilare will see the replacement of the RAAF's ageing air defence command and control system. This is embodied in two Control and Reporting Units (CRU) located at RAAF Bases Tindal (2CRU) and Williamtown (3CRU). These form the heart of the ADF's Northern and Eastern Regional Operations Centres (NORTHROC and EASTROC).

As well as replacing obsolete processors, displays and communications equipment, Vigilare will also enable 2CRU and 3CRU to receive and process sensor data from JORN, the Wedgetail AEW&C Aircraft which enters service later this year, new civil and military air traffic control radars and the Navy's planned Air Warfare Destroyers. The upgraded CRUs will fuse this sensor data with intelligence information from a variety of sources to help compile the ADF's Recognised Air Picture (RAP) across Australia's area of interest, which stretches from the mid-Indian Ocean to the western Pacific.

The Vigilare system is designed to meet three functional requirements:

- Surveillance, and the concomitant capability to interface to a wide variety of sensors and agencies and correlate, track and display target data
- Battlespace management, which in turn requires high fidelity communications including satellite and Tactical Data Links (TADIL)
- Training: operators need to be able both to simulate air defence operations and record and play back real operations for subsequent analysis and instruction

The Vigilare system must also be capable of interfacing with new sensors, TADILs and other defence and government agencies as they come on line. And that includes agencies using legacy data and communications formats and protocols.

Boeing Australia Ltd (BAL) signed the fixed price Vigilare prime contract on 1 March 2004; this contract is worth \$129.6 million at January 2006 prices. The company also signed a five-year Logistics Support Contract worth \$10.7 million.

The Preliminary Design Review (PDR) for Vigilare was completed in August 2005, some three months later than planned; and the Critical Design Review (CDR), originally scheduled for December 2005, is now expected to take place in August 2006. Final delivery of Vigilare was originally expected within 45 months of contract signature, in December 2007; the delayed CDR will see this pushed back well into 2008 – no schedule for installation, testing and introduction into service can be finalised until the CDR is completed successfully.

Vigilare has been blighted by delays since its inception. ADI Ltd signed a \$30 million prime contract as long ago as 1993 but this was terminated and the project re-scoped to include enhanced functionality and a Link 16 TADIL capability. The project was re-tendered in 1996, BAL was named preferred tenderer in 1998 but it took a further six years before BAL and the DMO could sign a contract worth over four times the original amount but with a still further enlarged scope.

Several reasons have been given for the delay: BAL's original plan was to use the processors and displays from its American parent company's Wedgetail AEW&C Aircraft in order to provide a common human-machine interface, software, training and support regime. The cumbersome US defence export licensing regime slowed this down considerably – Boeing couldn't get an export license to develop the Vigilare solution in detail until various Wedgetail systems and detailed design reviews had frozen the Airborne configuration on which the land-based system was to be based.

As the various Wedgetail design reviews weren't completed until 2003, the potential for delay was obvious. In the event, the Wedgetail-Vigilare synergies proved too elusive and weren't pursued. Meanwhile, a separate project, AIR 5333 Phase 2, to provide the external communications links for the Vigilare system was cancelled and its scope absorbed by the Vigilare program.

As a result, BAL and Defence undertook a Pre-Contract Systems Requirements Analysis (PCSRA) to develop a detailed joint understanding of the requirements of the project, the associated technology demands and the considerable levels of risk – and how best to mitigate and assign them. These studies also delayed prime contract signature.

Two of the key areas of risk for Project AIR 5333 are communications and data fusion. Vigilare involves some 250 separate interfaces with other systems such as JORN and Wedgetail. The PCSRA addressed the many interfaces between the CRUs and the sensors feeding into them and the establishment of a robust communications system to link these operational elements. It also contributed to a detailed and highly complex Operational Concept Document (OCD) to ensure BAL and the RAAF had a clear understanding of the system-level design of the RAAF's emerging surveillance and air space control organisation before contract signature.

Faced with these delays Defence carried out two interim upgrades of 2 and 3 CRU. Adelaide-based Daronmont Technologies installed US firm Raytheon Solipsys' Multi-Source Correlator/Tracker (MSCT) and Tactical Display Framework (TDF) to generate a correlated air picture from the various sensor inputs to the CRUs. This interim solution was fully implemented in 2004 and was highly successful - to the extent that it is now part of the final Vigilare solution.

Under the original schedule the upgraded NORTHROC facility was to be commissioned at Tindal in March 2007; it's now unlikely that work will begin there until the second half of 2007 and Defence is unable to provide an estimated commissioning date. The EASTROC facility at Williamstown cannot be de-commissioned and upgraded until NORTHROC is commissioned, so there is no firm completion date as yet for Project AIR 5333.

The recent delays suffered by Project AIR 5333 to a great extent reflect the sheer complexity of the project, in particular the many different types of interface and the 250 actual communications links involved. This complexity makes it vulnerable to delays caused by even minor technical problems. And the Commonwealth and BAL have both also experienced difficulties recruiting suitably qualified staff to man the project due to the current engineering skills shortage in Australia. However, both now report they have strong teams in place to move the project forward.

ADF Helicopter Capabilities (AIR 9000)

Project overview and key issues

Project AIR 9000 aims to modernise and rationalise the ADF's diverse helicopter fleet, as well as stimulate investment in a sustainable aerospace industry base to support the ADF's rotary wing capabilities.

Under multiple phases, worth in the vicinity of \$4 billion, the ADF plans to introduce a new troop lift helicopter, upgrade or replace the Army's ageing Black Hawks, upgrade the Army's current fleet of Chinook medium-lift helicopters, upgrade the RAN's Seahawk anti-submarine helicopters, procurement of a training helicopter common to Army and Navy and replace the RAN's ageing Sea King utility helicopters.

These new and upgraded Aircraft will operate alongside the Army's Tiger Armed Reconnaissance Helicopter (ARH), which is being acquired under Project AIR 87 (reported separately).

Phase 1 of Project AIR 9000 is the ongoing development and refinement of the ADF Helicopter Master Plan and sustains the management of the AIR9000 program.

Phase 2 – Additional Trooplift Helicopter is already in contract and will see the delivery of 12 Eurocopter NH90 multi-role helicopters (dubbed MRH90 in Australia). Phase 3 is the Seahawk Mid-Life Upgrade. Phase 4 is described as the Black Hawk Mid-Life Upgrade/Replacement in the 2004 Defence Capability Plan but at the time of writing it appeared highly likely the Army's 35 Black Hawks will be replaced by 28 MRH90s; the 2006 defence budget announcement foreshadowed a decision during 2006.

Phase 5 of project AIR 9000 is already under way – this involves re-engining and then upgrading the Army's Chinooks, while the 2006 defence budget announcement foreshadowed the early retirement of the RAN's six surviving Sea Kings and their replacement under Phase 6, which will be considered by government later in 2006.

The Eurocopter MRH90 was selected as the Additional Trooplift Helicopter (ATH) in preference to a more modern version of Sikorsky's S-70A Black Hawk. It can carry 18 combat troops in a more versatile cabin layout than the smaller Black Hawk. A single wave of six Aircraft will be able carry a whole infantry rifle company ashore, in shock rated Seating, with its weapons and equipment from one of the Navy's planned amphibious landing ships, something that would be impossible with the same number of Black Hawks.

The MRH90 has a fatigue-resistant carbon fibre composite Airframe and its metal components are "marinised" to resist corrosion when operating off ships or over the Sea. And it is protected from heat-seeking missiles and other threats by an InfraRed Exhaust suppression system and the same Electronic Warfare Self Protection (EWSP) systems that equip the Army's Tiger ARH.

The prime contractor is Eurocopter's Australian subsidiary, Australian Aerospace, which will assemble eight of the 12 Aircraft at its Brisbane facility under a \$901.6

million prime contract signed in June 2005. Australian Aerospace also signed a \$677 million contract for sustainment of the ATH fleet out to 2017.

The first four ATH will be manufactured entirely in France with deliveries of the first two in December 2007 to meet the In Service Date requirement of the Defence White Paper 2000. The next two will be delivered in mid-2008, followed by the first Australian-assembled helicopter in December 2008. The MRH90 equipped squadron should be operational by 2011 and located in Townsville.

Phase 4 of AIR 9000 seeks new helicopters or upgraded Black Hawks. At the time of writing it appeared near-certain that the federal cabinet will approve the replacement of Army's 35-strong Black Hawk fleet with a further 28 MRH90s. Sikorsky was the other bidder for Phase 4.

A decision is due by mid-2006; as part of its deliberations the Cabinet is also expected to approve the simultaneous purchase of a further six MRH90s to replace the RAN's Sea King utility helicopters under Phase 6, thus rationalising three separate utility and troop lift helicopter types down to just one. These will all be assembled by Australian Aerospace in Brisbane.

Phase 2 does not include the purchase of a flight simulator for the MRH90; a simulator may be acquired if the MRH90 is selected under Phase 4.

The Royal New Zealand Air Force has also selected the NH90 to replace its fleet of Vietnam-era UH-1H Iroquois helicopters. While the RNZAF has yet to make a decision on how many Aircraft it will procure and by what contracting mechanism, it has already held discussions with the DMO over potential synergies in assembly, air crew and ground crew training and in-service support. As both countries are seeking essentially off the shelf Aircraft any differences between their respective fleets should be minor enough to enable some of these synergies to be captured.

Phase 3, the Seahawk Midlife Update and Life Extension (SMULE), has three sub-phases, only the first of which, a Project Definition Study (PDS), is under way. If the PDS determines this is necessary, the as yet unapproved Phase 3B will be the Initial Design Activity (IDA) for the SMULE, while Phase 3C will be implementation of the upgrade.

Phase 5 is being implemented in two stages. Phase 5A, the Chinook Early Engine Replacement, is reported to be progressing well with installation of the first new set of engines scheduled for January 2007. The Chinook Upgrade under the as-yet unapproved Phase 5B has a year of decision of 2008/09.

With Phase 2 the only major phase currently in contract, most of the project risk resides here. If Government decides Phase 4 will see the purchase of more MRH90s, the comments below still apply.

The major risk facing Phase 2 is schedule slippage in the German NH90 program because certification of Australia's MRH90 is based on the German NH90TTH variant. Any slip in the German schedule will therefore directly impact certification of the MRH (Project AIR 87 has incurred delays caused by slippage in the Franco-German Tiger program). Because NAHEMA qualification of the German NH90

variant was recently achieved on schedule, this risk is assessed as medium by the AIR9000 project office.

The MRH90 is essentially a Military-Off-The-Shelf (MOTS) purchase, with the exception of the communications suite, development of a compliant Variable Message Format (VMF) data link and modifications to the Internal Communications Systems (ISC). However, these are proven modifications in themselves and the associated technical risks are therefore assessed as only medium to low.

In particular, the MRH90 communications suite is common with the Army's Tiger ARH, whose mission system architecture and software has high levels of commonality with the MRH90; VMF is an existing US Army data link; and the ICS system has already been developed for other nations procuring NH90. However, the time needed for VMF development and integration is slightly longer than the Aircraft assembly time so this capability will not be ready until early 2009.

Australian Industry Involvement (AII)

One of the objectives of Project AIR 9000, in line with the DMO's Aerospace Industry Sector Plan, is to stimulate investment in the development of a sustainable Australian aerospace industry base that's able to support the ADF's rotary and fixed-wing Aircraft fleets. The plan explicitly recognises that part of the key to achieving this is to support local industry efforts to become integrated into the global supply chains of overseas aerospace prime contractors.

Therefore Defence, recognising the economic and value for money benefits in buying its helicopters in a single large batch, asked Eurocopter and Sikorsky to submit combined bids for both Phase 2 and Phase 4.

Observers were surprised when then-defence minister Senator Robert Hill announced in August 2004 that defence would order just the 12 MRH90s required under Phase 2. Eurocopter's pricing and AII proposals had been predicated on a program of 40 Aircraft; reducing this to just 12 delayed and may have jeopardised an estimated \$60 million in local investment in helicopter and associated assembly, manufacturing and logistics support capabilities and up to 400 jobs at its Brisbane facility and elsewhere among its partners and suppliers.

However, in April 2006 Australian Aerospace announced it would invest some \$15 million establishing a state-of-the-art composite fibre manufacturing plant in Queensland, creating more than 60 new jobs at stable production levels.

Due to come on stream in 2007, the new plant will initially produce fuselage parts and fittings for Australia's Tiger and MRH90 helicopters as well as carrying out maintenance and repairs. The new facility also will manufacture parts for the global supply chain and worldwide production of the Tiger and the NH90.

Defence chose the Rolls-Royce Turbomeca RTM390 engine to power its MRH90s in preference to the General Electric T700 which powers its Black Hawks and Seahawks. Turbomeca Australia will support these engines in-country; it also supplies and supports the engines for the Army's Tiger helicopters and the RAAF's Hawk lead in fighters and won a Defence award in 2005 recognising its investment in local skills and technology.

Air Refuelling Capability (AIR 5402)

Project overview and key issues

This project aims to replace the RAAF's current fleet of three ageing Boeing 707 tankers with five new Multi-Role Tanker Transports (MRTT) based on the Airbus A330-200 Airliner.

The new Aircraft are scheduled to enter service at RAAF Base Amberley from 2009 and will be a key component of the RAAF's Air Combat Group. They will increase considerably the range and endurance of the RAAF's upgraded Hornet fighters and, eventually, the F-35 Joint Strike Fighters which Defence is expected to order in 2008 under Project AIR 6000 – New Air Combat Capability. Along with the Wedgetail AEW&C system and the Joint Air-Surface Stand-Off Missile which is being acquired under Project AIR 5418, the new tankers will help the Hornet and eventually the F-35 deliver the strategic strike capabilities currently provided by the RAAF's fleet of F-111s.

In fact, unlike the RAAF's Boeing 707s, the A330-200 MRTT will be able to refuel all of Australia's current and planned combat Aircraft and those of its allies, making it a very versatile and sought-after asset.

The Airbus A330-200 was selected in 2004 in preference to Boeing's KC-767. The approved project cost is \$1.7 billion at Jan 2006 prices; the \$1.497 billion (at September 2003 prices) prime contract was signed with Spanish contractor EADS CASA in December 2004. The first of the five Aircraft will be modified by EADS CASA in Madrid and the remainder in Australia by Qantas Defence Services Pty Ltd (QDS), who will also be responsible for in-service support.

The deliverables under this contract include the five modified Aircraft, a full flight simulator, initial in-service support and the establishment of a Contractor Support Organisation in Australia. The first Aircraft is scheduled for RAAF acceptance in Europe in late-2008.

The A330-200 MRTT is a large, twin-engined, wide-bodied jet with a maximum take-off weight of 233 tonnes. Its standard wing tanks can carry up to 111 tonnes of fuel - some 45,000 litres more than the Boeing 707, while burning roughly the same amount, so the Aircraft requires no extra tanks to carry a militarily useful payload in the tanking role. This means its uncluttered cargo bay can carry over 42 tonnes of cargo (depending on range and fuel load) consisting of both military and commercial air cargo pallets. It can also carry up to 272 passengers in a two-class configuration, compared with 152 on the Boeing 707 and 128 on the C-130J-30 Hercules.

In this configuration a single MRTT would be able to refuel six Hornets in a non-stop flight from Darwin to Butterworth in Malaysia while carrying the detachment's ground crew and support equipment and spares.

The modifications necessary to convert the A330-200 into a tanker consist of under-wing refuelling pods similar to those currently used on the RAAF's Boeing 707, an Aerial Refuelling Boom System (ARBS) mounted on the lower rear fuselage, and the necessary pumps and piping between this and the Aircraft fuel tanks.

The ARBS will be operated by remote control from a dedicated two-man control station adjacent to the flight deck. The Aircraft will also be equipped with a suite of Electronic Warfare Self-Protection (EWSP) systems provided by US firm Northrop Grumman and military communications, navigation and data link systems provided by Thales and integrated by EADS CASA.

The Critical Design Review (CDR) for the military modifications to the A330-200 MRTT is scheduled for completion by the end of May 2006.

The under wing pods enable “probe and drogue” refuelling favoured by the US Navy and Marines and the UK’s Royal Air Force, among others. The ARBS will enable air-air refuelling of US Air Force Aircraft, including the F-35A variant of the Joint Strike Fighter which the RAAF is expected to acquire, the F-111 and, crucially, the RAAF’s new Boeing 737 Wedgetail AEW&C Aircraft which will be equipped for ARBS refuelling only.

The pods are incremental developments of those currently in RAAF service and represent little technical risk; furthermore, no structural or fuel system modifications are required within the Aircraft wing to accommodate them. But the ARBS is an all-new system designed by EADS CASA for which the RAAF is launch customer, and has already encountered some delays.

The ARBS was scheduled to begin a 300-400 hour flight test program in August 2005, installed on a modified Airbus A310 Airliner test bed. The A310 was selected because it is aerodynamically and structurally very similar to the larger and more expensive A330. But delays in the provision of key equipment from US suppliers, along with minor problems returning an old, high flight-time Aircraft to flight status after the lengthy modification program, saw the first flight pushed back to March 2006.

The first phase of the flight test program has validated all the engineering projections so far and subsequent phases will expand the flight envelope of both Aircraft and ARBS with full qualification of the boom expected by early-2007.

Meanwhile, the first RAAF A330-200 is currently under construction at Airbus’ Toulouse facility and will be delivered to Madrid for modification in June 2006. This Aircraft is currently scheduled to fly with the ARBS for the first time in early 2007. The delayed start of ARBS flight testing shouldn’t delay this milestone – it’s currently expected that the A310 flight trials will qualify the ARBS, though recent minor changes to the design of the ARBS’ Boom Enhanced Visual System (BEVS) mean some additional testing will be required aboard the A330-200.

There is sufficient flexibility in the A330 MRTT test program to accommodate this additional testing – however, if significant problems are encountered during the A310 ARBS test program, contingency plans exist for a parallel test program on both the A310 and A330 in order to certify any resulting changes to the boom system with the minimum of schedule slippage.

The first A330-200 MRTT will undergo a 16-month flight test and certification conducted by EADS CASA under the auspices of the European Aviation Safety Agency (EASA) and the Spanish Military Airworthiness Authority (INTA) for issue

of a Supplemental Type Certificate for the modified A330-200 and a technical certificate for the operation of the military modifications. This program will also form part of the Commonwealth's Type Acceptance Test and Evaluation Program.

Final testing of the new tanker with RAAF receiver Aircraft will be conducted in Australia in early-mid 2009. Modification of the remaining four Aircraft in Australia is currently on track to commence in the third quarter of 2008 and will take approximately seven months per Aircraft with another month for the acceptance process.

EADS CASA selected Canadian firm CAE Inc in March 2006 to supply a full flight and mission simulator for the A330 MRTT, a new training facility, and a mission systems trainer under a contract worth \$46 million. The simulator will be delivered to Amberley in 2009. CAE has also signed an initial agreement directly with Defence to provide five years of support services for the A330 MRTT training systems.

Defence is seeking synergies with other existing or potential A330 MRTT customers such as the UK's Royal Air Force, which has selected the A330-200 for its Future Strategic Tanker Aircraft (FSTA) program but is not yet in contract. However, as the lead customer, Australia is effectively the "pathfinder" for the detailed development of the A330-200 MRTT, so bears the burden of technical and schedule risk.

Schedule is important: the establishment of a robust aerial refuelling capability to support the RAAF's upgraded Hornets is a necessary condition for the retirement, from 2010, of its ageing F-111 strike Aircraft.

For EADS CASA achievement of schedule is a "capstone" requirement, not only to fulfil its contractual obligations to the RAAF but also to establish the company's credibility in the USA where its A330-200 (re-branded as the KC30) will be pitted against Boeing's KC767 in the US Air Force's massive and strategically important multi-billion dollar tanker replacement program. This program is a powerful motivator. In any case, the schedule for ground and flight testing provides some contingency to cope with some of the inevitable development problems and delays.

Australian Industry Involvement (AII):

The AII goal for Project AIR 5402 was for local content and Strategic Industry Development Activities (SIDA) amounting to 10 per cent of the prime contract value.

While this doesn't sound significant, much of the prime contract value is in the A330-200 Airliners, leaving relatively little scope for a major local contribution. In the event, local content is reportedly marginally below this target while SIDA is well above; overall, AII targets have been exceeded.

Qantas Defence Services Ltd will modify four Aircraft at its Brisbane facility and provide in-service support through the life of the Aircraft, a spectrum of activity worth an estimated \$500 million over their life of type. ADI Ltd is supporting development of the MRTT mission systems including development, manufacture and design and integration activities under subcontract to Thales and EADS CASA; GKN Services Australia is helping design the Airframe structural modifications and will manufacture parts for the modification kits; Australian Aerospace is assisting with

technical documentation and support of the fuel system; and Pennant Australia is supporting the logistics analysis

Development of the Aircraft military mission systems, including the communications and navigation systems and data links is being undertaken by a range of sub-contractors. This is obviously a complex undertaking in order to integrate the military systems to preserve the architecture and cockpit philosophy of the baseline Aircraft.

Air Warfare Destroyer (SEA 4000)

Project overview and key issues

Australia is to acquire a fleet of three new Air Warfare Destroyers, the first of which is due to enter service by the end of 2013. An AWD provides a protected volume of Airspace against attack from missiles or Aircraft, and in addition to self-defence can defend a naval taskforce or coastal regions from aerial threats.

The ships are to be built in Adelaide by an alliance that will consist of the Commonwealth, ASC Shipbuilding and Raytheon. ASC Shipbuilding and Raytheon were selected last year as shipbuilder and combat system systems engineer respectively.

In keeping with the Kinnaird reforms for defence capability development and procurement, two competing designs will be considered when the project comes up for second pass approval by government in the second half of 2007. These are a very slightly modified for Australian conditions version of the in-service Spanish F-100 designed by Navantia, and the preferred design evolved by Gibbs & Cox from the US Arleigh Burke class of AWD.

Accordingly, Gibbs & Cox has been selected as the evolved platform designer for this project, while Spanish company Navantia has been selected as the existing (military off the shelf) platform designer.

The US Aegis combat system has been selected and will be supplied by the US Navy via a Foreign Military Sales agreement, and their agent Lockheed Martin who manufacture the system. Aegis incorporates modern phased array radar and will provide an advanced Air defence system capable of engaging enemy Aircraft at ranges in excess of 150km.

At the time of writing negotiations for the various alliance based contracts were continuing, and according to the DMO were meeting expectations for this early stage in the project. However, it is widely understood within defence industry that the alliance negotiations are not progressing as well they might have. ASC Shipbuilding and Raytheon have yet to fully sign up to the alliance, though apparently many contentious issues have been solved in recent weeks and those currently outstanding relate to decision making processes. Further negotiations over the terms of the alliance will occur later in Phase 2.

Bedding down such an alliance always had the potential to be problematic and is taking longer than anticipated. It is understood that while committed to joining, the

various concerns held by ASC have to date prevented their complete acceptance of alliance methodology.

The need to evaluate two competing designs precluded Gibbs & Cox from being a full member of the alliance, and they are participating in the project via a subcontract with Raytheon. Negotiations with F-100 designer Navantia over their participation in Phase 2 have been successfully concluded, and there will be further negotiations over the manner in which they would participate in Phase 3 were the F100 to be selected as the preferred design

Raytheon's role is to integrate the core Aegis combat system with other likely "Australia only" elements of the wider system, such as sonar and communications equipment and the electronic warfare suite. The company's role, however, is still not widely understood in some industry circles.

Some of the technical risks that would normally face a project such as this have been mitigated by the selection of proven systems, such as Aegis, and proven designers, such as Gibbs & Cox or Navantia. That is not to say that significant technical risks are not still present; successfully constructing these vessels and integrating their complex systems at what is currently a green field site in South Australia will certainly be a challenge.

However, the major risk currently facing this project is the potential for extended delay in bedding down the alliance arrangement, to the possible ongoing detriment of relations between the parties. A situation such as that would in part mirror the difficulties encountered on the Collins submarine program, as outlined in some detail in the McIntosh/Prescott report.

However, the project is due for review by government mid this year, and if problems bedding down the alliance persist at that point it would be reasonable to expect that the Commonwealth would investigate other arrangements to deliver the project. Any such changes would of course involve risk to the project's schedule.

The publicly announced budget for the AWD Program is between \$4.5 and \$6 billion, though industry analysts have given estimates of up to \$8 billion if the Navy's full requirements are to be met.

Australian Industry Involvement (AII)

It is the AWD project's intention to maximise AII, and to that end a national AWD "road show" was undertaken last year explain the program to local defence industry and highlight areas where they might become involved.

Airborne Early Warning and Control (AIR 5077)

Project overview and key issues

The six Airborne early warning and control (AEW&C) Aircraft being acquired by Australia are based on Boeing's 737-700 twin-engined Airliner fitted with a radar of over 400km range being developed by Northrop Grumman. Airborne radar can see

much further than ground-based systems in much the same way that a better and more distant view is obtained from the top of a hill.

Successful implementation of this project will enhance the capability of Australia's surveillance and air defence system. AEW&C will allow more effective detection, identification and tracking of targets, and better control of fighters. While the Aircraft's primary role will be wide area surveillance of Australia's Air/Sea gap, it can perform a range of other tasks including over-the-horizon targeting, battlefield surveillance, Search and rescue and civil support operations. The AEW&C system is a crucial force multiplier.

The project's budget approval in 2000 was \$3,110.5 million and is currently \$3,488m in January 2006 dollars. The main variation from the original project budget results from an increase of \$225m for the purchase of the two additional Aircraft as approved by the Government in May 2004. In addition, in line with current Government policy, the project's budget is adjusted yearly to compensate for movements in the cost of labour and materials (ie Inflation) and foreign currency exchange rates (principally against the US dollar).

Any large and technically complex military procurement project carries an element of risk and AEW&C is no exception. The most challenging area will be integration of the radar and mission system computing software.

Recent project achievements include completion of FAA flight certification testing of Aircraft #1 in April 2005, first radar flight in July 2005, commencement of the mission system test and evaluation program by Aircraft #2 in August 2005, the arrival of Aircraft #3 at RAAF Base Amberley to commence the Australia production line in January 2006, and completion of home maintenance base facilities at RAAF Base Williamtown in January 2006.

Milestones expected over the coming year include the construction of operating facilities at RAAF Base Tindal beginning in April 2006, delivery of the operational flight trainer and initial delivery of the operational mission simulator in May 2006 and the commencement of crew training in July 2006. It is also anticipated that the RAAF will take delivery of Aircraft #2 in February 2007 and Aircraft # 1 in March 2007. However, industry rumours at the time of writing are that the project may be delayed by twelve months.

Australian Industry Involvement (AII)

Four of the Aircraft are to be fitted-out in Australia, creating around 170 new jobs in Brisbane, a move that will increase AII by \$80 million. Strategic industry development activity worth an additional \$99 million has also been included with the purchase of the additional Aircraft.

Boeing Australia and BAE Systems Australia are the main local companies involved in an AII program that now comprises some \$474 million in local content and over \$900 million in strategic industry development activities. While a specified percentage has not been set, the local content program represents about 18% of the contract price. The project's AII program will result in the capability within Australian industry to make a substantial contribution to the through life support of

the AEW&C system. According to Defence, some Australian SMEs have won overseas contracts as a direct result of their involvement in this project.

Amphibious Assault Ship (LHD) (JP 2048 Phase 4)

Project overview and key issues

JP 2048 seeks to replace the capability of the current range of ADF amphibious platforms. Phase 4A will replace HMAS TOBRUK with a Landing Ship Helicopter Dock (LHD). Phase 4B will replace one of the two LPA's (HMAS MANOORA or KANIMBLA) with a second LHD. Phase 4C will replace the remaining LPA with a sealift capability by 2016/18. The two ships, to be named HMAS CANBERRA and ADELAIDE, are scheduled to enter service with the RAN from 2012.

In early 2004 Defence released a Request For Information (RFI) to two overseas shipbuilders, Armaris of France and Navantia of Spain, restricting the competition to two LHD designs, the Navantia *Strategic Projection Ship* (27,000 tonne) and the Armaris *Mistral* (22,000 tonne). The two overseas shipbuilders were awarded risk reduction studies, which provided the technical data for the options required by Defence to embark upon a cost estimating process for ship construction in Australia. This process included the four Australian shipbuilders, ADI, ASC, Austal and Tenix, brought in to assist with the design evaluation

The aim of the cost-estimating activity was to establish a 'Sailaway Price' for two ships built in Australia and their life cycle costs. Under the Kinnaird procurement reforms it was also a requirement to compare the prices for local construction with prices for overseas construction, to quantify the 'cost premium' for local construction. This information was needed to support the Initial Business Case for 1st Pass Approval by Government.

With this to hand, the Government gave first pass approval to the project in August 2005, when it committed \$29.8m to the next design development phase. Design Development Activities were undertaken by the two overseas shipbuilders in partnership with Defence to further evaluate the two respective ship designs, incorporating necessary Australian environmental, safety and technical requirements. During this process Defence sent teams to both Spain and France to work on requirements definition with the Spanish and French shipyards.

Due to the perceived disparity between overseas and local build costs (believed to be of the order of 30 per cent) and the Government's stated preference to build the ships in Australia, the project's acquisition strategy was changed. This saw the schedule extended to allow Australian shipyards to better familiarise themselves with both overseas designs and to compete with the very competitive bids made by Navantia and Armaris for their designs/production package.

As a result of the change, a Request for Tender (RFT) was released to the Australian shipbuilding industry on 2 May 2006 (instead of late 2005 as originally proposed), inviting tenders for either or both of the two designs. The tender documentation will allow bidding companies to;

- submit fixed price bids
- bid through life support solutions

- provide innovative solutions to improve price and schedule

The preferred shipbuilder will then be determined once a thorough financial and technical comparison had been made between Australian bids and overseas build options. The shipbuilder and design are to be selected at the same time.

To facilitate the provision of technical information to Australian shipbuilders necessary to prepare an RFT response, teaming arrangements were encouraged between Australian builders and overseas designers. As a result Navantia has teamed with Tenix Defence and Armaris with ADI. The Tenix-Navantia team will propose a variation of the Navantia 27,000 tonne design, while ADI-Armoris will propose a variation of the Armaris 22 000-tonne Mistral class.

Each ship will have the ability to transport up to 1000 personnel, have six helicopter landing spots and provision for a mix of troop lift and armed reconnaissance helicopters. It will also be able to transport up to 150 vehicles including the new M1A1 Abrams tanks and other armoured vehicles. Each ship will also be equipped with medical facilities, including two operating theatres and a hospital ward.

Tenderers will have approximately five months to respond after which a further five to six months will be spent on evaluating the bids and preparing recommendations for Cabinet on the preferred shipbuilder and LHD design.

The Defence Capability Plan (DCP) budget for this project is \$1.5 to \$2 billion. Of the approved project expenditure to date for Phase 4A/4B of \$38m, some \$6m had been spent by 30 June 2005 and a further \$19m was the estimated expenditure for the year ended June 2006.

Australian Industry Involvement (AII)

Australian industry was briefed on the first pass outcomes for this project including overseas vs local build costs. To encourage more competitive bids by local shipbuilders the schedule was extended to provide more time for them to familiarise themselves with the overseas ship designs and further develop their responses. Aside from construction it is anticipated there will be considerable Australian industry involvement in the provision of equipment and fittings to meet Australian requirements for the selected design and in through life support.

ANZAC Ship ASMD Upgrade (SEA 1448 Ph 2A and 2B)

Project overview and key issues

The ANZAC Ship class was initially contracted with a surface and underwater self-defence capability limited by the ceiling price. This Anti-Ship Missile Defence (ASMD) upgrade was introduced to address some of these limitations (other upgrades address Undersea and Surface Warfare capabilities) and provide the class with a reasonable level of anti-ship missile defence against emerging regional capabilities

Moves to upgrade the ships' self defence capabilities--especially against missile threats--culminated in investigations by a combined Defence/Industry study team that recommended a series of essential capabilities as part of the upgrade. These

enhancements and other important capabilities were assessed by DSTO in stressing environments using its modelling and simulation techniques.

Those directly involved in the ANZAC program, Tenix Defence, Saab Systems and the Commonwealth, formed the ANZAC Alliance with the primary role of designing and developing change packages for the ANZAC Class in response to Commonwealth needs. The Alliance was first tasked with determining whether the modelled capability could be procured, integrated and introduced into service and supported within the program budget.

As a result, under Phase 2A, a costed system configuration for the baseline ASMD upgrade was prepared comprising a number of capability enhancements and system upgrades together with some platform design changes. One essential capability, the Link 16 tactical data link, received priority approval for installation under a separate project.

The ASMD upgrade was deferred pending the findings of the 2003 Defence Capability Review and its revised budget went unapproved until the end of 2003 when the Government announced funding approval. However, it wasn't until April 2005 that a Project Alliance Agreement was negotiated and executed with the ANZAC Ship Alliance under a \$260 million contract to implement the Phase 2A high priority aspects of the upgrade.

These were for the Infra Red Search & Track (IRST) for improved detection of low level Aircraft and incoming missiles, and an upgrade to the ship's combat management system to match the functionality of the new equipment and increase its data processing capability. These have been effected through procurement contracts signed with both SAGEM (IRST) and Saab (Sweden) for the Mk 3E Combat Management System, with deliverables on time and within budget.

Phase 2B included a study and trials to consider the feasibility of including an active phased array radar (PAR) as part of an ASMD solution in the ANZAC class. In addition to the PAR, the options included installation of a phased array radar director as the proposed second channel of fire (to enable multiple launch of ESSM missiles and illumination of incoming targets) instead of a second conventional fire control director. Consideration of a very short-range air defence (VSRAD) capability was also included as another option under Phase 2B.

The results of land-based and Sea trials (the latter aboard HMAS ARUNTA) together with revised cost estimates for the options under this phase were submitted for Government consideration by mid-2005. In September 2005 it was announced that CEA Technologies had been chosen to provide their locally designed and developed lightweight Active Phased Array Radar system. The major components of the CEA system are a Search and track radar (CEA-FAR) and a phased array missile illuminator (CEA-MOUNT). In addition to providing self-protection, the ANZAC Anti-Ship Missile Defence system will also be able to protect closely escorted assets such as amphibious ships, auxiliary support vessels and merchant vessels.

Despite this project's early extensive delays, which necessitated cost re-validation by equipment suppliers, risk mitigation studies undertaken during 2004 allowed the

project to proceed within current approved funds. Due to the adoption of the PAR option initial operating capability will slip by one year to 2009.

With the inclusion of the advanced PAR capabilities under Phase 2B, the ASMD upgrade will be implemented ship-by-ship in stages of increasing capability. The final ships will receive the full capability and the earlier ships will be progressively upgraded during scheduled maintenance availabilities.

The approved budgets for Phases 2A and 2B are respectively \$335m and \$396m. From the combined budget of \$731m the estimated cumulative spend to June 2006 is \$48m. It is anticipated that the 2005-06 Portfolio Budget Statements will show that the impact of the delay in implementing the upgrade is reflected in the low actual spend to June 2005 and the increase spend estimated for the current year.

Australian Industry Involvement (All)

There is substantial local industry involvement in the ASMD program through the development, integration, test and verification of the various components by Alliance members including through use of their facilities. Alliance members will also be responsible for the installation, set-to-work, and through life support of the equipment including software maintenance and upgrade.

With the adoption of the Phase 2B phased array radar option the value and level of AII has increased significantly. It is estimated that 130 jobs will be created during acquisition and installation, and 25 jobs to support the capability through the life of the ANZAC frigates.

ANZAC Ship Helicopter (SEA 1411)

Project overview and key issues

Defence is in the process of acquiring 11 Seasprite helicopters for its eventual fleet of eight ANZAC Class frigates. The helicopters are to enhance the ships' surveillance and offensive capabilities and are equipped with radar and other sophisticated sensors along with torpedoes and anti-ship missiles. Flight simulator and support facilities are also being acquired.

Deliveries of fully compliant Aircraft were to have commenced in late 2000 by the prime contractor Kaman and be completed by August 2001. This was delayed by the failure of major sub contractor Litton Integrated Systems to successfully develop the integrated software package necessary to run the sensors, avionics and weapons.

Progress is being made, however, and of the 11 Aircraft, 10 are in Australia and nine have been provisionally accepted. The radar, datalink capability and the Penguin anti-ship missiles have now been successfully integrated with the mission control system. Formal qualification testing of the integrated software was expected to have commenced in April 2006. The 10th Aircraft is now planned to be delivered in the final configuration. The eleventh Aircraft (the second production machine) remains with the prime contractor in the US flying as a test bed for the Full Capability Helicopter. This Aircraft will be shipped back to Australia on completion of the Prime Contractor's test program later this year.

The difference between the Aircraft in its current configuration and the fully functional configuration is the software load. Kaman expects to be in a position to load and present the first Aircraft with the complete operational software suite for acceptance in September 2006. The remaining Aircraft will be converted to the fully functional configuration on a timeline mutually agreed between Kaman and Defence to fit in with Aircrew bridging training through to mid 2007.

The Super Seasprite is being evaluated under the auspices of ABR 6205, the Naval Operational Test and Evaluation Manual. Under this process, Defence anticipates that the Super Seasprite will achieve "Initial Operational Release" later in 2006. "Operational Release" will occur on completion of the Operational Test and Evaluation phase currently scheduled to run through 2007.

The main criticisms of this project have been that Defence's project management team should have prevented this state of affairs, and that the contract in 1997 should have had more effective penalty clauses to encourage contractor performance. Defence points out however, that it was prime contractor Kaman Aerospace International's job to manage Litton, and that it was the Defence project team which advised Kaman of problems with subcontractor performance early in the contract execution. The real problem was more to do with the suitability of the chosen contractors and contracting strategy for this highly developmental software intensive project.

A broader question is whether Defence should seek to buy "Australia only" solutions on projects like this with only a small production run; a path that incurs significant development costs and increases exposure to high levels of technical risk.

Final integration and testing of the fully functioning software load presents a substantial schedule risk to this project. Certification of some aspects of the legacy design also require additional testing or mitigation and thus presents an 18-24 month schedule risk to Operational Release.

The Minister has ordered a high level review of the program to examine options for the way ahead.

Australian Industry Involvement (AII):

Kaman is teamed with Tenix Defence, CSC Australia, Scientific Management Associates and Safe Air NZ. CSC Australia and Northrop Grumman Information Technology of San Diego have taken over the major software sub-contract abandoned by Litton and are providing systems engineering and software development and support.

Scientific Management Associates' involvement covers logistics analysis and supply support functions, and providing training and documentation. Safe Air of New Zealand is providing design services, Aircraft assembly, maintenance and overhaul. Safe Air will also design and manufacture Aircraft ground support equipment.

The contracted total AII obligation stands at \$344.12m in today's dollars. Kaman has reported \$387.72m in AII and expects to complete the project having committed \$492.44m in AII.

The RFT for the project was issued in October 1995, a decision made in January 1997 with a contract signed in June that year. The original project budget was \$745.6 million in February 1996 dollars and currently stands at \$1003.084m in January 2006 dollars. According to the DMO the difference is due to price (inflation) and exchange rate fluctuations and there has been no real cost increase for this project; the current price reflects exchange rate variations and inflation.

Armed Reconnaissance Helicopter (AIR 87)

Project overview and key issues

The Army is gradually fielding a force of 22 Eurocopter Tiger Armed Reconnaissance Helicopters (ARH) under Project AIR 87. These will equip the 1st Aviation Regiment at Robertson Barracks, Darwin and the Army Aviation Training Centre at Oakey.

The Tiger ARH's weapons, sensors and tactical data links will provide a survivable airborne reconnaissance, escort and fire support capability, making it a key element of Australia's emerging Hardened and Networked Army. The Tiger will replace the Army's obsolete Bell UH-1H Iroquois gunships and unarmed Bell 206 Kiowa reconnaissance helicopters. Final delivery is currently scheduled for 30 June 2008.

The total approved budget for this project is \$2 billion at January 2005 prices. This includes a \$1.140 billion fixed-price prime contract signed in December 2001 with Australian Aerospace Ltd, the Australian subsidiary of Eurocopter. The prime contract also includes a training system with a suite of Aircrew and ground crew training devices and a contractor logistics support system.

Based closely on the French Army's Tiger HAP variant, Australia's ARH is armed with a 30mm gun, 70mm rockets, Lockheed Martin Hellfire air to ground missiles and infra red and electro-optic reconnaissance sensors. Built largely from carbon fibre composites with armour and Electronic Warfare Self-Protection (EWSP) systems, the Tiger ARH carries a pilot and 'battle captain' – the tactical coordinator and Aircraft commander. Australian-specific modifications have been minimised to reduce project risks – these comprise secure radios, the Hellfire missiles and some minor associated cockpit modifications.

As of April 2006 five Aircraft had been delivered, with two more awaiting acceptance. The first four were manufactured by Eurocopter in France and two were delivered in December 2004 to achieve the contracted In-Service Date (ISD). The remainder were delivered in 2005, along with the first Australian-assembled Aircraft, which was built at Australian Aerospace's Brisbane facility.

However, after a promising start the project has dropped behind schedule, largely because of delays with the Franco-German elements of the Tiger program rather than any problem specific to Australia's ARH variant.

A key impact of these delays has been on the training of Australian Qualified Flying Instructors (QFIs) who can train squadron pilots; furthermore heavy ADF operational tasking has meant a shortage of Army rotary wing test pilots who can conduct acceptance testing of Aircraft delivered by Australian Aerospace.

As a result, Initial Operational Capability (IOC) with a cadre of trained Aircrew for the first of the two squadrons, has been delayed from July 2007 to the end of 2007. Further collective training by the two Tiger squadrons will be required to develop the full operational capability – or so-called Delivered Operational Capability. This is expected to be achieved by December 2008 when both squadrons and the headquarters and support elements are fully equipped and manned.

The Contractor has deployed two instructors from France to help train the QFIs needed to commence pilot and battle captain training. Australian Aerospace plans to commence squadron pilot training at Oakey in the fourth quarter of 2006.

The throughput of pilots and battle captains will increase once sufficient instructors have been trained and the new twin-dome flight simulator is commissioned. This was delivered to Oakey in early-2006 and final acceptance and accreditation is now planned for early 2007 – once fully accredited to Civil Aviation Safety Authority (CASA) Level D this will allow up to 85 per cent of pilot training to be conducted in the simulator.

The simulator is already being used for QFI familiarisation and to teach emergency procedures; further Aircrew training on the simulator may be introduced from late-2006 depending on its maturity. Pilots will take six months to transition to the ARH Tiger; battle captains will take 12 months.

The Army originally requested a unique simulator but a decision in late-2003 to adopt a more capable device largely identical to that ordered by the French and German Armies for their Tiger variants delayed the delivery of this system. Full accreditation has been delayed by the difficulties with the Franco-German program but so far as the simulator is concerned these have now been resolved and will have no further impact on the ARH program.

The European core program delays have also had a knock-on effect on the schedule for final Australian Military Type Certification (AMTC). As planned, an initial limited AMTC was achieved in October 2005 and as the French Tiger HAP variant is in the final stages of completing certification, the final AMTC for Australia's Tiger ARH variant is expected before the end of 2006.

The Tiger fleet has amassed 822 flying hours to date in Australia and France, where one Aircraft was held back temporarily in 2005 to undertake QFI training. Some of this flying was associated with trials of the Hellfire II missile - Australia is the first Tiger customer to order this weapon and so has led the integration program. The integration program was completed in December 2005 with seven successful test firings at Woomera, though the DMO reports further firings may be required following complete analysis of all test data.

The Tiger will gather and exchange tactical and surveillance data with Army's Battlefield Command Support System (BCSS) through a dedicated suite of Ground

Mission Equipment (GME). Final acceptance of the GME, including training and software support capabilities to be installed at the Australian Army Aviation Training Centre at Oakey and at 1st Aviation Regiment's facilities, is scheduled for June 2006.

Eurocopter has completed minor engine modifications to ensure the ARH meets the contracted requirement for additional power margins under certain flight conditions – the contractual issues are close to being resolved.

The new 1st Aviation Regiment facilities at Robertson Barracks are nearing completion. The Command Precinct is complete and occupation has commenced. The Maintenance/Logistics Precinct was undergoing formal acceptance in April 2006.

With the majority of technical issues settled, the major potential risk to the program is of schedule slippage: the principal cause has been late arrival of Aircrew training devices compounded by the slippage in the Franco-German program which in turn has delayed the training of QFIs. Attention now focuses on accelerating the delivery of Aircrew training devices.

Achievement of the AMTC is dependent upon completion of the Franco-German certification program.

Australian Industry Involvement (AII)

AII Target: In-service support capability, especially for sensors, mission and EW system software and Airframe, engine and mechanical repairs.

AII Achievement: Except for the first four Aircraft, which were built in France, the Tigers will be assembled by Australian Aerospace Pty Ltd in Brisbane; this will be their logistics support base, sustained by an assembly line for Eurocopter's EC-120 Colibri light turbine helicopter.

ADI Ltd and Avalon Systems Pty Ltd will be responsible for the ground mission segment and part of the software support aspects of the contract; and Haliburton KBR Pty Ltd will be responsible for delivering Aircrew and ground crew training, except for tactical training which will be provided by uniformed personnel. Thales Training and Simulation Pty Ltd will deliver the Aircrew training devices. In addition, Australia will be the sole source of some components for the global Tiger program: ADI is providing electrical wiring looms, Honeywell is building flight control components and all ground training devices have been designed and produced in Australia by local SMEs.

In April 2006, Australian Aerospace announced it would invest some \$15 million establishing a state-of-the-art composite fibre manufacturing plant in Queensland. This will initially produce fuselage parts and fittings for Australia's Tiger and MRH90 helicopters – see the brief for Project AIR 9000.

Armidale Class Patrol Boat (SEA 1444)

Project overview and key issues

This project is acquiring a fleet of 12 Armidale-class patrol boats to replace the RAN's 15-strong fleet of Fremantle-class patrol boats under a build and support contract with Defence Maritime Services Pty Ltd (DMS) worth \$551 million.

An extension to this contract will see a further two Armidale-class boats acquired specifically to patrol Australia's North West Shelf oil and gas installations off the coast of Western Australia.

The first three boats, built under a sub-contract with Austal Ships Ltd in Fremantle, have been delivered on time. The remainder, including the two extra boats, will be delivered by September 2007. The entire fleet will be home ported in Darwin and Cairns and supported throughout their service lives by Defence Maritime Services Pty Ltd (DMS).

The lightly-armed 56.8m Armidale-class patrol boats are constructed from aluminium to merchant classification rules, rather than to a military specification. The prime contractor is DMS; a 50:50 joint venture between P&O Maritime Services and SERCO. Austal is the principal sub-contractor. Canberra-based CEA Technologies Pty Ltd is a sub-contractor to Austal and is providing the boats' communications and sensor suite based on equipment and technology proven aboard the RAN's Huon-class minehunters.

The RAN's Patrol Boat Force carries out search and rescue, surveillance and interception of vessels suspected of illegal fisheries, quarantine, customs or immigration offences. They are the principal maritime patrol and response element of Australia's Civil Surveillance Program, which is managed by Coastwatch in consultation with the RAN.

The Armidale-class boats are a significant improvement over the Fremantles in most areas. Their 3,000 nautical mile range is 20 per cent greater; they are equipped with a stabilised, remote-controlled 25mm M242 Bushmaster 25mm cannon; being some 15m longer and equipped with stabilisers they can operate in worse sea conditions; they also carry two 7.24m rigid inflatable boats, rather than one, to enable concurrent boarding operations and these can be launched and recovered in higher seas. However, they are not designed to serve in the Southern Ocean. They have a crew of 21 with accommodation for eight extra personnel if the mission demands it.

The tender, released in 2002, was based on a functional specification stating the required capability and rate of effort of the new patrol boat fleet and invited innovative and cost effective solutions to meet it.

DMS was named preferred tenderer in August 2003 and the 19-year contract worth \$551 million (at October 2002 prices) was signed in December 2003. The contract value included the cost of building all 12 boats by Austal at its Henderson yard in Western Australia and 15 years in-service support (from 2007) by DMS which is responsible for all training, logistics and maintenance throughout their operational lives. The first of class, HMAS Armidale, was commissioned in Darwin in June 2005.

Under the contract DMS is required to guarantee a specified level of availability. The twelve Armidale-class boats must be available for a combined total of 3,000 sea days per year. A surge capacity of 600 additional days per year is also required to meet short notice contingencies. The Fremantle-class boats have an average availability rate of about 2,700 days per year.

At the time of writing the Contract Change Proposal (CCP) to cover the acquisition of the two extra boats was being finalised. They will be delivered between July and September 2007 and supported by DMS under the same contractual arrangements as the original 12 boats. The Navy's concept is that any of the Armidale-class boats based in Darwin will be able to be deployed forward to Dampier to meet the North West Shelf patrol requirement.

To ensure the most efficient use of each boat the Navy has adopted a multi-crew arrangement where, as a boat falls due for maintenance, its crew transfers in its entirety to another. Crews outnumber ships, so enabling training and rest requirements to be managed efficiently also. With such a young class of ships the first rotations haven't occurred as yet so the multi-crew concept hasn't been tested. The short-notice deployment of HMAS Armidale to Solomon Islands in April 2006 will be the first operational test by Navy of the new crewing and support arrangements.

The establishment in 2005 of Joint Offshore Protection Command and the signing in early-2006 of the Coastwatch Civil Maritime Surveillance 04 contract with National Air Support is unlikely to generate a requirement for changes to the boats' command and communications equipment.

However, the Navy is planning a trial in the latter part of 2006 of Unmanned Aerial Vehicles (UAV) aboard an Armidale-class boat to assess launch and recovery issues, what enhancements a UAV could make to the boats' surveillance capabilities, and what impact a UAV will make on the boats' command, control and communications systems. Once the trial outcome is known the potential exists for the purchase of a UAV to equip the Armidale-class at some point in the future.

Aside from the UAV capability, which is not part of the prime contract, the technical risks associated with this project are slight – Austal is a world-class designer and builder of aluminium-hulled merchant and military craft and the Armidale-class boats are constructed to merchant classification rules with a simple, low-risk communications and sensor suite.

The aggressive construction schedule for the Armidale-class boats makes the program potentially a hostage to industrial action or a simple shortage of skilled construction workers. But the major area of potential program risk now is the long term reliability of the vessels and DMS' ability to provide efficient and sustainable in-service and logistics support throughout their service lives.

Notwithstanding DMS's experience of operating over 100 small craft of different types under the RAN's 10-year, \$320 million Port Services and Support Craft (PSSC) contract, there is currently insufficient Armidale-class data and operating experience to determine whether any of these risks are starting to materialise. However, DMS has demonstrated its ability so far to maintain the vessels in service as contracted.

Australian Industry Involvement (AII)

AII Target: The essential target was for 65 per cent AII in the construction of the boats and 90 per cent in maintenance and in-service support. The program is meeting these targets: the boats and their communications and sensor equipment are being designed and built in Australia. DMS is providing in-service support using Australian staff organised in Ship Management Teams located at Darwin and Cairns.

Bushranger (LAND 116)

Project overview and key issues

Project Bushranger was created to increase the mobility of Australia's infantry soldiers by equipping their units with four-wheel drive armoured vehicles that offer protection against small arms fire and mine blasts.

This class of vehicle is referred to as an Infantry Mobility Vehicle (IMV) and its role is to deliver foot soldiers to their area of operations in relative comfort and safety so they are fresh and ready to fight. An IMV is not a tank or an armoured fighting vehicle.

A \$200 million contract was signed with ADI Ltd on June 1, 1999 for the supply of 350 of their Bushmaster IMVs in six variants including troop transports, command vehicles and ambulances. The transport vehicle is capable of carrying up to 10 troops and has a range of 600 kilometres.

Production was then expected to commence in mid 2000 with the first vehicles entering service two years later, however the project was beset with delays and uncertainty and was almost cancelled by recommendation of the Defence Capability and Investment Committee at the end of 2001.

At issue were concerns over the long-term reliability of the Bushmaster and some changes in specification. The reliability problems were mainly in the vehicle's driveline and concern the durability of axles, drive shafts and hubs. A Bushmaster has an all-up weight of about 14,700kg and as such imposes comparatively high loads on these components.

Major changes to the design since the initial contract have affected both the engine and transmission. Minor changes have included a smaller back door and relocated hatches, a tenth seat, fitting the vehicle "for but not with" a grenade launching system and "run flat" inserts for the tyres. The specification changes, design rectification and reduced number of vehicles have seen the unit cost increase. This led to a new contract price of \$219m for 299 vehicles. The overall project budget is currently \$352m which will also allow the procurement of support vehicles, spares, test equipment and facilities.

ADI passed a reliability qualification test in late 2002 using reworked prototype vehicles, and low rate initial production of a small batch of vehicles commenced soon afterwards. Full rate production commenced in December 2004 and ADI reached their maximum production output of one vehicle every two days in April 2005. The last vehicle to be delivered is scheduled for July 2007, which matches the operational capability date.

Ten Bushmaster vehicles were deployed to Iraq in April 2005 to provide enhanced protection for logistic personnel serving as part of the Al Muthanna task force and further four vehicles were deployed to Afghanistan in August 2005. The deployed vehicles are reported to be providing exceptional mobility and protection for Australian soldiers and have generated significant international interest. By April 2006, over 130 vehicles have been delivered to the Australian Army. All of these

vehicles have exhibited high levels of operational availability, which can be attributed to the rigorous testing that the vehicles were subjected to during their design phase.

The two main causes of problems this project faced were insufficient time being allowed to get a prototype vehicle into production, and signing a production contract when the final specification Army required had yet to be finalised.

According to the DMO the main risk facing the project is the potential for schedule delay caused by the failure of any of the five remaining variants (command, assault pioneer, direct fire weapons, mortar and ambulance) during prototype review and operational testing.

Australian Industry Involvement (AII)

ADI Ltd has been contracted to achieve AII levels of 69%, and the vehicles will be manufactured at ADI's Bendigo facility in Victoria. At the time of contract signing ADI estimated that the project would create 40 new jobs, mainly among shop floor personnel.

The delivery rate for the infantry mobility troop variant is two per week with final deliveries scheduled for 18 May, this year. The delivery of other variants (command, assault pioneer, direct fire weapon, mortar and ambulance) will commence with the command variant in July 2006, and be complete with the final variant (ambulance) scheduled for delivery in July 2007. The delivery of vehicles is on schedule.

Collins Reliability & Sustainability (SEA 1439 Ph 3)

Project overview and key issues

SEA 1439 is a wide ranging multi-phased project aimed at maximising the capability of the Collins-class submarines by rectifying deficiencies in their platform and combat systems, enhancing their sensor and communications systems, introducing a program of continuous improvement and finally replacing their sonar systems.

The original Collins submarine construction project (SEA 1114) sought to provide an advanced submarine capability for the RAN out to 2015 and beyond. But due to deficiencies in the capability of the delivered submarines interim measures were introduced to bring three submarines, COLLINS, DECHANEUX and SHEEAN, to an enhanced level of operational capability.

This activity was concerned essentially with short term improvements and, as the 'trials platform', COLLINS underwent additional propeller and hull improvements and some augmentation of the combat system with much of this work drawing upon the US Navy's expertise and equipment. (The USN had encountered similar data handling problems in the combat systems of their LOS ANGELES-Class SSNs and had developed augmentation packages for this purpose).

In this 'fast track' program progressed under project SEA 1446, DECHANEUX and SHEAAN were brought to the MLOC (Minimum Level of Operational Capability) standard with measures to provide improved self protection, self defence, discrete high speed communications and better mechanical reliability. The program was subsequently widened and the functionality of the combat systems of the two submarines was augmented beyond that provided for COLLINS.

While platform systems shortcomings were rectified on the two fast track submarines, it has been necessary to implement these and other capability enhancements on the remaining four submarines as opportunity permits, noting that the many of these issues still required design and support development. Major fast-track platform system upgrades have now been completed on all submarines with the exception of WALLER, which will receive these modifications during its current full cycle docking. This activity, together with overall infrastructure improvements, was approved under Phase 3 of SEA 1439 as Reliability & Sustainability improvements.

Phase 3 consists of a large number of discrete modifications to the Collins Class submarines and shore infrastructure. They are being introduced progressively over a number of years and are fitted to submarines during appropriate maintenance availabilities when the modification packages become available. Because the modifications require extensive design and integration within the platform they can only be completed during full cycle dockings, which currently occur at 7-year cycles. Completion of the entire program, which is dependant on the submarines' full cycle docking program, is planned for 2015. Remaining major activities include:

- Special Forces modifications,
- Sewage System automation and
- Fire Fighting improvements.

The prototype Special Forces capability modifications have been implemented on COLLINS as part of a 'staged delivery' system development life cycle to minimise risk and to match ASC design and production capacity. The work is being progressed under seven stages planned for completion between now and 2008.

Design development of the Sewage System upgrade is complete and the modifications are currently being implemented on WALLER in its full cycle docking. The remaining submarines will be modified during their next full cycle dockings. The Fire Fighting system safety modification is being progressed in three phases, with the first implemented on WALLER. Design development of phases 2 and 3 is progressing with implementation of phase 2 planned for DECHANEUX in its full cycle docking in 2008, and phase 3 on FARNCOMB in its mid-cycle docking in 2007.

The Phase 5 Continuous Improvement Program (CIP) is marking a new direction in the through-life management of submarine capability. The strategy behind continuous improvement is to provide regular capability upgrades rather than have a mid-life upgrade for the class. Activities under the program include;

- additional third generation propellers already prototyped under SEA 1439 Ph 3
- the class fit of multi-functional communications antenna and mast prototyped under SEA 1439 Ph 4B
- the class fit of extremely high frequency communications antenna and mast, and

- sub-microwave ESM upgrade

The extent to which some of these and other tasks may have been held back by higher priority submarine work, due to the constraints of ASC's existing workforce, is an issue of some concern. One problem is the disruption to workloads matched to industrial capacity by operational imperatives especially in the current climate of skills shortages. These issues have impacted on the budget estimates.

Of the \$370 million approved for SEA 1439 Phase 3, cumulative expenditure to June 2005 was \$146m, with spending of \$33m anticipated during 2005-06 bringing the total spend to \$179m. This was \$6m less than previously estimated due to competing priorities to other work being carried out by ASC Pty Ltd.

Australian industry involvement

While the capability enhancements and improvements to the Collins submarine involve overseas sourcing of major equipment items there is very considerable scope for the continued involvement of Australian industry in the design, integration, installation and long term support of the submarines and their equipment as well as ongoing opportunities for the manufacture and supply of components. Many of these activities are linked to the industry capabilities advocated by the Defence Electronics Sector Strategic Plan as critical to Australian defence self-reliance.

Collins Replacement Combat System (SEA 1439 Ph 4A)

Project overview and key issues

Phase 4, Collins Full Operational Capability, is a major component of SEA 1439, a multi-phase project concerned with maximising the capability of the Collins-class submarines by rectifying deficiencies in their platform and combat capabilities. Phase 4 has seen enhancements to the submarines' sensors including sonar, electronic surveillance and towed array processing as well as improvements to the communications functions.

A major hurdle in the late 1990s to achieving full operational capability was the unacceptable performance of the combat system under SEA 1439 Phase 4A due to major shortcomings in sonar processing and data integration. It was initially proposed to replace the combat system with a commercial off the shelf (COTS) system, and following integration studies and the issue of a formal request for tender, systems proposed by STN Atlas and Raytheon were evaluated. However this process was cancelled in favour of a collaborative arrangement with the US Navy under which much of the combat system technology is to be sourced from overseas with local industry involved in the integration and installation of the systems as well as supplying some components and specific support activity. This acquisition strategy was considered a significant risk mitigation factor in that most of the equipment will be non-developmental and in service with the USN.

This strategy was confirmed in September 2002 when the Government announced a \$400 million project to purchase replacement combat systems (RCS) for the Collins-class submarines based on the Raytheon CCS Mark II tactical command and control system, now known as AN/BYG-1, currently in use with the US Navy. As part of the

program, the sonar augmentation installed in two submarines, HMA Ships SHEEAN and DECHANEUX would be installed in the remaining submarines.

Initial Design Studies involving Raytheon, STN-Atlas and Thales Underwater Systems, those companies participating in the earlier COTS acquisition proposal, together with DSTO, ASC Pty Ltd and the US Navy, covered issues such as cost, schedule and risk, and the acquisition, integration and installation of the new combat system and peripheral systems. Following completion of the studies the main acquisition contracts were signed between June and October 2003.

The RCS program involves replacement of the tactical component of the combat system by the AN/BYG-1 tactical command and control system, sonar control and display upgrades, plus system and navigation improvements. The developmental risk associated with the AN/BYG-1 is shared with the USN. The Commonwealth assumes the risk associated with Collins-specific aspects of the AN/BYG-1 and the remainder of the sonar and navigation upgrades, including system integration risks.

A major part of the RCS is being procured from the United States Navy, initially via a Foreign Military Sales case signed in June 2003 which saw the procurement of five AN/BYG-1 systems. Of these one was for the Australian test facility, one for the US test facility at Naval Undersea Weapons Center, one for DSTO research and two systems for the first two submarines to be converted. The remaining four boat systems and upgrades to the shore systems are being acquired under the Armaments Cooperative Project (ACP) arrangement with the USN. Under this cooperative program Raytheon US and General Dynamics will provide the systems and the ongoing development of the combat system.

A key element of the ACP is the use of COTS technology updates to manage obsolescence and related integrated logistic support by incremental replacement. With the hardware improvement comes increased processing power which enables incremental improvement to system software capability. Improvements for Australian submarines under this continuous improvement program will focus on improved user displays, operator use-ability, tactical situation awareness and the early integration of the Common Broadband Advanced Sonar System (CBASS) torpedo capability.

Multi-function system hardware including servers, displays, harnesses and smaller components from Australian-based suppliers are being delivered progressively. Delivery of fully tested USN tactical software, and subsequently the start of the full integration at the land-based Integration Test and Training Facility (ITTF) was effected in December 2005 with initial integration of Australian supplied equipment and software commencing in September 2005 as planned. Replacement combat system integration was completed as scheduled in April 2006. Acceptance of the ITTF as a fully integrated and tested system is planned for August 2006. The ITTF will be operated by the DMO during the integration, test and initial training phases of the project and then shared with the RAN for on-going training and development

The approved acquisition strategy identified Raytheon Australia Pty Ltd (RAPL) as the integration support contractor and ASC Pty Ltd as the submarine installation contractor. Under a \$54 million contract signed in August 2003 RAPL is tasked to design, develop and produce hardware and software to support the installation and integration of the combat system into the submarines.

Under Through Life Support Agreement orders, ASC Pty Ltd is undertaking platform modification design and preparatory work for the installation of the RCS. An order has been placed with ASC for installation of the first RCS in HMAS WALLER. This task is on track for completion by November 2006 with Interim Operational Release due to occur in the third quarter of 2007, with all submarines upgraded by the end of the decade.

Of the \$444m approved funding for Phase 4A, cumulative expenditure to June 2005 totals some \$208m with a further spend of \$90m estimated to June 2006. Approved funding is expected to cover the acquisition and installation of the current USN AN/BYG-1 system as well as sonar upgrades on all the Collins class submarines. Some of the costs under the TLS Agreement are being refined but are expected to remain within budget. As noted earlier, later equipment is being procured under the Armaments Cooperation Project with the USN, rather than as an FMS case.

Australian Industry Involvement (AII)

While the capability enhancements and improvements to the Collins submarine involve overseas sourcing of major equipment items there is considerable scope for the continued involvement of Australian industry in the integration, installation and long term support of the submarines and their equipment as well as ongoing opportunities for the manufacture and supply of components. The original estimate of up to 30% AII is likely to be achieved.

This program is in strong accordance with the development and sustainment of capabilities critical to Australian defence self reliance including military systems integration and underwater acoustic technologies such as sensors and communications.

Electronic Warfare Self Protection for Selected Aircraft (AIR 5416 Ph 2)

Project overview and key issues

AIR 5416 (Project Echidna) was established to redress the electronic warfare self-protection (EWSP) limitations of selected ADF Aircraft. Echidna had its genesis in two projects, one concerned with upgrading the EW capabilities of the F/RF-111C fleet and the other with equipping ADF transport Aircraft with EWSP systems. These projects were restructured to create AIR 5416 with short-term action taken to upgrade EWSP suites on C-130H and F-111 Aircraft to meet operational needs.

Echidna's first phase had three stages. The first was for the full scale engineering development (FSED) of the indigenous radar warning receiver, the ALR-2002 by BAE Systems, as a key element of the Echidna EWSP suite. The second stage provided for separate 18-month funded Initial Design Activities (IDA) conducted by Tenix Defence Systems and BAE Systems for the design and costing of a common EWSP suite, completed in 2002. The third stage was for the provision of ballistic protection measures for the Black Hawk helicopter now completed.

Under the current Echidna Phase 2, EWSP systems and ballistic protection measures are being acquired for selected ADF Aircraft under the following sub-phases;

- Phase 2A - Black Hawk and Chinook helicopters
- Phase 2B - C-130 H tactical transport fleet
- Phase 2 C - Ballistic protection measures for the RAN Sea King fleet (subject to the retirement plans for the Aircraft giving an adequate return on investment)

Echidna Phase 2A will bring to production the design commenced in Phase 1 for the Black Hawk and Chinook helicopter fleets. A \$121.5 million contract was signed with BAE Systems in February 2005 for the design, development, integration and installation of an EWSP capability for Black Hawk and Chinook Aircraft. It was also announced that subject to satisfactory contract negotiations, this capability would include the ALR-2002 which would be a companion program to the selection of the ALR-2002B RWR for Hornet Aircraft. This sub-phase also includes support infrastructure such as modifications to the Black Hawk simulator.

The Black Hawk Architectural Design Review, completed in April 2006, is the first platform level major milestone completed under this phase. Initial Operating Capability (IOC) for the modified Black Hawk will be achieved by the end of 2008. EWSP for the first article Chinook remains on track for completion in 2009.

Phase 2B will further develop the system installed earlier on four C-130H Aircraft and extend it to all 12 Aircraft in the C-130H fleet. A \$25 million contract was signed with Tenix Defence Aerospace Division, the prime contractor for the previous installation, on 22 December 2004 for the integration and installation of the EWSP capability.

The first two Phase 2B Aircraft modified with EWSP will be delivered by the end of 2006 and the next two Aircraft will be completed by mid-2007. These dates are consistent with the original Tenix contract master schedule. The in-service date (ISD) for the EWSP modification of all 12 C-130H Aircraft is mid-2008.

Approved expenditure for Phase 2 is \$290 million of which cumulative expenditure to June 2005 was \$29m and a further \$48m estimated expenditure for 2005-06.

Other phases of Echidna include Phase 3 related to enhancing the EWSP capability of the F-111 to ensure its operational effectiveness to the planned retirement date of the Aircraft. This phase is in production and has some 12-18 months run prior to completion. Phase 4A comprises two capability enhancements for the C-130J fleet: installation of countermeasures dispensing and missile warning systems, together with the incorporation of ballistic protection in all Aircraft. This phase is close to completion with minor enhancements to the mission support system at JEWOSU pending.

Australian Industry Involvement (AII)

No specific AII target has been set for AIR 5416 although there are AII objectives for Echidna Phase 2 related to flow down of the strategic industry development and sustainment requirements set out in the Defence Electronics Sector Strategic Plan. In this respect Phase 2A industry activities are in close accordance with the development

of those industry capabilities seen as critical for Australia's defence self reliance, including military systems integration and electronic warfare systems.

The Australian technology content of the ALR-2002 radar warning receiver is considerable. It covers all the software, 80 per cent of the hardware piece parts with 30 per cent of that provided through Micro for RF components. All design, production and testing is carried out in Australia.

FFG Progressive Upgrade (SEA 1390 Phase 2)

Project overview and key issues

With the decommissioning of two of the oldest ships, 01 ADELAIDE (November 2005) and 02 CANBERRA (September 2006), the RAN will have four ADELAIDE Class frigates based on the US designed FFG-7 guided missile frigate, the earlier two of which were built in the United States and the other two in Australia.

Designed as carrier escorts for operation in low to moderate threat environments, they came with modest combat capabilities including anti-air and anti-ship missile systems, a 76mm gun and torpedo tubes. Additional enhancements for RAN operations included the addition of a Seahawk helicopter and the Nulka anti-missile decoy.

This project was initiated due to the growing mismatch between the capability of the FFG's unchanged sensor and weapon systems and the increasing and complex regional threat environment. The ships have also experienced supportability problems through component obsolescence and the high maintenance costs of some equipment.

The SEA 1390 progressive upgrade project will restore the FFGs parity against regional capabilities through upgrades to their air defence, anti-submarine and anti-surface warfare capabilities with specific emphasis on improved self-defence against anti-ship missiles—a significant performance shortcoming. It is anticipated that the service life of the two US-built ships and the two younger Australian-built ships will be extended progressively from 2016 to 2020.

ADI Limited was awarded the prime implementation contract, now worth some \$1467 million, in June 1999. ADI's successful bid included the upgrade of the existing FFG fire control system to a modern variant and the installation of a Mk 41 VLS missile launch system. The Evolved SeaSparrow Missile (ESSM) will be used as the short-range self-defence missile, while the Phalanx close in weapon system will also be integrated into the fire control system. The command and control system will be wholly replaced with a local area network, linking all sensors and weapons.

The hull-mounted sonar is also being replaced and the current long-range air warning radar upgraded. The provision of the Link 16 tactical data link will improve communications with allies, while replacement of the diesel generators and air compressors will improve the ships through life supportability. A further upgrade will see the four ships equipped with SM-2 surface to air missiles, a move designed to further boost the ships' air defence capabilities. That task will be undertaken separately but in parallel with the upgrade program.

While extending the life and reliability of the platform was not considered unusually difficult the development and integration of the ships combat system has been a major challenge for ADI. Schedule risk for this project has always been high due to the complex and extensive weapon, sensor, and command and control systems upgrades. Difficulties with the integration task have resulted in an overall schedule delay, now exceeding 30 months. This has been a troubling issue with the project in view of the high intensity operations, which have involved the RAN in recent years.

The lead ship in the program, HMAS SYDNEY, was formally handed back to the Navy on 28 April 2006, following extensive harbour tests and sea trials, which had commenced in late 2004. Contrary to some speculation the sea trials revealed no adverse impact on the ship's performance due to increased weight from the upgrade or instability from the forward mounting of the Mk 41 Vertical Launch System. It is anticipated that the ship will be provisionally accepted into RAN service by December 2006.

The first follow-on FFG for the Upgrade, HMAS MELBOURNE, entered the Captain Cook Graving Dock at Garden Island, Sydney in mid-February 2005 and formally commenced the production and installation phase of the Upgrade on 27 February 2005. Current planning has HMAS MELBOURNE being provisionally accepted by the RAN in October 2007. It is anticipated that the other two ships will follow at intervals of 12 to 15 months. The program should be completed with the delivery of the last ship in mid-2009.

Despite the extensive and serious schedule delay the project is still within budget although some future slippage is likely. Cumulative expenditure of the project to June 2005 was \$965m from an approved budget of \$1467m. Expenditure during 2005-06 is estimated at \$57m, some \$59m less than originally forecast due to program schedule slippage by the contractor. This resulted in the non-achievement of payment milestones and earned value claims less than anticipated.

The cost impact of the decision to upgrade four instead of six frigates has not been finalised and negotiations with the prime contractor for the Prime Contract scope reduction are still in progress, albeit nearing completion.

Australian Industry Involvement (AII)

ADI Limited was contracted to achieve AII levels of 52 per cent of the contract value. The support and maintenance of new operational software at the Weapon System Support Centre, established by ADI at Garden Island, is an important component of AII. It is anticipated that ADI's 52% target of contract value will be realised.

Heavyweight Torpedoes (SEA 1429)

Project overview and key issues

Project SEA 1429 will acquire a new heavyweight torpedo for the Collins Class submarines, replacing the Mk 48 Mod 4 heavyweight torpedo currently in service with the Royal Australian Navy.

A Memorandum of Understanding between the Australian and US Governments has been established to jointly develop the Mk 48 Advanced Capability (ADCAP) Mod 7 Common Broadband Advanced Sonar System (CBASS). The new torpedo will have greater autonomy allowing earlier severance of the wire guidance system, a move that allows the submarine to leave the target's vicinity earlier, increasing its chances of survival.

The selection of this torpedo has its roots in the July 2001 termination of the competition for a replacement combat system for the Collins Class. When announcing that decision then Defence Minister, Peter Reith, said that, "The selection process for the heavy weight torpedo has also been terminated. A new arrangement will be developed by the Australian and US Navies under a cooperation agreement." He claimed that the benefits of his decision included greater access to US Navy tactical information, re-supply in time of need and the provision of torpedo firing exercises with US submarines.

Development of the Mk48ADCAP is reported to be progressing largely as expected. Some early reliability problems with the torpedo hardware (Broadband Sonar Analogue Receiver), now corrected, delayed in-water testing. However, a number of in-water runs have been completed in US and Australian waters during 2005 and 2006.

One of the main elements of technical risk facing the project involved integrating advancements in processing capability into the Mk 48 ADCAP torpedo.

The submarines will require modifications to carry and fire the new torpedoes, including the outboard embarkation ramp, weapons racks, scissors lift, internal hydraulics and weapons discharge system. Work to modify the first submarine, HMAS Waller, is reported to be progressing well at ASC's premises in South Australia.

A replacement combat system is being provided under a separate project to fire the new digital torpedo. Some different maintenance facilities and test and support equipment is also necessary.

The main benefits from the successful implementation of the project include a significant step-up in torpedo capability; the transfer of torpedo technology to Australia; the ability to influence requirements through co-operative development; and, continued interoperability with the USN. The torpedo maintenance facility at HMAS Stirling successfully prepared and then re constituted the CBASS weapons used in the test firings in Australia during 2005.

The original budget for this project was \$358 million in December 1996 dollars and is currently \$420 million* in January 2006 dollars. According to Defence the difference is due to inflation increases and variations in the Australian US dollar exchange rate, not project budget increases.

The original in-service date was December 2006 while the current in-service date is listed as 2006/07. Modification of the first submarine, HMAS Waller, commenced in mid 2005 during a full cycle docking. Re-equipping all the Collins Class will take

about four years depending on submarine availability

Australian Industry Involvement (AII):

Defence will acquire the new torpedo under an Armaments Cooperative Project with the US Government. The terms of the Armaments Cooperative Project provide an opportunity for the RAN to influence future development of the new torpedo, increase self-reliance through access to all software source code and technical data, and is an opportunity afforded no other submarine-operating nation. There will be scope, albeit limited, for Australian industry to participate through submarine integration, testing and evaluation activities, algorithm development and through in-service support of the new weapon.

High Frequency Modernisation (JP 2043 Ph 3A)

Project overview and key issues

When it is fully commissioned the Modernised High Frequency Communications System (MHFCS) will provide enhanced high frequency (HF) radio communications for the command and control of deployed Australian Defence Force (ADF) assets. The prime contract for the modernised communications system was awarded to Boeing Australia Ltd (BAL) in 1997. The system is being delivered in two major stages:

- The first stage (the Core System) rationalises existing facilities, providing a replacement capability for the Navy and Air Force HF communications networks.
- The second stage (the Final Network) will provide increased levels of automation and capability for enhanced information transfer capabilities to some ships, to ground mobile stations and Aircraft.

The system comprises a fixed HF radio communications network of four stations in the Riverina, Darwin, Townsville and North West Cape with centralised control exercised through network management facilities in Canberra. When completed the new system will be backwards compatible with the existing systems and will retain interoperability with Australia's allies.

Deployed ADF forces are critically dependent on long range communications for command and control and the timely dissemination of intelligence. HF radio and communications satellites provide these long-range communications with HF radio an essential complement to satellite communications systems. Although HF radio has a lower capacity to pass information than satellites, it has the advantages of being under national control, on Australian territory, and covers a larger geographical area than any single satellite. Until the ADF has a mature satellite communications capability, HF radio will continue to provide primary and survivable long range tactical communications. Thereafter, HF radio, with its greater survivability, will provide an essential redundant capability should satellite communications be disrupted.

The Stage 1 Core System (or MHFCS Core) was accepted in October 2004 and is currently being used to support operational military platforms. As a result RAAF fixed network stations at Sydney, Townsville, Darwin and Perth, and RAN fixed network stations at Canberra and Exmouth have closed. Acceptance of the core

system marked the inception of the Defence Communications Station (DEFCOMMSTA Australia) which houses the Fixed Network of four nodes, located at Riverina, Townsville, Darwin, and North West Cape. Each node consists of transmit and receive stations and a local management facility: MHFCS Core is controlled from the central Network Management Facility (NMF) in Canberra. The nodes and the NMF are interconnected via the Defence Secure Data Network.

Stage 2 of the prime contract (the Final System or MHFCS Final) will provide enhanced capabilities over HF radio such as automatic link establishment, secure digital voice, facsimile, imagery and data. Following re-baselining of the project, the Final System is on target for delivery in late 2007. The preliminary design review for the MHFCS Final was completed in August 2005.

MHFCS Final will build on the survivable, reliable, long-range secure and insecure tactical HF communications delivered by the MHFCS Core, providing an area of coverage on and over continental Australia and offshore to at least 2000 nautical miles. A separate activity, upgrades to selected mobile platforms, is planned for completion by late-2010, subject to platform availability. Mobile platforms to receive new equipment under this project are Chinook and Black Hawk helicopters, Armidale Class patrol boats, Huon Class MHCs, Hydrographic ships, Local Mine Countermeasures HQs, Army Strategic HF platforms, RAAF Combat Communications squadron, and designated training facilities.

ADF operators, together with contracted operators, will continue to be used within the Modernised HF Communications System until acceptance of the MHFCS Final. Under a Network Operation and Support contract BAL will provide civilian operators and maintainers for a period of five years from final acceptance of the network. There will be an ADF headquarters element for communications planning and supervision as well as some Commonwealth personnel for the handling of sensitive information.

The new system will employ automatic techniques and improved communications protocols to provide higher quality connections than have been achievable in the past without the need for skilled operators. It will also provide higher capacity communications links than the present high frequency system.

Of the approved Phase 3A budget total of \$609 million, cumulative expenditure to June 2005 was \$306m with another \$23m spend during 2005-06. This was an under-spend of \$11m compared to earlier estimates and was due to risk reduction activities and re-planning due to contractor delays which resulted in milestone payments being moved to 2006-07.

Australian Industry Involvement (AII)

There is significant AII and local content in the HFMOD project with a target for local content of not less than 74%. It is anticipated that this target will be over achieved.

Hornet Upgrade (AIR 5376)

Project overview and key issues

Project AIR 5376 is a wide-ranging upgrade of the RAAF's fleet of 71 F/A-18A/B Hornet fighters. This will see the Aircraft equipped with new sensors, mission computers, self-defence systems and weapons. Along with a planned structural refurbishment, the upgrade program will equip the Hornets to assume the strike role currently filled by the F-111 until the F-35 Joint Strike Fighter enters operational service from about 2014 onwards.

The total value of Project AIR 5376 is \$2.218 billion with most elements scheduled for completion around 2009. With a few exceptions, the upgrade program is based on similar avionics and structural upgrades undertaken previously or concurrently by the US Navy and Canadian Forces.

Most elements of the upgrade are being acquired from the US Navy through a US Foreign Military Sales (FMS) agreement, with the design prototyping and testing of the various modifications primarily the job of Boeing Integrated Defense Systems in St Louis, the Hornet's original designer and manufacturer. Most of the production work is being carried out in Australia.

The Hornet is a twin-engined, supersonic, multi-role fighter developed originally for the US Navy and Marine Corps and now in service with seven nations. The RAAF ordered 75 Hornets (20 of them two-seat B-model trainers) which were delivered from 1984 to 1989.

It can carry short- and medium-range air to air missiles for air combat operations and a wide range of 'dumb' bombs, laser and satellite-guided 'smart' bombs and stand-off missiles for strike and attack operations.

The Hornet is equipped with a multi-mode fire control radar which enables both air to air and air to ground operations and a suite of Electronic Warfare Self Protection (EWSP) systems.

The overall goal of the Hornet Upgrade is to improve its sensor detection and targeting ranges, its ability to resist electronic attack (eg the jamming of its radar and radio) and its ability to identify targets. The upgrade will also bestow greater 'connectivity', enabling Hornet pilots to exchange data with other ADF elements and coalition forces and so enhancing their situational awareness and combat effectiveness.

Phase 1, which is now complete at a cost of \$290 million, saw the Hornets equipped with upgraded radios, mission computer, Global Positioning System (GPS) navigation system, upgraded Identification Friend or Foe (IFF) and an extra data bus enabling the Aircraft to operate the AIM-120C AMRAAM medium range air to air missile and AIM-132 ASRAAM short range air to air missile.

Phase 2.1, which is also complete, saw the Hornet's original APG-65 radar replaced with the more modern APG-73 in a program worth \$473 million. Aircraft which had undergone the Phase 1 and 2.1 upgrades deployed to the Gulf in 2003 as part of the US-led coalition against Iraq.

In Phase 2.2, which has a budget of \$588 million, the Hornets are currently being fitted with a secure Link 16 Tactical Data Link (TADIL), full colour cockpit displays and digital moving map system, an upgraded Counter-Measures Dispensing System (CMDS) for decoy flares and chaff, and the US-developed Joint Helmet-Mounted Cueing System (JHMCS).

The latter is a vital feature of the ASRAAM missile – it allows the pilot merely to turn his head to select and designate a target which the missile will then pursue once it is launched, even when the Aircraft and missile are pointing in the opposite direction to begin with.

Phase 2.3, with a budget of \$331 million, focuses on the EWSP capabilities of the Hornet and will see it equipped with a new Radar Warning Receiver (RWR – the ALR-202, developed by BAE Systems Australia), a new supplementary CMDS and a new jamming system.

Under Phase 2.4 a proportion of the Hornets will be equipped with the Rafael/Northrop Grumman Litening laser and infra red targeting pod to provide a day and night precision targeting system. This purchase is valued at \$141 million with deliveries scheduled for 2007.

Phase 2 will also see the acquisition of a new, \$91 million flight simulator reflecting the configuration, performance and functionality changes that have been implemented on the Hornet fleet.

Two prototypes for the Phase 2.2 modification program were completed in the USA in October 2005. The rest of the fleet is being upgraded in Australia, with the first two locally-modified Aircraft completed in April and May 2006. This phase should be complete by the end of 2007.

Contracts for the separate EWSP elements being upgraded under Phase 2.3 will be let over the next 12-18 months with full operational capability scheduled for December 2009.

Phase 3 will see a proportion of the Hornet fleet (exact numbers haven't been determined as yet) undergo a structural refurbishment involving replacement of the centre fuselage ('centre barrel') to ensure the fleet as a whole remains operationally effective until its eventual replacement by the F-35 Joint Strike Fighter.

Phase 3.1 began in January 2004 and should be complete by 2009, at a cost of \$121 million: this involves minor structural modifications (where necessary) to maintain the structural integrity of the Hornet fleet through to the implementation of Phase 3.2.

Phase 3.2A is a program of ongoing structural studies. Phase 3.2B began in January 2006 and will see 15 centre barrel replacements and other discrete modifications on selected Aircraft. Modification of the prototype Aircraft was scheduled to begin in May 2006 in Canada with the production program due to begin back at Williamstown in 2007 with completion in 2011.

Phase 3.2C has been approved by the Cabinet but its full scope hasn't yet been defined – this will be considered by Cabinet during 2006. It involves an as-yet

unspecified number of extra centre barrel replacements. The total budget for Phase 3.2 is currently \$183 million.

This upgrade program should keep the Hornet operationally effective until its current planned withdrawal date of 2012-2015, But if deliveries of the F-35 Joint Strike Fighter are delayed for any reason, the Hornet will be able to serve beyond this date, though in gradually reducing numbers depending on the number of Aircraft which undergo the centre barrel replacement. Any further modifications will depend on RAAF capability requirements and return on investment considerations.

While the RAAF is following a path trodden previously by the US Navy and Canadian Forces with regard to much of the Hornet Upgrade program, some aspects, especially the EWSP upgrade in Phase 2.3, are unique to Australia. Systems integration on this phase represents the largest single area of risk on the program.

Under its FMS agreement the Navy is responsible for integrating and flight testing new equipment such as the ASRAAM missile and ALR-2002 RWR which require considerable re-programming of the Hornet's flight control software, the so-called Operational Flight Program. Much of this is done on the Navy's behalf by Boeing IDS

The AIR 5376 project office will establish a small resident project team at the US Navy's Advanced Weapons Laboratory in California to support integration of the Phase 2.3 EWSP modifications.

Australian Industry Involvement (AII)

Integration of the various Phase 2 and 3 modifications will be carried out at RAAF Base Williamtown by the Hornet Industry Coalition (HIC), comprising Boeing Australia Ltd, BAE Systems Australia and Canadian firm L-3 Communications MAS (formerly part of Bombardier) which is undertaking a similar centre barrel replacement program for Canada's Hornet fleet.

The HIC has been able to take on a substantial amount of routine Airframe maintenance work, undertaken in conjunction with the upgrade work to ensure Hornet availability requirements can be met through the upgrade program. According to Defence increasing amounts of production work will be undertaken by the HIC at Williamtown in the upgrade and structural refurbishment programs. The formation and progress to date of the HIC indicates that significant Australian industry involvement will continue for this program, the project office notes.

Lightweight Torpedo (JP 2070 - Djimindi)

Project overview and key issues

Joint Project 2070 aims to upgrade the anti-submarine capabilities of the ADF by replacing its obsolescent Mk46 lightweight torpedo with a new-generation weapon, the Eurotorp MU90/Impact.

The new lightweight torpedo capability is being acquired in a three-phase program worth \$581 million. The new weapon will arm the RAN's FFG-7 and ANZAC frigates, its Seahawk and Super Seasprite helicopters and the RAAF's AP-3C Orions.

Integrating a new weapon with five separate maritime and Airborne platforms more or less concurrently is inherently complex and risky; Defence and industry agreed an alliance approach was the most flexible, efficient and economical way to handle such a complex program. The Djimindi alliance contract was signed by Defence and the Australian industry stakeholders in 2000.

Defence selected the Eurotorp MU90/Impact in 1999, after a competitive tender. This is a versatile, highly capable weapon with greater performance than the Mk46 but requiring less logistic support. It is 3m long, weighs 300kg, has a range of greater than 10km and is designed to track and attack quiet-running submarines at depths ranging from 25m to more than 1,000m.

Phase 1 was a Project Definition Study. Phase 2, whose budget including the prime contract itself is \$317 million, will see initial acquisition of the MU90 and associated logistic support, and the integration of the weapon into the RAN's ANZAC and upgraded FFG-7 frigates and the RAAF's AP-3C Orions, followed by the Seahawk and Super Seasprite helicopters. This phase should be complete by June 2011.

Phase 3 will see acquisition of war stocks of the MU90, with deliveries starting in 2010. Its value is \$264 million and it should be complete by June 2012.

The DMO reports all eight Anzac frigates will be capable of launching MU90 torpedoes by late 2006.

Detailed design work for the FFG-7 integration program is progressing, and physical installation of the weapons and launchers and modifications to the ships' magazines and combat systems will be conducted in conjunction with the FFG Upgrade project (reported separately). Pending completion of the Design Review, HMAS Sydney had the necessary cabling installed for the MU90 launcher before being returned to the RAN in April 2006; HMAS Melbourne will be the first FFG-7 to be physically fitted with the MU90 system.

The JP2070 project office plans to conduct an Acceptance Test and Evaluation sea trial in early 2007, utilising an Anzac-class frigate. Subsequently, nine Operational Test and Evaluation firings will be conducted over the following three years. There are also 49 inert Practice Delivery Torpedo firings scheduled during this period. Air launched firings will be scheduled as Aircraft become available after modification.

The DMO has acknowledged that the riskiest element of the project remains integration of the MU90 with its planned air platforms. Delays in the Navy's Super Seasprite project, SEA 1411 (reported separately), and Seahawk helicopter upgrade, Project SEA 1405, have in turn delayed the start of detailed platform integration design for the MU90 on both Aircraft.

The JP2070 project office is currently validating cost estimates for the integration of the MU90 with the Super Seasprite and Seahawk. Detailed design and then modification of the Seasprites is not planned to occur until after acceptance of the helicopters, currently scheduled for 2007. MU90 integration is expected to start in 2008.

Similarly, detailed design and then integration into the Seahawks is expected to occur as part of the Seahawk Mid life Upgrade and Life Extension (SMULE) project, Phase 3 of project AIR 9000; a contractor for the SMULE is yet to be selected though completion is expected in 2010.

The DMO's Maritime Patrol Systems Program Office (MPSPPO) at RAAF Base Edinburgh will manage the integration of the MU90 on the RAAF's AP-3C Orions on behalf of the JP2070 project office. The initial design stage is now under way and the integration work will be undertaken through the P3 Master Accord. Currently the MU90 integration aboard the AP-3C is combined with the Block IV upgrade program and should commence in the third quarter of 2009 with completion in 2010.

Weapons acquired under Phase 2 are being manufactured in Europe. However, this phase is also establishing an in-country MU90 Torpedo Final Assembly Facility, which will be used to assemble torpedoes acquired in Phase 3 and to support and upgrade the torpedo through its life of type.

The main risks to the project's schedule or achievement of contracted capability are, first, the availability of platforms for integration, which is to some extent determined by other upgrade programs and operational tasking; and secondly the performance of the MU90 during final sea trials.

Alliance Contracting and Australian Industry Involvement (AII)

Alliance contracting is designed to create a formal partnership between Defence and industry in order to make the acquisition process cheaper, faster and more outcome-focused.

As a 'pathfinder' for the concept of Alliance Contracting by Defence, the DMO and industry, the Djimindi Alliance attracted scrutiny and criticism due to early delays in finalising the contract for Phase 2. These have been attributed to lack of experience in Australia of implementing this new contracting regime, but have not delayed significantly the introduction of this new capability, whose schedule is driven in part by platform-related integration and availability issues, many of them outside the control of the JP2070 project office.

With hindsight, however, the DMO acknowledges that the original Djimindi Alliance Agreement did not provide adequate clarity and accountability between the parties. The alliance has been substantially renegotiated to incorporate lessons learned, better allocate work share and risk and is now proving to be an appropriate mechanism for this project.

The Djimindi Alliance partners are the Commonwealth of Australia, Thales Underwater Systems Pty Ltd and EuroTorp itself, a joint venture between French firms Thales and DCN and Italian torpedo manufacturer Whitehead Alenia Sistemi Subacquei. ADI Ltd as a sub-partner also plays a key role of manufacturing MU90 components and integration activities with the FFG-7.

In addition, the ANZAC Alliance (Commonwealth of Australia, Tenix Defence and Saab Systems) and the Djimindi Alliance have formed an integrated project team to integrate the MU90 onto the Anzac-class frigate. The P3 Master Accord, comprising

the Commonwealth of Australia, Tenix Defence and Australian Aerospace – another alliance team – will undertake MU90 integration on the AP-3C Orion.

Notwithstanding early alliance structural issues contributing to delays to Phases 2 and 3, the partners have all said alliance contracting has fostered genuine cooperation and collaboration and enabled savings in time and money which would have been less likely with a more traditional business model.

Lessons learned on this project are now being applied to other Alliance Contracting projects, and also to candidate projects to determine whether Alliancing is the most appropriate approach to these projects.

Thales Underwater Systems (TUS) is already building 575 sets of MU90 homing head transducers and electronic boards in Sydney for European customers on a sole-source basis. It will also assemble the torpedoes acquired under Phase 3 of this project. This assembly facility will provide a sustainable, local through-life support and upgrade capability for the MU90.

M113 Upgrade (LAND 106)

Project overview and key issues

This project will carry out a comprehensive upgrade on 350 of the Army's M113 armoured personnel carriers.

The role of an armoured personnel carrier is to take soldiers into battle in comparative safety from landmines, shrapnel and bullets. A major advantage of a tracked vehicle such as the M113 is their ability to traverse extremely rough and difficult terrain and to advance close behind artillery fire support. An armoured personnel carrier is not a tank.

The upgraded M113s will have appliqué armour and improved mine blast protection while a new Australian designed and manufactured turret will provide for greater and more accurate firepower. The turret has had a protracted development but according to the DMO its development is now almost complete and the turret is expected to meet their requirements.

The vehicles' mobility is to be enhanced through replacement of the drive train and suspension; while its habitability will be improved through heat mitigation in the passenger compartment along with better seating and equipment stowage. Some 271 vehicles are being "stretched" to provide more room.

Extensive delays were encountered over several years in actually getting this project underway. Reasons for this include:

- changing from a multi phase project schedule that commenced with a minimum upgrade first approved in the 1993/94 Budget to a single phase comprehensive project approved in 1999
- an insufficient budget for the full scope of the required upgrade
- difficulties in reaching a final specification for the vehicles

- development problems with the turret
- the need to have the project re approved after White Paper driven acquisition priorities were enunciated in 2000

To manage development risk, which the DMO has assessed as medium, the project is planned in three stages:

- stage 1 for two vehicles to demonstrate the concept, perform gross level performance testing, and obtain user feedback, and this took place during the latter months of 2003
- stage 2 for 14 initial production vehicles to prove manufacturing processes and perform complete performance and reliability testing, due for completion in 2006 but presently delayed
- stage 3 for full production which is due for completion in 2010/11

A number of technical problems were identified during formal test and evaluation relating to engine overheating, vibration induced failures, and transmission and brake failures. Design changes have been made to correct these problems, comprising improvements to the engine cooling system, improvements to the braking system, and increased robustness of vehicle fittings and installations. Testing has resumed and the earlier problems have not recurred so far.

Design work to correct the vehicle's technical problems has delayed the project. To recover the contracted schedule and achieve the planned initial introduction into service in December 2006, Tenix has adopted a fast track strategy at their risk.

The scheduled initial in-service date is December 2006 and this covers one complete company group. The Defence White Paper sought an initial in-service date of 2005. However, during project definition it became clear that this was not achievable and an initial in-service date of 2006 was agreed by Government when the project was approved. Planned life of type for the upgraded vehicles is 2020.

Reliability Qualification Testing, the last of the formal tests, has recently identified a significant problem of brake failure. Tenix is investigating causes and potential modifications to correct this. However, the brake failure has further delayed the project so that the initial introduction into service is now expected in July 2007.

Current budget approval is for \$585m. The original budget for the revised project in the Defence White Paper was \$500m in 2000/01 dollars, while the budget approved by Government at the June 2002 project approval was approximately \$552 million in June 2002 dollars. According to the DMO there has been no real cost increase with the only change being for inflation and exchange rate variations.

Risks facing the project include the possibility that eventual completion of the Reliability Qualification Test may identify further technical problems which require further design work to correct, leading to further project delay.

There has also been some delay in the provision of Integrated Logistics Support (ILS) data, due to contractor resource difficulties and the need to finalise the designs from which the ILS data is derived. There is some risk that continued delays in provision

of ILS data might delay the establishment of a support infrastructure in time for the initial introduction into service by the planned date of December 2006

Australian Industry Involvement (AII)

According to the DMO AII will represent 47.93% of contract value and comprise vehicle design and testing, turret design and manufacture, external fuel tank design and manufacture, and vehicle assembly. Up to 80 upgraded M113s will be produced each year from the government owned Tenix operated facility at Bandiana near Albury-Wodonga.

New Air Combat Capability (AIR 6000)

Project overview and key issues

The New Air Combat Capability to be acquired under Project AIR 6000 will be Australia's most expensive defence procurement to date, with an anticipated budget of \$12-15 billion according to the 2004 Defence Capability Plan.

Subject to formal second-pass project approval by the federal cabinet in 2008, AIR 6000 Phase 2 will see the acquisition of up to 100 F-35 Joint Strike Fighters (JSF) which will replace the RAAF's F-111 strike Aircraft and F/A-18 Hornet fighters.

However, preparations to begin series production of the F-35 commence at the end of 2006 when the nine nations which are partners in the JSF program plan to sign the Production, Sustainment and Follow-On Development (PFSD) Memorandum of Understanding (MoU). Australia is expected to be a signatory to this MoU and it is increasingly improbable that the RAAF will acquire anything except the F-35 under Project AIR 6000.

The Defence 2000 White Paper states that AIR combat is the ADF's single most important capability as it is critical to all types of military operation that would be undertaken by the ADF. The government announced in June 2002 that Australia was joining the System Development and Demonstration (SDD) phase of the JSF program and would no longer evaluate other options for the RAAF's New AIR Combat Capability, such as the Eurofighter Typhoon, Dassault Rafale and Boeing F-15E and F/A-18E/F Super Hornet.

The JSF is a stealthy, single-seat, single engine, multi-role fighter being developed simultaneously in Conventional Take-Off and Landing (CTOL), carrier-borne (CV) and Short Take Off Vertical Landing (STOVL) variants by Lockheed Martin in the USA.

Each variant has common avionics, sensors and engines to reduce development and maintenance costs associated with producing and then maintaining three different Aircraft types. Differences in Airframe structure and configuration have been kept to a minimum (allowing for each variant's markedly different roles) for the same reason, though this has complicated the design and development process.

The F-35's avionics enable the fusion of target, threat and friendly force data generated by onboard and off-board sensors to provide pilots with unprecedented

levels of individual and shared situational awareness. This, with the Aircraft's stealth, holds out the prospect of very high levels of combat effectiveness and survivability in a high-threat environment.

The F-35, in combination with new long-range strike and anti-ship missiles, and the RAAF's new Wedgetail AEW&C Aircraft, aerial refuelling tankers and enhanced command and control system, is intended to maintain Australia's regional air combat superiority throughout its 30-year life of type. It will be used for both air defence and strike operations.

The ASPI policy report "A Big Deal", published in February 2004, points out however that the F-35's ability to meet the government's air combat requirements depends on the complex interrelationship between key factors such as the threat environment, JSF weapon system characteristics and enabling ADF combat capabilities such as air-to-air refuelling tankers and Airborne early warning and control (AEW&C) Aircraft.

The as-yet unapproved Phase 2C of AIR 6000 could see the acquisition of Uninhabited Combat Air Vehicles (UCAV) instead of a manned fighter; this phase falls outside the current ten-year horizon of even the updated Defence Capability Plan which is due for release around mid-2006.

Criticism of the decision to acquire the F-35 hinges on the fact that the production Aircraft has yet to make its maiden flight, the flight test and integration program for the highly complex and integrated avionics and sensor suite has yet to begin, the performance of the Aircraft (including its essential stealth capability) has not been verified, and the price the RAAF will pay for the F-35 is still uncertain.

The current SDD phase will see development and flight testing of 14 F-35s in all three variants (with another seven Airframes intended solely for structural testing) followed by Low Rate Initial Production (LRIP) of approximately 500 Aircraft and then Full Rate Production (FRP) of as many as 4,500 more.

The JSF program was delayed when calculations showed the STOVL F-35B variant, which is being developed for the US Marines, UK and Italy was too heavy to carry required amounts of unexpended ordnance when hovering for a vertical landing after a sortie. The resulting weight loss program delayed the overall JSF project by over a year, but benefited all three variants.

More recently, widespread fears that the US Air Force would reduce or cancel entirely its planned order for the F-35A CTOL variant, which Australia plans to acquire, were allayed by US Department of Defense's 2005 Quadrennial Defense Review which left the JSF program untouched.

The Critical Design Reviews (CDR) for the CTOL and STOVL variants were completed successfully in early-2006. On 31 March 2006 the Pentagon's Defense Acquisition Board authorised funding to order long-lead items for the first LRIP batch.

First flight of the first F-35A test article (manufactured as part of the SDD program) will take place in the fourth quarter of 2006. LRIP begins in 2007, FRP in 2015. The

first RAAF Aircraft is currently planned for delivery in 2012 as part of the 4th LRIP batch.

The F-35's avionics and sensor suite is being developed gradually in successive 'Blocks', with Block 3 representing the full intended combat capability. However, operational testing of Block 3 isn't due to finish until late-2013.

The RAAF is seeking the full Block 3 avionics capability before declaring the Aircraft operational. The likelihood is, therefore, that the RAAF's first F-35 squadron will be formed and undertake its initial training in the USA using the Block 2 avionics configuration.

The RAAF expects Initial Operational Capability (IOC) for this first squadron back in Australia in 2014. If development of Block 3 avionics is delayed, the RAAF fall-back option is to declare IOC with Block 2 avionics which the NACC project office states bestows a capability that is still superior in almost all respects to the F-111 and upgraded Hornet in both air to air and air to ground modes. The US Marines currently plan to declare IOC with Block 2 Avionics in 2012.

Notwithstanding recent progress, Project AIR 6000 still faces several major risks. Delivery schedules could be affected by delays in the flight test program - in particular, the avionics flight test and integration programs represent a very high risk. This is being mitigated by the use of a converted Boeing 737 Airliner equipped with a full suite of F-35 avionics, sensors and processors for Airborne test and integration. This will start flying in August 2006, while some components of the F-35's avionics have been flying for over a year on other test beds.

The JSF will lack stand-off land attack and anti-ship missile capabilities at IoC. The Lockheed martin AGM-158 JASSM stand-off missile, which the RAAF has ordered for its upgraded Hornets, won't be integrated with the F-35 until Block 4 avionics are available in 2015. And Australia, Norway and Lockheed Martin are studying whether the Norwegian NSM anti-ship missile (which is still under development) can be carried internally and externally on the JSF. Initial planning is to have the weapon included in the Block 4 upgrade if the missile program is sufficiently mature.

The US Government's General Accounting Office (GAO) has called for further testing before the start of F-35 production, but the US DoD has resisted further delay, stating: "The JSF acquisition strategy provides the most cost effective balance of technical risk, financial resources and the US Services' operational needs."

Regardless of the cause, any significant delay to the JSF program would impact on the RAAF. Its F-111s are due to retire from around 2010, and the first of its Hornets in 2012-15. A significant delay to the JSF could require the RAAF to examine a minor life extension to the F/A-18 or look at alternate platforms, noting that original AIR 6000 contenders would be mature at that time.

Although the JSF project is driven in part by the need to contain costs a further increase in the price of the F-35 could see the Government re-examine options given that a decision to acquire will not be made until 2008. The current estimated Unit Recurrent Flyaway Cost of US\$45 million (at 2002 price levels) could rise before

deliveries of LRIP Aircraft begin in about 2008, though Lockheed Martin says it is trying to bring this down.

In May 2005 the Australian Government approved Defence entering negotiations to join the next phase of the Program which covers Production, Sustainment and Follow-on Development (PSFD). The fourth round (of five) of negotiations involving all JSF partner nations planning to sign the PSFD MoU was held in March 2006 with the final round scheduled for mid-2006.

The NACC project office reports good progress, though some issues remained unresolved by April 2006, including technology data transfer, in-service sustainment arrangements and industry participation. The Government reportedly remains confident these will be resolved in time to allow signature of the PSFD MoU in December 2006.

Signing the MoU doesn't commit Australia to buy the JSF, but it's unlikely that Australia would sign unless the Government were convinced that the JSF will mature to satisfy Australia's future air combat requirements.

In parallel with the MoU negotiations, in February 2006 Defence made it clear to the US Senate Armed Services Committee that assured access to the technology and data necessary to operate and support the JSF was a prerequisite to Australia signing the PSFD MoU.

Entry into the PSFD MoU would commit Australia to a pro-rata contribution for shared production tooling costs and management fees. The exact amount is subject to final negotiation. But as a Partner in the PSFD phase Australia will have increased representation in the JSF Program Office, important in ensuring that Australian PSFD requirements will continue to be met as the program develops.

Importantly, Australia will be involved in defining the scope of the first upgrades to the Aircraft after the current development phase is complete. Upgrades, mainly to the avionics and software, will be made every two years to enhance performance, improve affordability and meet future threats. "By being a small part of an expected fleet of 3,000+ Aircraft, we get 100% of the benefit of developing these future upgrades but pay only about 3% of the cost," according to the NACC project office.

Australian Industry Involvement (AII)

An important reason for joining the SDD phase of the JSF program was to provide opportunities for Australian aerospace and defence companies to participate in the largest military Aircraft project ever undertaken. The Australian government invested US\$150 million to become a Tier 3 participant in the program.

To date, nineteen Australian companies have won nearly 40 JSF contracts. These are worth some US\$70 million in the SDD phase with a further US\$110 million promised in the subsequent LRIP phase, which has yet to get under way. Extrapolations from contracts awarded so far on the SDD phase suggest Australian companies can expect over \$490 million worth of work on the LRIP and FRP phases.

Contracts won on the 21-Airframe SDD phase generally position the contractor to carry out the same work on the 500-Aircraft LRIP phase and subsequently the 4,500-

Aircraft FRP phase. But fresh opportunities for Australian companies are likely to emerge when Lockheed Martin and its principal partners and suppliers seek second sources for F-35 components and sub-assemblies as production ramps up.

The NACC Integrated Project Team (comprising Defence and the Department of Industry) is working with Lockheed Martin and its industry partners to develop an Industry Participation Plan that identifies good long-term outcomes for Australian industry over the life of the Program. While new opportunities have been identified they are still being negotiated and remain commercially sensitive.

The type of work won by Australian industry so far includes fabricating machined parts, making wing components, design work, software development and technical assistance with the development of simulation and training packages. Pure design work won during SDD won't multiply significantly into production contracts but may contribute to sustaining engineering during the LRIP, FRP and sustainment phases.

To support the global JSF fleet in service Lockheed Martin is establishing a JSF Autonomic Logistics Global Sustainment (ALGS) system. This could include Regional Support Centres (RSC) in strategic spots around the world. Self-reliant support of the F-35 in Australia is a fundamental requirement for the RAAF, so BAE Systems Australia is heading an Australian JSF Industry Advisory Coalition (JIAC) seeking to establish one of these RSCs in Australia to support visiting US and regional JSF Aircraft.

However, logistics support for the JSF is a complex issue as new technologies in the JSF, including stealth, and expected improvements in the reliability of components and systems mean the JSF's support demands may be quite different from those of legacy Aircraft.

The JIAC and the NACC IPT are undertaking a study to specify the in-country support capabilities needed to satisfy Australia's strategic requirements. The results of this analysis will inform a JIAC study to determine whether Australia can build a business case for a competitive RSC.

Replacement Tank Capability (LAND 907)

Project overview and key issues

Chief of Army, Lieutenant General Peter Leahy is adamant that "tanks save lives", and he was able to mount a case for new tanks so convincing that the government agreed buy a fleet of 59 refurbished M1A1 AIM Abrams tanks to replace the Army's mid 1970's vintage Leopards. This despite the fact that no such procurement was envisaged in the 2000 Defence White Paper or subsequent Defence Capability Plan.

A tank should not be confused with an infantry mobility vehicle such as the Bushranger, or an armoured personnel carrier such as the M113. Tanks are by far the toughest of the armoured vehicle family, both in terms of the protection offered by their massive armour plates and the lethality afforded by their main armament; typically a 120mm high velocity smoothbore gun. Abrams tanks in particular are well protected and hit hard.

Such a vehicle is a vital component of the Army's doctrine of combined arms teams, which are intended to increase the land force's overall combat effectiveness while enhancing the soldiers' safety by playing to the strengths of each respective arm. Tanks, for example, can protect infantry from machine guns while infantry can guard tanks from ambush by enemy soldiers armed with hand held anti-armour weapons, particularly if fighting in urban terrain.

Australia is procuring its Abrams tanks via a Foreign Military Sales agreement with the US. All Australian Abrams will be completely refurbished in the US to as new zero kilometre, zero hour condition. The Abrams' survivability is enhanced through its nuclear, biological and chemical protection system, crew compartmentalisation from munitions and armoured blow-off panels, which allow stowed munitions to vent to the atmosphere if detonated.

Another attraction for the Australian Army to the Abrams was its digital communications suite, which will assist in rolling out such technology across the land force and aid the ADF's move towards network centric capability. It is understood that the Signal Corps were as excited as the Armoured Corps with the new purchase.

The project's current budget is \$547m in January 2006 dollars, while the original figure was \$528m in December 2004. The DMO advises that the variation is only due to inflation and currency fluctuations.

Over the past 12 months the first 23 of 59 M1A1 AIM Abrams tanks and the first three of seven Hercules armoured recovery vehicles have been received off the US production line, and the first five of eight fuel trucks have been received from the refurbishment process.

Training will commence in the US for Australian Army instructors will be completed by July 2006, and gunnery and driver simulators are installed locally in August and September. The first five of 14 heavy tank transporters are to be delivered in August this year, while the first 18 tanks and five M88A2 Hercules recovery vehicles are scheduled arrive in Australia this coming September.

The main challenge for the project is maintaining the strict schedule to achieve the initial operating capability by July 2007, which is ahead of originally scheduled time of December 2007 initially agreed to. There is risk that some the facilities, will not be completed as early as needed to meet the aggressive schedule of the remainder of the project. This risk is unlikely to effect the mandated in service date of December 2007.

The main benefits to flow from the successful implementation of this project will be a modern and sustainable tank capability that offers enhanced levels of protection to Australian soldiers and increased military options for Government.

Australian Industry Involvement (AII)

It is expected that AII of up to 10% for the initial acquisition may be achieved, though facility costs are not yet firm. Through life support will be offered to Australian industry through an open tender.

SM-1 replacement project (SEA 1390 Ph.4)

Project overview and key issues

The decision to acquire the SM-2 missile for the Adelaide Class FFG-7 frigates followed a study into the replacement of the SM-1 missile as Phase 3 of SEA 1390 the FFG Upgrade project. On 12 July 2004 the Government gave its approval to upgrade four FFGs, with lives beyond 2006, to fire SM-2 missiles with mid-course guidance capability, and acquisition of initial ship outfit and inventory stock missiles under Phase 4B of the upgrade project. The approved budget is \$575 million. Under Phase 4A approval was given for the US Foreign Military Sales (FMS) procurement of the Mk 698 Test Set and its installation at the ADF Guided Weapons maintenance facility at Defence Area Orchard Hills, Sydney to coincide with the introduction of SM-2.

Replacement of the SM-1 on the FFGs, is mainly due to the missile being out of production for some time—it was first developed in the 1960s—and is unsustainable. And while this may be seen as overcoming a supportability problem, in fact replacing the SM-1 missile with the much more capable SM-2 missile will endow the FFGs with a very useful air defence capability, beyond that envisaged when the FFG upgrade program was first mooted in the early 1990s.

First developed in the 1960s, SM-1 has a range of some 50 km whereas anti-ship missiles in regional inventories can now be fired from Aircraft well outside that range (in excess of 120km) and many can out-maneuvre the SM-1 missile. Additionally, the FFG is able to only engage two air targets simultaneously, whereas a number of countries in our region of interest are able to program multiple missiles, fired with impunity from outside SM-1 range, to arrive simultaneously and swamp a ship's defences.

Another drawback to the SM-1 missile is that it relies on a dedicated Fire Control radar to illuminate the target throughout its flight, which effectively alerts the Aircraft, so that it can take timely evasive action, whereas SM-2 relies on a radio frequency uplink for guidance and the target is illuminated only in the final phase. Besides these technical limitations, the SM-1 missile is no longer in production and cannot be supported for much longer.

In its operational modes SM-2 is a much more capable missile than SM-1 in terms of both range and improved warhead, and the SM-2 equipped FFG will have the potential for a true area air defence capability. The version being acquired, the Block IIIA, is the last version of SM-2, which can be fired from the FFG's rail launch system. SM-2 Block III introduced an improved Target Detecting Device for better performance against low-altitude targets while Block IIIA came with a new warhead with heavier grain explosive.

Subsequent versions (Block IIIB onwards) are designed for vertical launch systems. The forward-mounted Mk 41 vertical launch system that is being installed as part of the FFG upgrade, has been designed to accommodate ESSM not SM-2, hence the need to modify the FFG's Mk 13 rail launcher, until now used for Harpoon and SM-1.

But while the program to acquire and install SM-2 missiles is being progressed under SEA 1390, their integration and installation is being arranged, not with FFG Upgrade project prime contractor ADI Limited, but with the rail launcher OEM (BAE Systems

Land & Armaments) for its modification, and the Mk 92 OEM (Lockheed Martin Corporation), with the USN SM-2 Integration Agent (BAE Systems North America) for overall integration with the FFG's modernised Mk 92 fire control system (FCS).

It is anticipated that Ordnance Alteration (ORDALT) instructions for the modification of the Mod 12 FCS to provide full SM-2 capability will be undertaken by a US consortium comprising NAVSEA and BAE Systems and its Land & Armaments group, with kits then provided for installation locally by ADI or BAE Systems employees.

The Mk 13 Guided Missile Launching System (GMLS) or rail launcher, provides the means for storing, retrieving and launching a variety of missiles. The RAN had three systems on the DDGs and another six on the FFGs. The Mk 13 is a compact system that can be assembled dockside and installed aboard as a single entity.

Modifications to the Mk 13 GMLS are relatively minor with the provision and laying of ablative insulation at the base of the magazine and the launcher arm deck surrounds to minimise blast effects from the more powerful rocket motors. Again ORDALT instructions are being prepared for these and other tasks on the GMLS including changes to magazine components and the control console circuitry to suit the new missile.

Of the approved Phase 4B budget total of \$575 million, cumulative expenditure to June 2006 was originally expected to be \$80m, however the estimated spend during 2005-06 was only \$52m. This \$28m shortfall was due to a number of factors, the most significant delays in finalisation of contracts and the FMS arrangement.

Australian Industry Involvement (AII)

There is little local content in the SM-1 Replacement Project other than the installation of ORDALT kits in the four vessels and possibly the local provision of ablative tiles.

Underwater & Surface War Fighting Upgrade Program (USWUP) (SEA 1348 Ph 3)

Project overview and key issues

This project covers improvements to the surface warfare and mine and obstacle avoidance capabilities of the ANZAC frigates operated by the Royal Australian Navy.

SEA 1348 Phase 3 was approved in 1997, at a value of \$146 million in December 1997 dollars, and covered four separate capabilities for the ANZAC ships within its approval. These were;

- Harpoon anti-ship missile system, including the fire control system and canisters for each ship (missiles procured under JP1)
- torpedo Self Defence
- Mine and Obstacle Avoidance Sonar (MOAS)

- integration of the torpedo tubes to enable the ships to fire lightweight torpedoes

The Shipbuilder, Tenix Defence, was engaged to undertake preliminary studies into the implementation of all four capabilities. Revised cost estimates developed through negotiations between Defence and Tenix in early 2001 indicated that the project was significantly under funded. Further investigations were undertaken to find a way to deliver all four capabilities within the approved project cost, however this was not achievable.

Consequently, the integration of the torpedo tubes was removed from the scope of the project and is now being pursued through a separate project (JP 2070), and the other three capabilities were split into separate sub-phases;

- Phase 3A Harpoon
- Phase 3B Torpedo Self Defence System
- Phase 3C Mine and Obstacle Avoidance Sonar.

Harpoon was the highest priority and was approved in the 2001/02 budget at a cost of \$167 million. The approval of Harpoon left a balance of only \$30 million in December 2001 dollars to complete both other phases, a level of funding well short of that needed to complete these two elements of the project.

The current budget figures for the project are: Phase 3A: \$157m, and Phase 3C: \$92.331m in January 2006 dollars.

The ANZAC frigates currently have no mechanism to warn of mines or other obstacles in the ship's path other than the standard navigational sonar system. The Mine and Obstacle Avoidance Sonar was assessed as a priority and approved last year. The Petrel sonar system will be fitted which involves the installation of a retractable sonar array and the associated monitoring, control and support equipment.

The Torpedo Self Defence System was deferred for consideration later in the Defence Capability Plan but did not appear in the public version of the 2004-2014 DCP. The ANZAC frigates are currently fitted with the Nixie towed decoy system, designed to seduce incoming torpedoes away from the towing ship. The ships are also fitted with launchers that currently deploy airborne chaff decoys but which are capable of launching subsurface decoys. However, the apparent cancellation of Phase 3B must leave the ANZAC's more vulnerable to torpedo attack than would otherwise have been the case.

This project's acquisition strategy is based on the acquisition and integration of existing capabilities, and no unusual technical risks have been identified. The most likely cause of delay stems from the RAN's current high level of operational engagement and the availability of ships to undergo the upgrade. The first operational capability for Phase 3A was delivered on schedule in December 2004 (HMAS Warramunga) with the remaining seven ships complete by 2007. Phase 3C will deliver its first operational capability in later this year in HMAS Arunta and also be completed by 2007.

The successful implementation of this program will result in a significant and much needed enhancement to the ANZAC ships' offensive capabilities against surface targets and the vessels' ability to avoid mines and other obstacles.

Australian Industry Involvement (AII)

The ANZAC Ship Alliance is managing the Phase 3A/C upgrade. The ANZAC Ship Alliance is a virtual company formed to implement change to the ANZAC frigates. The participants in the Alliance are Tenix Defence, Saab Systems and Defence represented by the DMO's ANZAC System Program Office.

The lead ship (HMAS Warramunga) has been outfitted in WA while follow-on ships will be outfitted in accordance with the ANZAC ship repair and maintenance availability schedule and locations under competitive tender arrangements.

AII for Phase 3A is covered by the ANZAC Ship Alliance's obligation to maximise competition and AII in all work undertaken by the alliance. AII for Phase 3C will amount to 70% of contract value.

SECTION 9 –THE FINANCIAL STATEMENTS EXPLAINED

Section 9.1: Defence Resourcing

Total Defence Resourcing has been clearly summarised in Table 2.1 in the PBS. While much of the Defence budget can be understood without recourse to the financial statements, it is through the financial statements that the key financial aspects of the budget are consolidated, including the impact on future years. Therefore it is useful to understand the relationship between Total Defence Resourcing as presented in the PBS and the budgeted financial statements.

Table 2.1 [PBS p.20] shows that Defence receives funding in a number of different ways, and pays money back to government in several ways as well. The government purchases some 318 Outputs from Defence, which are grouped into six Outcomes. A seventh Outcome/Output covers administered appropriations.

The price government pays for these Outputs is the Output Appropriation. Additional funding for the Outputs comes from Defence's own source revenues. Defence also receives funds to invest in capital assets. This comes from the government's equity injection and from net capital receipts, being the proceeds of sales of existing assets after capital withdrawal by government.

PBS Table 2.1: Total Defence Resourcing

Serial	2005-06 Estimated Actual \$'000	2006-07 Budget Estimate \$'000	2007-08 Forward Estimate \$'000	2008-09 Forward Estimate \$'000	2009-10 Forward Estimate \$'000
	Departmental				
1	16,133,541 Revenue from Government for Price of Outcomes	17,063,404	17,424,698	17,498,316	18,089,342
2	972,080 Equity Injection	1,937,879	1,588,444	1,880,401	2,379,642
3	17,105,621 Total Revenue from Government (1+2)	19,001,283	19,013,142	19,378,717	20,468,984
4	621,752 Own-Source Revenue ⁽²⁾	594,645	600,432	610,408	637,832
5	24,863 Net Capital Receipts	23,192	22,508	21,810	4,599
6	646,615 Sub-Total (4+5)	617,837	622,940	632,218	642,431
7	17,752,236 Total Departmental Funding (3+6)	19,619,120	19,636,082	20,010,935	21,111,415
	Administered				
8	2,618,000 Administered appropriation	2,632,000	2,713,000	2,801,000	2,893,000
9	20,370,236 Total Defence Resourcing (7+8)	22,251,120	22,349,082	22,811,935	24,004,451

The key sources of funding for Defence are explained in more detail as follows:

Revenue from Government for Price of Outputs (Output Appropriation): In 2006-07 the Government will appropriate \$17,063 million towards the price of the Defence Outputs. This is the 'Price to Government of Defence's Outcomes'. In 2005-06 the projected appropriation for outputs is \$16,133 million. It appears as Appropriations from Government in Revenue in the Budgeted Departmental Income Statement PBS Table 7.1.

Equity Injection: In 2006-07 the government will appropriate \$1,938 million to supplement investment in specialist military equipment (\$4,523 million) and land and buildings, vehicles and other equipment (\$585 million). The equity injection is shown in the Budgeted Departmental Statement of Cash Flows (PBS Table 7.3) and also appears in the Capital Budget Statement (PBS Table 7.5).

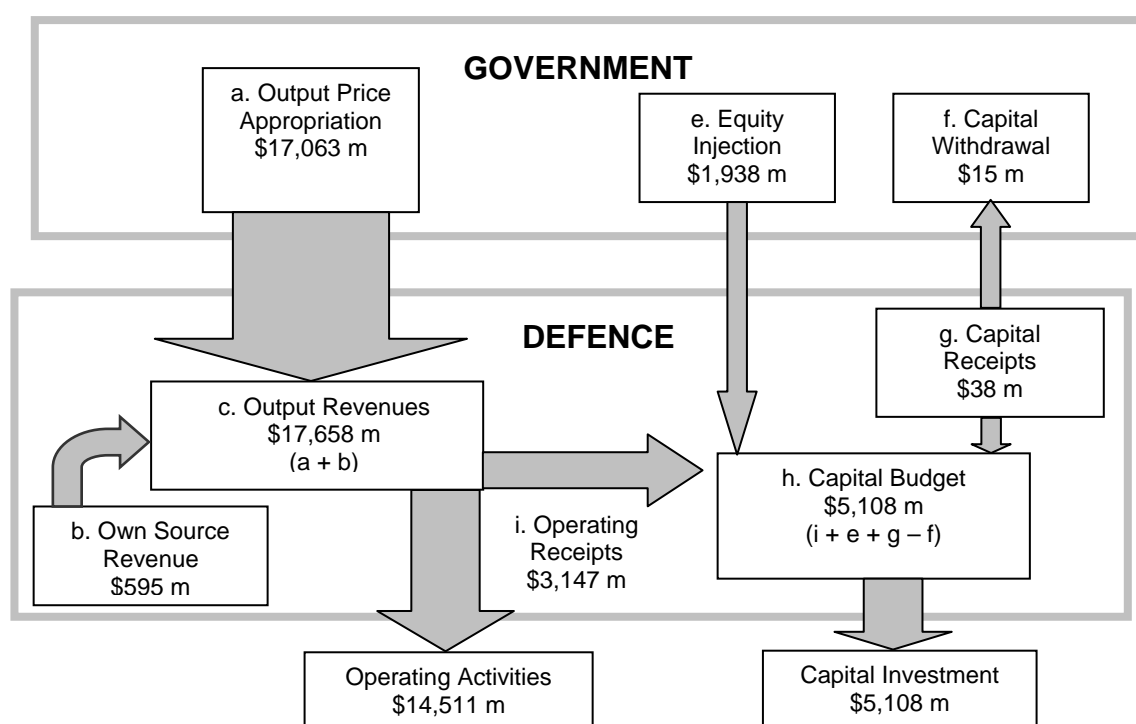
Own Source Revenue: In 2006-07 Defence has budgeted to raise \$595 million of ‘own source’ revenue which is made up of sale of goods and services (\$530 million) and other revenue (\$65 million). In 2004–05 a total of \$492 million was raised including \$114 million in housing and other property rentals, \$38 million in rations and quarters charged to personnel, \$54 million from fuel sales to foreign governments and \$58 million from sales of other goods and services. With the cessation of the agency incentive banking scheme in 2003 Defence is no longer able to earn interest on cash balances and this is reflected in the 2006-07 budget. Own source revenue is included as Revenue in the Budgeted Departmental Income Statement PBS Table 7.1.

Net Capital Receipts: In 2006–07 Defence have budgeted to receive \$38 million in capital receipts from the sale of assets (mainly buildings and property). The capital receipts appear as cash receipts from investing activities in the Budgeted Departmental Statement of Cash Flows PBS Table 7.3 and within the Departmental Capital Budget Statement PBS Table 7.5.

Defence will only retain about \$23 million of these sales, after the government takes \$15 million through a capital withdrawal in 2006-07. This is the mechanism through which the government as owner takes back some of its equity in Defence and is used when assets like property are sold.

Figure 9.1.1 shows the flows of these resources between the government and Defence. This illustrates the linkage between output revenues (exclusive of assets now recognised) and the capital budget via operating receipts. These operating receipts include the left over cash from output revenue (price) due to non-cash expenses like depreciation and inventory consumption. (Figures not exact due to correction for GST, banking and timing shift.)

Figure 9.1.1 Defence Funding Schematic



Accrual Accounting

Accrual accounting is *activity* driven. It accounts for all resources when they are consumed and not necessarily when the corresponding cash is transacted. This can result in non-cash expenses such as depreciation and inventory which represent the consumption of resources previously paid for. Accrual accounting also includes expenses associated with unpaid obligations like creditors and employee entitlements.

The first step to understanding accrual accounting is to understand the language used. Some of the terms are obvious but others are not.

At the most basic level are the **resources** that are used in Defence. This includes **cash**, **inventory** (eg bullets, soap and uniforms), **capital assets** (eg tanks, buildings, and even software), the labour of staff and goods and services from the market place.

The earning of income is called **revenue**. Defence earns revenues through sales and the output appropriations from the Government. The consumption of a resource is called an **expense**.

Some resources are paid for and used within the accounting period (eg salaries); other non-cash expenses arise through the use of resources previously paid for called **assets** such as **inventory**, which is consumed. Another non-cash expense arises when **capital assets** are consumed through their **depreciation** in value over time. This yields an annual expense roughly equal to the value of the capital asset divided by its economic life. The difference between **revenues** and **expenses** is called the **net operating result**. A positive operating result is a profit, and a negative result is a loss.

The subtraction of expenses from revenues is done in the **Budgeted Departmental Income Statement** [PBS Table 7.1], more commonly called the Operating Statement or Profit and Loss Statement. Resources that are presently owned are called **assets**. These can be either financial (eg cash, investment or monies owed) or non-financial (eg capital assets, inventory). Obligations to pay for resources in the future are called **liabilities** (eg accumulated employee entitlements and bills to be paid). This includes liabilities associated with non-cash related expenses such as increases in employee entitlements (long service leave) which have arisen through the use of resources which have not been paid. The difference between **assets** and **liabilities** is the **net assets** or **equity**.

The subtraction of liabilities from assets to calculate equity (net assets) occurs on the **Budgeted Departmental Balance Sheet** [PBS Table 7.2]. The balance sheet captures resources not yet used (**assets**) and resources used but not yet paid for (**liabilities**).

Even in the accrual framework cash is important. The **Budgeted Departmental Statement of Cash Flows** [PBS Table 7.3] often called the cash flow statement tracks the flow of cash through Defence. It reports on the cash received and used for the **operating activities** that deliver the Defence outputs. It also reports on the cash used for **investing activities** like the purchase of tanks, buildings and other capital assets, as well as the cash received from the sale of assets. Finally it reports on the **financing activities** that include cash received from, and paid to, Government. This includes the equity injection and capital withdrawal. These peculiar artefacts of the framework are explained on the next page.

The Defence financial statements also include a Capital Budget [PBS Table 7.5] that reports the **expenditure** of cash on capital assets. It also reports on how the capital assets are funded and reports on the cash **receipts** gained from the sales of capital assets, and the various payments to and from Government associated with capital investment. As with the cash flow statement, all the entries refer to cash transactions. The Capital Budget provides insight into the investing and financing aspects of the Statement of Cash Flows.

9.2 Budgeted Financial Statements Explained [PBS Chapter 7]

The financial statements provide some insight into the planned financial performance of Defence for the 2006-07 year as well as the impact on future years.

While public sector agencies such as Defence do not have a profit imperative, it is still useful to discuss the financial statements as if Defence was a profit-making company. Defence, as an organisation, must manage such issues as ‘what is the net cost to the Government for the delivery of services (outputs)’ and ‘what is an appropriate level of capital to hold in the business to sustain operations’, just as a profit-making company must.

The financial statements in Chapter 7 of the 2006–07 PBS detail an estimate of the current year result, the planned financial performance for the next 12 months and ‘forward estimates’ for the next 3 years. Revised estimates of budgeted performance are published later in the year in the PAES, and the actual financial performance is reported in October in the Annual Report.

The Defence PBS essentially provides four sets of budgeted financial statements:

- The ‘departmental’ statements [PBS Table 7.1 to 7.6] for the Department of Defence. These describe the resources that the department controls to deliver outputs. In the ordinary sense, these are the revenue and costs associated with running Defence;
- The ‘administered’ statements, referred to as schedules, [PBS Table 7.7 to 7.9] for the funds administered on behalf of government primarily used for military superannuation schemes;
- Financial statements for the Defence Materiel Organisation (DMO) [pp. 290-298]. The DMO became a prescribed agency on 1 July 2005 and as such have prepared separate budgeted statements which are not consolidated into the Defence financial statements. The DMO will continue to provide services to Defence through a range of Materiel Acquisition Agreements ultimately managed by a Memorandum of Arrangements. The financial statements for the DMO are not analysed in this brief.
- Financial statements for the Defence Housing Authority [PBS pp.301–308]. The Defence Housing Authority which forms part of the Defence Portfolio is not consolidated into the Defence financial statements and its budget forecasts are not analysed in this brief. A summary of the Authority’s background and performance can however be referred to in Section 7 of this publication.

We explain the departmental statements below. The departmental financial statements include:

- Budgeted Departmental Income Statement (also known as the Operating Statement or Profit and Loss Statement – records revenues and expenses) [PBS Table 7.1];
- Budgeted Departmental Balance Sheet (records assets, liabilities and equity and shows the financial position of the agency) [PBS Table 7.2];
- Budgeted Departmental Statement of Cash Flows [PBS Table 7.3];

- Departmental Statement of Changes in Equity – Summary of Movement (this is a new statement designed to show the movement of the Commonwealths' interest in Defence. The statement has been prepared for the 2006-07 financial year to show the net operating result, movements of capital return and additional capital injections from the Commonwealth) [PBS Table 7.4]; and
- Capital Budget Statement (shows the budgeted spend on capital and the source of funding) [PBS Table 7.5].

In addition to the key statements and notes, a *summary of movement of non-financial assets* which shows the movements in property, plant and equipment and specialist military equipment is also included. [PBS Table 7.6].

The departmental financial statements only report at the most aggregate level and refer to the total financial performance of Defence as a whole. There is no information on the individual outputs, services or the Defence groups in these statements. However, at PBS Chapter 5 Planned Outcome Performance, prices to government are given for each of the Government Outcomes and their associated Outputs, including a profile of the associated revenue and expenses for each Outcome and Output and performance targets.

An important part of the financial statements are the accompanying notes [PBS pp.230-241]. Note 1 provides explanatory notes on the accounting policies adopted in the preparation of the financial statements; however no further information is available by way of note disclosures (excluding special accounts). The Defence Annual Report provides a much more extensive set of notes that break down many of the items in the financial statements into sub-categories. If you want to understand the budgeted financial statements it helps to have a recent copy of the annual report at hand so that you can refer to the notes to the financial statements.

Revenues and expenses in the Budgeted Departmental Income Statement are calculated using the accrual basis of accounting. Appropriations to fund expenses therefore include amounts to cover both cash and non-cash expenditure items.

The Budgeted Departmental Income Statement – The Operating Statement [PBS Table 7.1]

The Statement of Financial Performance reports on the accrued revenues and expenses involved in the delivery of the Defence Outputs during the financial year. It does not include what is spent on the investment in capital assets – except for R&D, project studies, design work, specialist and professional advice and project office overheads as operating expenses. Capital assets held are reported in the Budgeted Departmental Balance Sheet PBS Table 7.2.

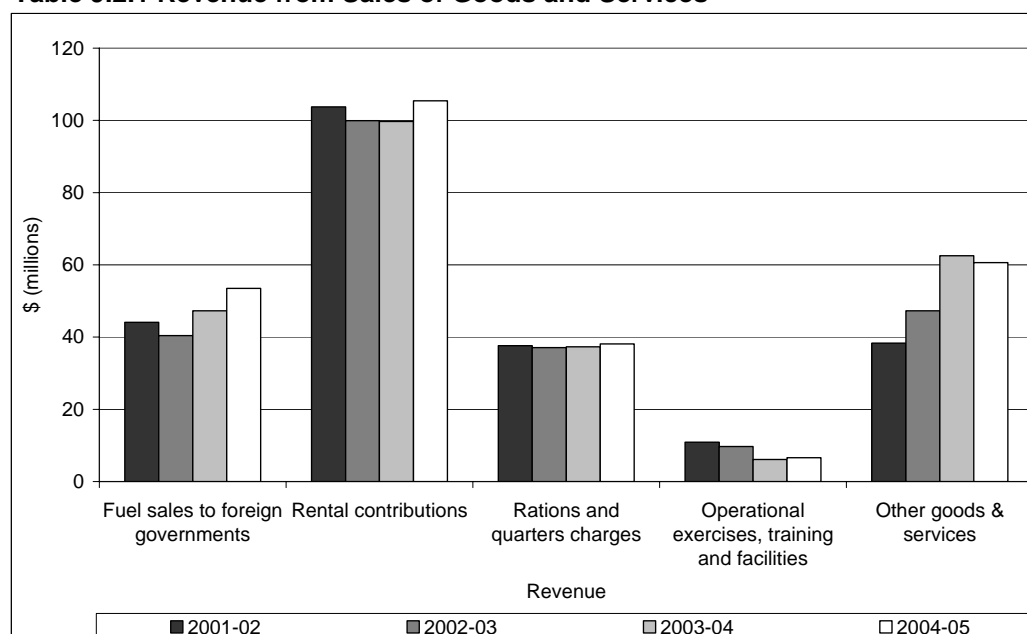
In simplest terms, the Statement of Financial Performance subtracts Defence's total expenses from its total revenues to calculate the net operating result (profit or loss) for the financial year. For the 2006-07 Budget, this is represented as:

NET OPERATING POSITION (\$0 million)	=	REVENUES \$17 860 million	–	EXPENSES \$17 860 million
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Budgeted Revenues, or income, for 2006-07 broadly comprises:

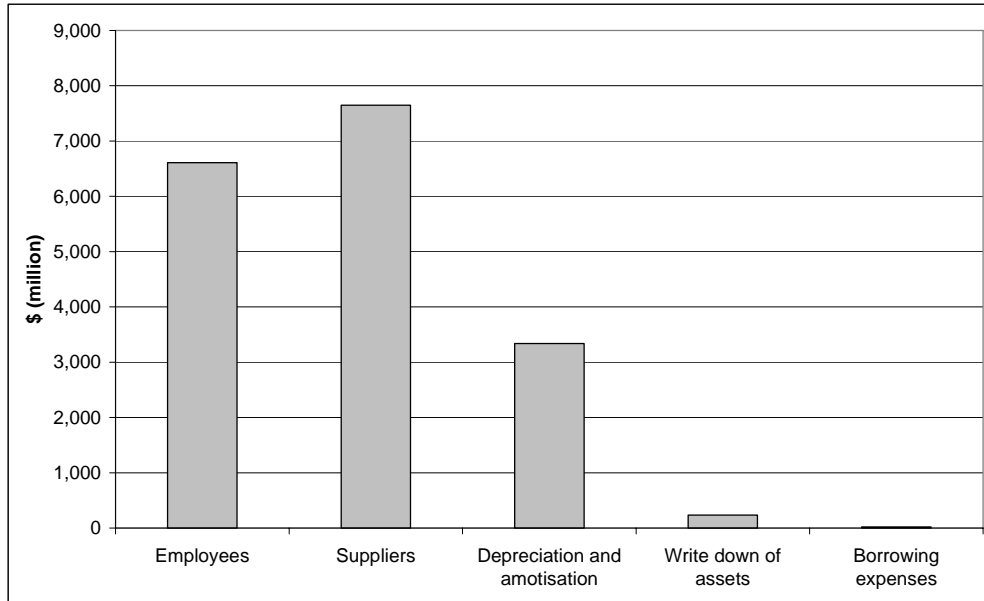
- **Appropriations from Government** (\$17,063 million) includes the Price for Outputs Appropriation and funds the operational expenses of Defence. This appropriation, together with revenue from other sources (such as sale of goods and services and other revenue), covers both cash related (eg employee expenses and suppliers) and non-cash related expenses like depreciation. Explanations for variations to budget for revenue (including appropriations) are provided at PBS pp.21-24 in Chapter 2 2006-07 Budget Measures.
- **Sales of Goods and Services** (\$530 million) includes revenue from goods and services provided to organisations other than the agreed outputs to government. A detailed breakdown is not provided however, the nature of these revenues is demonstrated using the four financial years (2001-02 to 2004-05) actual revenue in Table 9.2.1.

Table 9.2.1 Revenue from Sales of Goods and Services



- **Assets Now Recognised** is the revenue associated with corrections in accounting for assets found or recognised and not previously recorded. The Budget for 2006-07 is nil against actual results of \$1,007 million in 2004-05 and a projected result of nil for 2005-06.
- **Other Revenue** (\$66 million) includes foreign military sales refunds, excise refunds, settlement of damages and other miscellaneous items.
- **Budgeted Expenses** for 2006-07 broadly comprises the five components in Table 9.2.2.

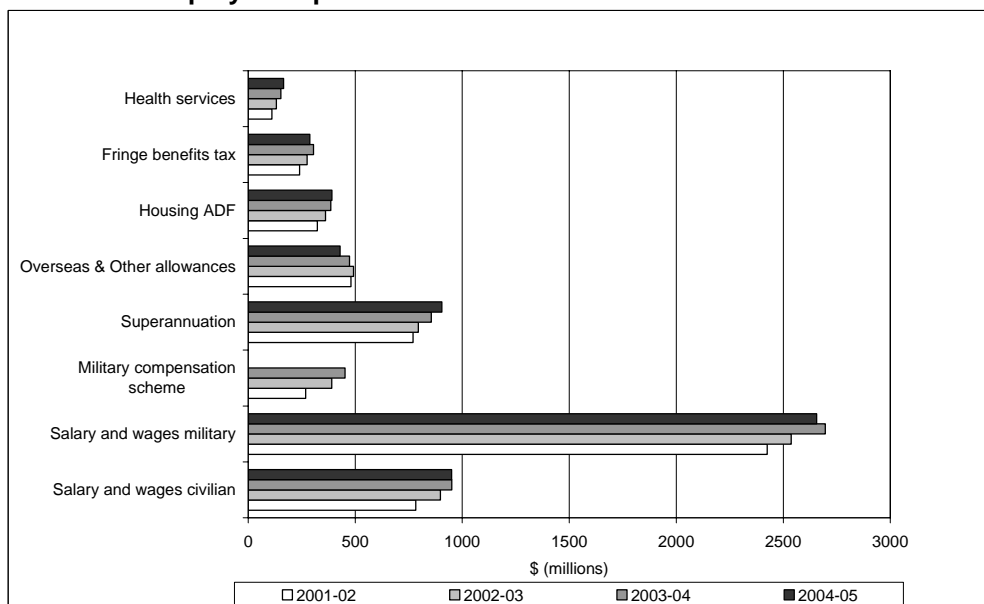
Table 9.2.2 Budgeted Expenses



The key components are:

- **Employees** represent all costs associated with the employment of military and civilian personnel. A detailed profile of the components of this expense is not provided however the nature of these costs is well demonstrated using the four financial years (2001-02 to 2004-05) actual costs in Table 9.2.3.

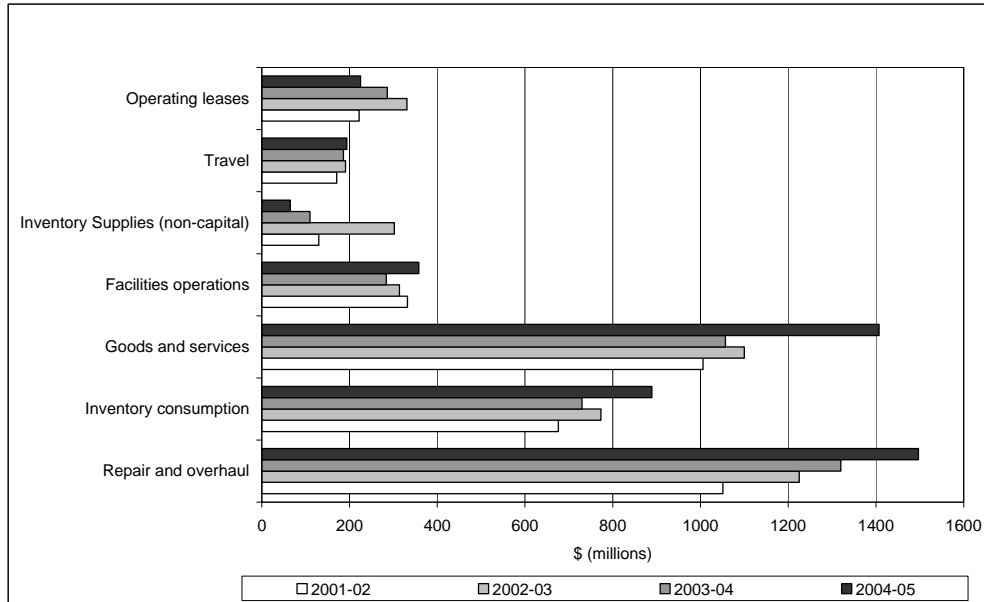
Table 9.2.3 Employee Expenses



It should be noted that as a result of DMO becoming a prescribed agency on 1 July 2005, Defence have reclassified approximately \$362 million of civilian employee expenditure to supplier expenses for the 2006-07 forecast year and approximately \$354 million in the 2005-06 estimated actuals. This represents Defence's funding of DMO's civilian workforce.

- **Suppliers** include all costs associated with the supply of goods and services to Defence for use in delivering the Outputs. The expense has increased on the projected result and is due to increased funding requirements for operations, changes to pricing parameters, and bringing forward future years funding to support current work plans. The actual expenses for the four financial years 2001-02 to 2004-05 appear in Table 9.2.4.

Table 9.2.4 Suppliers Expenses



- **Depreciation and amortisation** represents the annual cost of using up assets over time – approximates the asset value divided by remaining life.
- **Value of assets sold** represents the written down value of the assets being sold. This value is offset against revenue from the sale of assets to arrive at the gain or loss on sale.
- **Write Down of Assets** is the reduction in the value of assets which are no longer used or exist such as specialist military equipment and inventories which are obsolete.

The 2004–05 Defence Annual Report provides more detailed information on actual expenses and revenues.

Net Operating Result

The net operating result shows the net financial impact on Defence's resources of the operating activities undertaken during the year. Defence is budgeting for a break even operating result for 2006-07, which is consistent with both the previous estimate and the 2005-06 estimated actual position. It should be noted that \$1,380 million in new budget measures is applicable to the 2006-07 budget estimate figures (PBS pp.21).

The Equity Interests part of the Budgeted Departmental Income Statement summarises the net change to Accumulated Surpluses at 30 June. This also appears on the Budgeted Departmental Balance Sheets as a component of equity, and again in the Departmental Statement of Changes in Equity [PBS 7.4]. The accumulated surpluses amount is the sum of the past operating results that have occurred since the start of

accrual reporting by Defence reduced by capital withdrawals of asset sales proceeds and dividends by way of the now discontinued Capital Use Charge (CUC) prior to July 2003.

The balance of accumulated surpluses is calculated by adding the net operating result for the financial year to the 'accumulated surplus' from the beginning of the financial year (Accumulated Surpluses at 1 July), adjusted for any changes in accounting policy to give the **Total Available for Appropriation**.

The Budgeted Departmental Income Statement PBS Table 7.1 is demonstrated on the following page.

The Budgeted Departmental Income Statement – The Operating Statement ⁽¹⁾
[PBS Table 7.1]

[PBS Table 7.1]

		Revenues		Expenses			
		Income earned through the delivery of Defence's Outputs and from		Resources consumed in the process of delivering the Defence Outputs to government. This is largely employee expenses, suppliers (including inventory use) and depreciation			
The price of outputs							
2005-06 Estimated Actual \$'000		2006-07 Previous Estimate \$'000	2006-07 Budget Estimate \$'000	Variation %	2007-08 Forward Estimate \$'000	2008-09 Forward Estimate \$'000	2009-10 Forward Estimate \$'000
INCOME							
Revenue							
16,133,541	Revenue from Government	16,362,110	17,063,404	4.3	17,424,698	17,498,316	18,089,342
535,361	Goods and services	258,130	530,482	105.5	536,974	547,251	559,406
-	Interest						
87,891	Other Revenue	228,076	65,663	-71.2	64,958	64,657	79,926
16,756,793	Total Revenue	16,848,316	17,659,549	4.8	18,026,630	18,110,224	18,728,674
Gains							
	Net gain on foreign exchange	-	-	-	-	-	-
250,000	Reversals of previous asset write downs	72,500	200,000	175.9	200,000	100,000	100,000
	Net gains on sale of assets	-	-	-	-	-	-
250,000	Total Gains	72,500	200,000	175.9	200,000	100,000	100,000
17,006,793	Total Revenues	16,920,816	17,859,549	5.5	18,226,630	18,210,224	18,828,674
EXPENSES							
6,299,616	Employees	6,549,692	6,609,082	0.9	6,742,406	7,039,455	7,487,515
7,003,260	Suppliers	6,885,384	7,649,136	11.1	7,821,025	7,582,329	7,872,486
6,675	Grants	5,201	5,592	7.5	1,304	1,304	1,304
	Depreciation and amortisation						
3,145,023	Finance Costs	3,336,323	3,336,323	-	3,409,595	3,434,486	3,314,258
18,163	Write-down of and impairment of assets	32,716	20,412	-37.6	20,799	21,144	21,605
514,056	Net losses on sale of assets	107,500	235,000	118.6	230,000	130,000	130,000
-	Other	-	-	-	-	-	-
20,000		4,000	4,004	0.1	1,501	1,506	1,506
17,006,793	Total Expenses	16,920,816	17,859,549	5.5	18,226,630	18,210,224	18,828,674
-	Net Operating Result	-	-	--	-	-	-
EQUITY INTEREST							
35,743,047	Accumulated surpluses at 1 July	35,581,258	35,571,664	0.0	35,683,234	35,800,944	35,800,944
35,571,664	Total Available For Appropriation	35,692,828	35,683,234	0.0	35,800,944	35,800,944	35,800,944
	Change in accounting policy	-	--	--	--	-	-
	Capital withdrawal	-	--	--	--	-	-
	Accumulated surpluses as at 30 June	35,692,828	35,683,234	0.0	35,800,944	35,800,944	35,800,944

Note: 1. Cross reference to Table 2.6 in Chapter Two - Resourcing

Net Operating Result
The net profit or loss calculated by subtracting Expenses from Revenue

Total available for appropriation
The equity from the start of the year adjusted for the operating result made during the year

Surpluses at 1 July
Defence's total accumulated surplus at start of year

Capital Withdrawal
Cash returned to the government from the sale of assets, mainly property.

Accumulated Surplus 30 June
Accumulated results at the end of the year shown as part of equity on the Balance Sheet

The Budgeted Departmental Balance Sheet – The Balance Sheet [PBS Table 7.2]

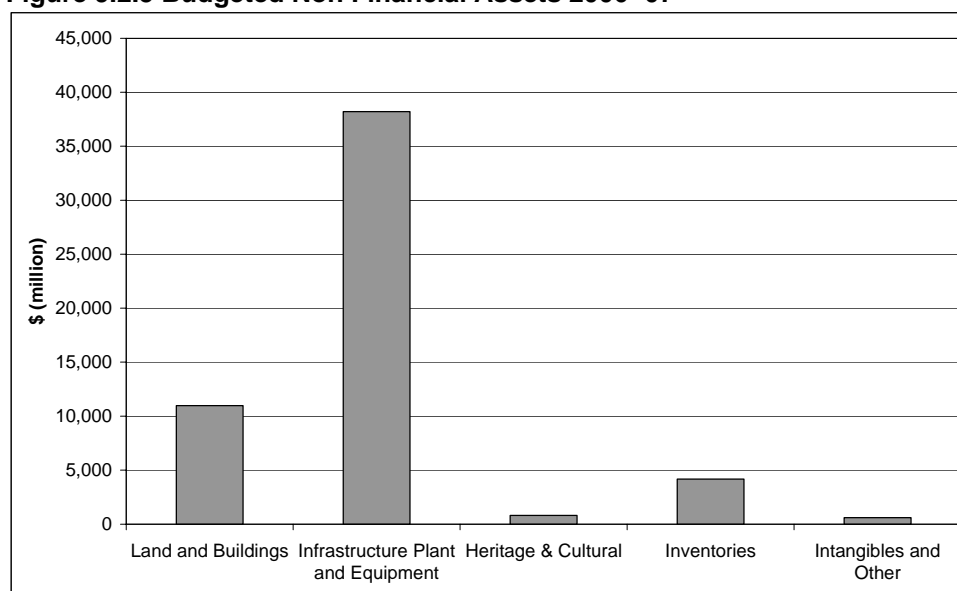
The Budgeted Departmental Balance Sheet projects a snapshot of Defence's assets, liabilities and equity (net assets) at the end of the financial year. This is calculated by subtracting the total liabilities from the total assets to arrive at net assets. For 2006-07 this is represented as:

NET ASSETS \$53 billion	=	ASSETS \$56 billion	–	LIABILITIES \$3 billion
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Budgeted assets for 2006-07 comprise:

- **Financial Assets** of \$873 million is essentially made up of cash and receivables.
 - **Cash** is estimated to be \$161 million in 2006-07 and this remains unchanged for the three forward years to 2008-09.
 - **Receivables** in 2006-07 (\$712 million) which includes cash reserves held as an appropriation receivable of \$455 million. Defence is able to use the appropriation receivable to meet employee and supplier liabilities.
 - It should be noted that receivables for the 2004-05 financial year (actual results) also included an amount for GST receivable of \$128 million.
- **Non-Financial Assets** of \$54 765 million are broken down in Table 9.2.5.

Figure 9.2.5 Budgeted Non Financial Assets 2006- 07



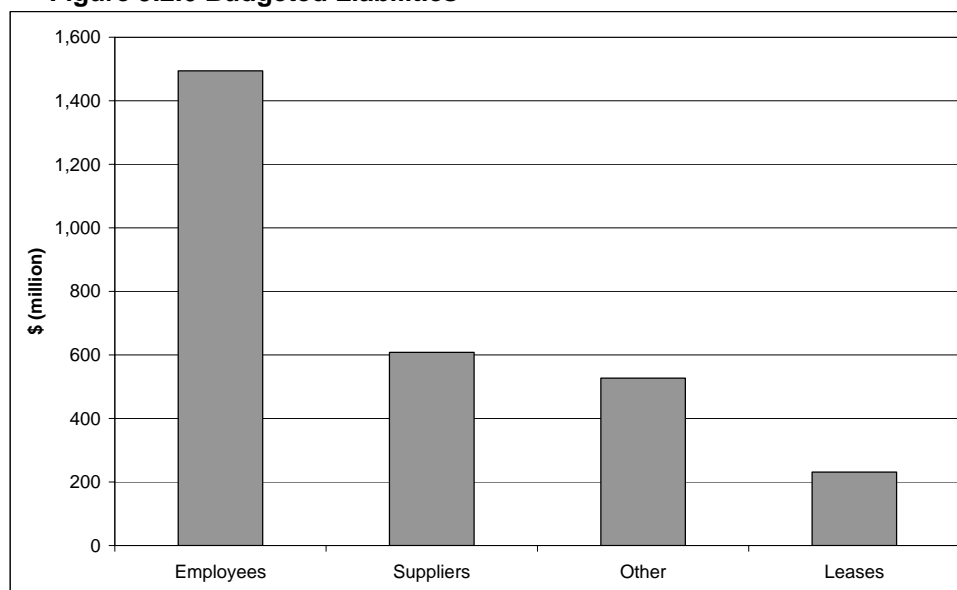
Non financial assets include:

- **Land and Buildings** of \$10 982 million, and **Infrastructure Plant and Equipment** of \$38 217 million.
- **Intangibles** (\$306 million) including software and patents, copyrights and licences.
- **Heritage & Cultural** (\$800 million) including items of national heritage or cultural significance.

Expenses incurred as a result of the use of these assets includes depreciation (\$3 336 million) and write down of assets (\$235 million) shown on the Budgeted Departmental Income Statement. As assets are sold the difference between the value of assets sold (expense) and the revenue from the sale of assets (revenue) represents the profit or loss on sales. It does not appear as though Defence has budgeted for any profit or loss on sale. The proceeds from asset sales are also reported in the Budgeted Departmental Statement of Cash Flows PBS Table 7.3.

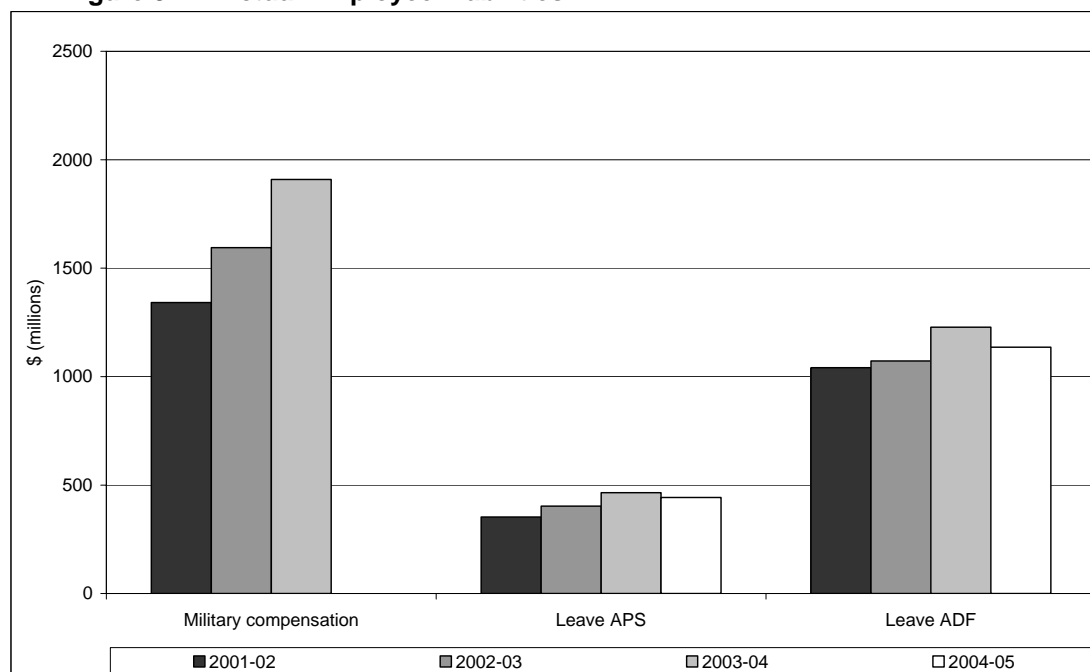
- **Inventories** totalling \$4,169 million have been transferred back to Defence from the DMO (as per PAES 2005-06) and are included in Defence's Balance Sheet.
- **Other** (\$290 million) includes prepaid expenses and prepaid capital items.
- **Budgeted liabilities** represent amounts owing to other parties and comprise three components, employee provisions, suppliers' liabilities, leases and other payables (which includes primarily a provision for Asbestos Related Disease Exposure). These are graphed in Figure 9.2.6.

Figure 9.2.6 Budgeted Liabilities



- **Employee Provisions** is \$1,494 million for 2006-07 and is the major liability for Defence. Actual employee provisions reported for the 2001-02 to 2004-05 financial years appear in Figure 9.2.7. It should be noted that the responsibility for administering military compensation was transferred to the Department of Veterans Affairs and hence no expenditure is shown for the 2004-05 financial year.

Figure 9.2.7 Actual Employee Liabilities



- **Suppliers** for 2006-07 is estimated at \$608 million. Actual creditors reported in the 2004-05 annual report included non-capital trade creditors (\$954 million) and capital trade creditors (\$231 million). Marginal changes in total suppliers and other payables are projected in the PBS from 30 June 2007 to 30 June 2009.
- **Leases** (\$229 million) being mainly a finance lease arrangement with the Defence Housing Authority for the supply of housing to ADF personnel.
- The **Net Assets** also represent the **Total Equity**. The total equity represents the Government's overall owner interest in Defence. In the Equity part of the Statement of Financial Position the total **equity** is broken down into three somewhat artificial categories:
 - **Contributed Equity** (\$6,483 million) is the accumulated result of equity injections since 1999 less capital withdrawals. Capital withdrawn relates to the Government's share of the proceeds from property sales.
 - **Reserves** (\$10,611 million) which result from the revaluation of assets. For accounting purposes, where the value of assets has been revised and increased, Defence is required to account for these increases through increasing the asset as well as a special 'revaluation reserve'; and

- **Accumulated Surpluses** is the accumulated results from previous years plus the initial value of net assets (or equity) when accrual reporting was introduced. Accumulated surpluses have also been adjusted for changes to accounting policy resulting from the adoption of Australian Equivalents to International Financial Reporting Standards.

Finally on the Budgeted Departmental Balance Sheet PBS Table 7.2 the assets and liabilities are broken down into current and non-current. Current assets and liabilities are those that those which are expected to be realised within the next twelve months, whereas non-current ones are expected to be realised beyond that time.

The Budgeted Departmental Balance Sheet is demonstrated on the following page.

Budgeted Departmental Balance Sheet ⁽¹⁾ [PBS Table 7.2]

Assets (what Defence owns)

(resources that will bring future benefit)
The financial and non-financial assets budgeted to the end of the financial year.

Liabilities (what Defence owes)

(resources that have been used but not paid for)
Payments that Defence is required to make at some time in the future.

2005-06 Estimated Actual \$'000		2006-07 Previous Estimate \$'000	2006-07 Budget Estimate \$'000	Variation %	2007-08 Forward Estimate \$'000	2008-09 Forward Estimate \$'000	2009-10 Forward Estimate \$'000
ASSETS							
Financial assets:							
161,249	Cash	161,249	161,249	-	161,249	161,249	161,249
499,094	Appropriation Receivable	438,251	455,451	3.9	405,451	350,451	290,451
256,235	Other receivables	256,235	256,235	-	256,235	256,235	256,235
916,578	Total financial assets	855,735	872,935	2.0	822,935	767,935	707,935
Non-financial assets:							
10,945,697	Land and buildings	10,906,161	10,982,127	0.7	10,856,956	11,182,520	11,264,079
36,450,883	Infrastructure, plant and equipment	29,578,070	38,216,881	29.2	39,727,201	41,312,320	43,419,964
309,774	Intangibles	306,148	306,210	0.0	302,646	299,082	295,518
800,459	Heritage and cultural	800,459	800,459	-	800,459	800,459	800,459
3,738,313	Inventories	4,150,815	4,169,043	0.4	4,384,941	4,717,275	5,003,035
489,816	Other	8,604,028	289,816	-96.6	289,816	289,816	289,816
52,734,942	Total non-financial assets	54,345,681	54,764,536	0.8	56,362,019	58,601,472	61,072,871
53,651,520	Total assets	55,201,416	55,637,471	0.8	57,184,954	59,369,407	61,780,806
LIABILITIES							
Debt:							
243,710	Leases	228,290	228,990	-	211,930	490,230	452,890
2,631	Other interest bearing liabilities	2,631	2,631	-	2,631	2,631	2,631
246,341	Total Debt	230,921	230,921	-	214,561	492,861	455,521
Provisions and payables							
1,550,302	Employees	1,532,896	1,493,890	-2.5	1,427,945	1,477,763	1,525,726
584,885	Suppliers	608,219	608,219	-	631,553	654,887	678,221
527,606	Other	527,606	527,606	-	527,606	527,606	527,606
2,662,793	Total provisions and payable	2,668,721	2,629,715	-1.5	2,587,104	2,660,256	2,731,553
2,909,134	Total liabilities	2,899,642	2,860,636	-1.3	2,801,665	3,153,117	3,187,074
50,742,386	Net Assets	52,301,774	52,776,835	0.9	54,383,289	56,216,290	58,593,732
EQUITY							
4,559,862	Contributed equity	5,998,086	6,482,741	8.1	7,971,485	9,804,486	12,181,928
10,610,860	Reserves	10,610,860	10,610,860	-	10,610,860	10,610,860	10,610,860
35,571,664	Retained surpluses or accumulated deficits	35,692,828	35,683,234	0.0	35,800,944	35,800,944	35,800,944
50,742,386	Total Equity	52,301,774	52,776,835	0.9	54,383,289	56,216,290	58,593,732
Represented by:							
788,677	Current assets	811,296	817,871	0.8	840,599	872,730	908,178
52,862,843	Non-current assets	54,390,120	54,819,600	0.8	56,344,355	58,496,677	60,872,628
1,707,087	Current liabilities	1,701,517	1,678,628	-1.3	1,644,024	1,676,798	1,707,932
1,202,047	Non-current liabilities	1,198,125	1,182,008	-1.3	1,157,641	1,476,319	1,479,142

Note: 1. Cross-reference to Table 2.7 in Chapter Two - Resourcing

Net Assets = Total Equity

This is simply the difference between the assets and the liabilities and represents the value of the owner's interests. Note that capital is net of capital withdrawals.

Here the equity (net assets) are broken up in terms of the source or nature of equity.

The Budgeted Departmental Statement of Cash Flows [PBS Table 7.3]

The Budgeted Departmental Statement of Cash Flows reports the actual receipt and expenditure of cash in Defence. It is however, just as complex as any of the other statements.

The cash flows are broken into three categories and the net impact of cash movements for each category is then brought together to literally show the net impact on Defence's bank account at the end of the financial year. In broad terms the 2006-07 budget shows the movements in cash as follows:

Change to cash \$ nil	=	Net cash from/to operating activities \$4 402 million	+	Net cash from/to investing activities -\$6,309 million	+	Net cash from/to financing activities \$1,907 million
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Net Cash from/to Operating Activities is the net cash remaining after the delivery of the Defence outputs. As is shown, from the total cash received from operating activities of \$18,009 million about \$6,554 million is spent on employees and \$7,022 million is spent on suppliers. The composition of these amounts are similar to the corresponding *expenses* in the Budgeted Departmental Income Statement – although the numbers will differ slightly due to goods and services tax (GST) and timing differences between expenses are incurred and when the cash is paid. The total unused cash from operating activities is around \$4,402 million.

Movements to and from the Official Public Account relate to the implementation of an 'as required' cash drawdown arrangement. Cash reserves are able to be drawn down through an appropriation receivable.

Net Cash from/to Investing Activities is the difference between the gross receipts from the sale of assets and cash used, including the purchase of specialist military equipment (\$4 523 million), other property, plant and equipment (\$565 million), and inventory purchases (\$1 240 million). Broadly speaking, the specialist military equipment includes the major and minor capital equipment programs, while other property, plant and equipment include much of the capital facilities program.

Investing activities consume \$6,310 million more cash than they generate from capital receipt activities. The difference is funded from the excess operating activities cash and equity appropriation. It is possible to see how much of the excess operating cash is used to purchase capital items by looking at PBS Table 7.5 Departmental Capital Budget Statement. Of the \$4,402 million net operating cash, \$3,147 million is budgeted to be used as funding for capital, referred to as 'operating receipts' within Total Capital Funding. This amount represents funding in the output appropriation for depreciation and other non cash amounts that is being applied to buy assets.

Net Cash from/to Financing Activities is mainly concerned with accounting for the various cash transactions between Defence and the Government related to capital investment.

Net cash from/to financing activities \$1,907 million	=	Equity injection \$1,937 million	–	Capital withdrawal \$15 million	–	Repayment of debt \$15 million
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Finally, the three net cash changes over the financial year are brought together to project the cash held by Defence on 30 June 2007 on the basis of the starting balance at 1 July 2005.

Cash held 30 June 2006 \$161 million	=	Cash held 1 July 2005 \$161 million	+	Change to cash \$nil
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The Budgeted Departmental Statement of Cash Flows is demonstrated on the following page.

The Budgeted Departmental Statement of Cash Flows [PBS Table 7.3]

The *cash* received for operating activities is the collection of the *revenues* on the Statement of Financial Performance. The difference is due to timing of transactions.

The *cash* used for operating activities is less than the *expenses* recorded for operating activities on the Statement of Financial Performance because of non-cash expenses (eg depreciation)

2005-06 Estimated Actual \$'000		2006-07 Previous Estimate \$'000	2006-07 Budget Estimate \$'000	Variation %	2007-08 Forward Estimate \$'000	2008-09 Forward Estimate \$'000	2009-10 Forward Estimate \$'000
OPERATING ACTIVITIES							
16,133,541	Appropriations from Government	16,362,110	17,063,404	4.3	17,424,698	17,498,316	18,089,342
545,339	Sales of goods and services	268,234	540,586	101.5	547,278	557,735	570,047
287,007	Interest	-	-	-	-	-	-
86,391	Net GST refund	296,921	296,291	-	314,384	316,168	381,329
86,445	Other	226,576	64,163	-71.7	63,458	63,157	78,426
	Cash transfer from OPA (receivables)	43,643	43,463	-	50,000	55,000	60,000
17,138,723	Total cash received	17,197,484	18,008,818	4.7	18,399,818	18,490,376	19,179,144
6,235,874	Employees	6,494,534	6,553,924	0.9	6,690,641	6,989,637	7,439,552
6,620,785	Suppliers	6,347,578	7,022,330	10.6	7,122,136	6,874,288	7,212,366
6,675	Grants	5,201	5,592	7.5	1,304	1,304	1,304
20,324	Finance Costs	32,716	20,412	-37.6	20,799	21,144	21,605
20,000	Inventory	-	-	-	-	-	-
87,200	Other	4,000	4,004	0.1	1,501	1,506	1,506
	Cash transfer from Official Public Account						
12,990,858	Total cash used	12,884,029	13,606,262	5.6	13,836,381	13,887,879	14,676,333
4,147,865	NET CASH FROM (TO) OPERATING ACTIVITIES	4,313,455	4,402,455	2.1	4,563,437	4,602,497	4,502,811
INVESTING ACTIVITIES							
Cash received:							
83,363	Proceeds from sales of property, plant and equipment	5,792	38,192	559.4	122,208	69,210	6,799
83,363	Total cash received	5,792	38,192	559.4	122,208	69,210	6,799
Cash used:							
3,420,757	Purchase of SME	3,969,944	4,522,933	13.9	4,370,480	4,409,902	4,769,820
485,608	Purchase of PPE	466,708	585,446	25.4	572,908	716,213	766,876
1,198,499	Inventory purchases	1,236,199	1,239,727	0.3	1,214,641	1,342,193	1,313,016
5,104,864	Total cash used	5,672,851	6,348,106	11.9	6,158,029	6,468,308	6,849,712
-5,021,501	NET CASH FROM (TO) INVESTING ACTIVITIES	-5,667,059	-6,309,914	11.3	-6,035,821	-6,399,098	-6,842,913
FINANCING ACTIVITIES							
Cash received:							
972,080	Equity appropriation	1,369,024	1,937,879	41.6	1,588,444	1,880,401	2,379,642
972,080	Total cash received	1,369,024	1,937,879	41.6	1,588,444	1,880,401	2,379,642
Cash used:							
14,480	Repayments of debt	15,420	15,420	-	16,360	36,400	37,340
0	Capital use charge	-	-	-	-	-	-
176,964	Capital withdrawal	-	15,000	-	99,700	47,400	2,200
191,444	Total cash used	15,420	30,420	97.3	116,060	83,800	39,540
780,636	NET CASH FROM (TO) FINANCING ACTIVITIES	1,353,604	1,907,459	40.9	1,472,384	1,796,601	2,340,102
-93,000	Net Increase/(Decrease) in Cash Held						
254,425	Cash at 1 July	161,249	161,249	-	161,249	161,249	161,249
-176	Other Movements						
161,249	Cash At 30 June	161,249	161,249		161,249	161,249	161,249

Cash received, mainly for the sale of property, plant and equipment

Here is where generally payments to and from government are shown

Cash balance held in Defence's bank account

Here is where the net change in cash in the bank between the start and the end of the financial year is calculated

The purchase of assets including capital assets and buildings

The Capital Budget [PBS Table 7.5]

The Capital Budget Statement [PBS Table 7.5] is largely a restatement of the Budgeted Departmental Statement of Cash Flows relating to capital investment. It spells out where the funding for the capital budget comes from.

The **Capital Expenditure** is presented just as it is in the Budgeted Departmental Statement of Cash Flows. The **Capital Receipts** are also sourced from the Budgeted Departmental Statement of Cash Flows and the calculation of the **Net Capital Receipts** simply subtracts the Capital Withdrawal from this cash received for investing activities. The interesting part of the statement is the calculation of the **Total Capital Funding**.

The **Total Capital Funding** shows the three separate sources of cash funding for capital investment. This includes the equity injection, or equity appropriation, from the Government (\$1,938 million), and the net capital receipts of \$23 million, being the proceeds from the sale of assets after the capital withdrawal by Government. Finally, the Operating receipts provide the balance of the capital funding of \$3,147 million from what is *in effect* cash from operating activities.

Capital funding \$5,108 million	=	Equity injection \$1,938 million	+	Operating receipts \$3,147 million	+	Net capital receipts \$23 million
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Further details on the Capital Budget can be found in PBS Table 7.5.

Table 7.5: Departmental Capital Budget Statement

Capital expenditure as given in the Statement of Cash Flows

2005-06 Estimated Actual \$'000	2006-07 Previous Estimate \$'000	2006-07 Budget Estimate \$'000	Variation %	2007-08 Forward Estimate \$'000	2008-09 Forward Estimate \$'000	2009-10 Forward Estimate \$'000
CAPITAL EXPENDITURE						
3,420,757	3,969,944	4,522,933	13.9	4,370,480	4,409,902	4,769,820
485,608	466,708	585,446	25.4	572,908	716,213	766,876
3,906,365	4,436,652	5,108,379	15.1	4,943,388	5,126,115	5,536,696
Funded from:						
972,080	1,369,024	1,937,879	41.6	1,588,444	1,880,401	2,379,642
2,909,422	3,061,836	3,147,308	2.8	3,332,436	3,223,904	3,152,455
24,863	5,792	23,192	300.4	22,508	21,810	4,599
3,906,365	4,436,652	5,108,379	15.1	4,943,388	5,126,115	5,536,696
CAPITAL RECEIPTS						
--	-	--	-	-	-	-
83,363	5,792	38,192	559.4	122,208	69,210	6,799
-58,500	-	-15,000	-	-99,700	-47,400	-2,200
24,863	5,792	23,192	300.4	22,508	21,810	4,599

This is where the **net capital receipts** are calculated by subtracting the capital withdrawal from the receipts from the sales of property plant and equipment

This is the interesting bit where the various sources of funding for capital investment are brought together.

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GLOSSARY

ADF	Australian Defence Force
AES	Additional Estimates Statements
AEW&C	Airborne Early Warning & Control
ANAO	Australian National Audit Office
APS	Australian Public Service
CDF	Chief of the Defence Force
CSP	Commercial Support program
CUC	Capital Use Charge
DAR	Defence Annual Report
DCP	Defence Capability Plan
DFRB	Defence Force Retirement and Death Benefits
DHA	Defence Housing Authority
DMO	Defence Materiel Organisation
DRP	Defence Reform Program
DSTO	Defence Science and Technology Organisation
EWSP	Electronic Warfare Self Protection
FADT	Foreign Affairs Defence and Trade
FBT	Fringe Benefits Tax
FMA	<i>Financial Management and Accountability Act 1997</i>
GDP	Gross Domestic Product
GST	Goods and services tax
MSBS	Military Superannuation and Benefits Scheme
PAES	Portfolio Additional Estimates Statements
PBS	Portfolio Budget Statement
SES	Senior Executive Service