

Defence Materiel Organisation

- 2.1 The Defence Materiel Organisation (DMO) is Australia's largest project management organisation. DMO is part of the Department of Defence; its mission is to acquire and sustain equipment to support the Australian Defence Force (ADF). DMO employs over 7,500 people in more than 40 locations around Australia and overseas. DMO is currently managing over 230 major projects and 180 minor projects.¹
- 2.2 In 2006-07 DMO had a budget of over \$8.5 billion; from this amount, over \$4.2 billion forms the capital budget, and over \$4 billion will be spent on sustainment (through-life support) of equipment.

Significant funding slippages for DMO's Top 30 Projects

- 2.3 The Committee raised concerns about the discrepancies between the budget estimates and actual expenditure for DMO's Top 30 Projects in 2006-2007.
- 2.4 The DMO Top 30 Projects for 2006-2007 are ranked by expenditure as forecast in the *Portfolio Budget Statements 2006-2007*.² The expenditure for the Top 30 Projects represents approximately 77 per cent of the total expenditure on major capital equipment in 2006-07.

1 <http://www.defence.gov.au/dmo/about/index.cfm>

2 Defence Annual Report 2006-2007 Volume 2 pp. 21-23.

2.5 Of concern to the Defence Sub-Committee were the significant variations in budget estimates compared to actual expenditure. The initial budget estimate for the DMO's Top 30 Projects was \$3,798 million and the revised estimate was reduced to \$3,209 million. Actual expenditure was finalised as \$2,879 million; \$330 million (10 per cent) less than the revised estimate and \$1,099 million (29 per cent) less than the initial budget estimate.³

2.6 The Committee questioned Defence about these substantial variations:

The parliament and the public have a pretty fair expectation that when budgets are adopted the expenditure mirrors as closely as possible what transpires. This is not an isolated incident. This is not the first year we have seen annual reports where these things happen.⁴

2.7 Defence replied that:

The biggest problem we are facing in Defence equipment acquisition is schedule. As we have benchmarked ourselves against other countries and as we have looked at our own performance, we find that, once you make corrections for foreign exchange, inflation, changes of quantity and transfers to other parts of the Defence organisation, that post-second pass or post-contract formation we are bringing in most of the projects at/or around the budget. This is a surprise to many people. When you look at the data, it shows that about 20 per cent of the projects go over in cost, about 20 per cent of the projects come in or around the budget, and about 60 per cent actually come in under. Those that come in under pretty much pay for those that come in over after you make those corrections for the quantities. I would point out that this is post-second pass approval when we are into actually building or delivering the equipment. In other words, cost is not the thing that gives us deep concern. The statistics we have are that in 239 major projects – and we define a major project as over \$20 million – closed over the last 10 years with an accumulated value of \$27 billion, when you make those corrections for foreign exchange, inflation, quantities and transfers they came in on average at 98 per cent of the budget. Typically, the more complex the weapons system, the greater

3 Defence Annual Report 2006-2007 Volume 2 p. 23.

4 Hon Arch Bevis MP, *Transcript 10 July 2008*, p. 2.

the project delays. Most of our major projects run two or three years late. We have been doing quite a bit of analysis on the causes of those schedule delays.⁵

- 2.8 Difficulties with cost arise during the period before 'second pass' approval, when stakeholders are still determining requirements. There is typically a difference of 60-70% between the Defence Capability Plan, and when the project arrives at 'second pass' approval. Therefore, the biggest cost issues occur up to 'second pass,' although there are several costly projects after this period. This is commensurate with the British and American experiences.⁶
- 2.9 The largest hurdle facing Defence is project scheduling, where projects typically run two to three years late, with the more complex projects having the longest delays. DMO only pays when invoices are received; therefore, if projects are behind schedule, invoices are not submitted, which affects cost and results in underspending.⁷
- 2.10 The Committee enquired whether schedule slippages were factored into the budget estimate, especially as Australia's experiences are in line with the experiences of other Defence forces.⁸
- 2.11 Defence replied that the project estimates are over-programmed by 15 per cent, on the assumption that 15 per cent of milestones will not be met. Any milestones not met in excess of 15 per cent will be counted as underspend. Recent project delays have been 'running a bit higher than 15 per cent.'⁹
- 2.12 Given that budget estimates on major acquisitions assume a 15 per cent slippage, the resulting substantial shortfall is all the more worrying. The real impact of this slippage is a delay in necessary capability for Australia's Defence Force. Defence and the DMO, need to improve performance in this area.
- 2.13 Committee Determination: The Committee will continue to monitor Defence performance in its major acquisitions program.

5 Dr Stephen Gumley, *Transcript 10 July 2008*, p. 3.

6 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 3.

7 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 3.

8 Hon Arch Bevis MP, *Transcript 10 July 2008*, p. 3.

9 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 4.

Status of individual projects

- 2.14 In order to seek a greater understanding on the reasons for the significant variations to budget estimates, the Committee enquired about the status of several individual projects. These are discussed below.

Super Seasprite

- 2.15 The Anzac Ship Helicopter (Super Seasprite) was a maritime combat helicopter being introduced as part of Project SEA 1411 Phase 1. The project commenced in 1994 and initial contracts were signed in 1997. Due to significant project delays, escalating costs and concern that the Seasprite's full capability could not be delivered, the project was cancelled in March 2008.
- 2.16 The project was to acquire 11 Super Seasprite helicopters for the Anzac class frigates. The package included a full mission flight simulator and software support centre. The Super Seasprite was to provide enhanced capability for surface surveillance, anti-ship warfare, contact investigation and maritime utility tasks.¹⁰
- 2.17 In the year under review, 2006-2007, the Super Seasprite was delayed into operational service due to software development issues and problems with automatic flight control. In 2006-2007 the Super Seasprites did not achieve their targeted 100 flying hours for testing. This was due to suspension of flying since March 2006.¹¹
- 2.18 On 25 March 2007, the Government announced that subject to satisfactory contract arrangements, the project was to continue.¹² It was expected that all 11 Super Seasprite aircraft, with full tactical systems functionality, would be delivered by 2010-2011. This represented a further 3-year delay to the program.¹³
- 2.19 On 5 March 2008, following concerns that the software development issues and automatic flight control problems would not be rectified in an acceptable timeframe, the Minister for Defence announced:

10 Defence Annual Report 2006-2007, Volume 2, p. 31.

11 Defence Annual Report 2006-2007, Volume 1, p. 64.

12 Defence Annual Report 2006-2007, Volume 1, p. 73; Defence Annual Report 2006-2007, Volume 2, p. 31.

13 Defence Annual Report 2006-2007 Volume 1 p. 73; Defence Annual Report 2006-2007 Volume 2 p. 31.

In late 2007 the Rudd Labor Government initiated a review of the Seasprite helicopter project, in line with the promises made prior to the election. After careful consideration of all the issues involved, the Government has decided that it intends to cancel the project.¹⁴

2.20 The Committee expressed concerns about how Defence spent such a large amount of money, over such a long period of time, which resulted in a product that was demonstrably not what was required?¹⁵

2.21 Defence acknowledged the serious nature of the issues, and the magnitude of financial loss to the Commonwealth. However, as part of the deed of negotiation that is being reached with Kaman, Defence advised:

What we have agreed is a minimum amount, regardless of whether the aircraft are sold by Kaman or not, and that is the \$39.5 million. Plus, there is an additional \$30 million that we have retained for spares and transferred them out of the Seasprite program across to Sea Hawk and some to Black Hawk. It is our expectation that we will gain far more than that. I cannot put a figure on that at the moment.¹⁶

We have reached a mutually agreed outcome with Kaman on the cancellation of the program, which is subject to US government approval. We have requested that US government approval, but it is in process at the moment and has not yet been provided. The objective is for Kaman to take the aircraft and equipment back, sell it on the open market and provide a share of profits back to the Commonwealth, which is at least 50 per cent and at an increasing level.¹⁷

2.22 Defence noted that the Australian National Audit Office (ANAO) is also conducting an audit into the Super Seasprite project; the report is expected to be tabled in 2008.¹⁸ It will focus on 'project management, the design acceptance process, the certification process and the advice that goes with the certification process.'¹⁹

14 Hon Joel Fitzgibbon MP, Minister for Defence, Media Release 14/08, 5 March 2008

15 Hon Arch Bevis MP, *Transcript 10 July 2008*, p. 8.

16 Major General Anthony Fraser, *Transcript 10 July 2008*, pp. 8 – 9.

17 Major General Anthony Fraser, *Transcript 10 July 2008*, p.8.

18 Dr Stephen Gumley, *Transcript 10 July 2008*, p. 14.

19 Ms Jane Wolfe, *Transcript 10 July 2008*, p. 14.

- 2.23 Defence advised the Committee that lessons have been learnt from the Super Seasprite:

Essentially it is a lot more risk mitigation prior to entering contract. The time to bail out of a project is early, and from time to time we will make recommendations to government that a project is simply too risky and we should bail out.²⁰

- 2.24 Following this explanation, the Committee was concerned that, after \$1b had been spent on the Super Seasprite, the reasons why the project 'went wrong' cannot be disclosed as it would impinge on the settlement with Kaman. The Committee believed this was unsatisfactory.²¹ Defence accepted this position, and replied that the issues with Seasprite were:

In capability they have made compromises, concessions, both by the contractor and ourselves, to try to deliver a capability as soon as they could to Navy. There is no capability in lieu for Seasprite and so along the way they have attempted, by changes, to make variations to deliver a capability. It is the cumulative effects of those that have caused the problem. Each one in isolation over many years might have been acceptable to bring the aircraft through to fruition, but they have not been able to step back and look at the collective effects as time has moved on.²²

- 2.25 The Defence Sub-Committee, while disappointed with the Seasprite project outcomes, notes that an external audit of the project is being conducted by the ANAO. The Committee looks forward to receiving the ANAO Report.
- 2.26 Committee Determination: The Committee will be seeking further briefings from DMO following the release of the ANAO Audit.

Tiger Armed Reconnaissance Helicopter

- 2.27 Project Air 87 will provide Defence with 22 Tiger Armed Reconnaissance Helicopters (ARH); a training system, including simulation devices for aircrew and maintenance personnel; a software support facility and a ground mission management system.²³

20 Dr Stephen Gumley, *Transcript 10 July 2008*, p. 9.

21 Senator Mark Bishop, *Transcript 10 July 2008*, p. 9.

22 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 10.

23 http://www.defence.gov.au/dmo/lsp/armed_rec_helicopter.cfm

2.28 Costings for the Tiger ARH project in 2006 – 2007 were:²⁴

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$312m	\$246m	\$151m	\$ -95m	\$ -161m

2.29 In explanation, the Defence Annual Report 2006-2007 states:

Delivery of operational capability to the Army is delayed by 24 months, primarily because of delays in the Franco-German program on which the Australian Tiger relies for certification and qualification. This has caused slippage in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve a critical milestone – initial operational capability – and, as a result, the DMO imposed a contractual stop payment from the milestone schedule delivery date of 1 June 2007.²⁵

2.30 The Department of Defence told the Committee that the Tiger project's underachievement was attributed to two factors: that the contractor did not produce what was expected, and that Australian Aerospace did not achieve a stop-payment milestone (which resulted in payment being suspended).²⁶

2.31 The Committee asked about the current status of the project. The Department of Defence replied that:

Since negotiating a successful outcome through the dispute, the program has gained significant momentum. The aircraft in Australia has flown 2,700 hours, 24 personnel have trained, and the aircraft have been deployed to Darwin ... into the regiment and into the operational capability to start that work.²⁷

Importantly for us, the negotiation converted the through-life support contract from essentially what was a cost-plus type

24 Defence Annual Report 2006-2007, Volume 2, p. 22.

25 Defence Annual Report 2006-2007, Volume 2, p. 30.

26 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 4.

27 Major General Anthony Fraser, *Transcript 10 July 2008*, pp. 4-5.

contract to a performance based contract, driving an incentive on the contractor therefore to reduce the total cost of ownership to the Commonwealth. It has also focused on delivering an operational capability to Army as quickly as we can possibly do so.²⁸

The first four instructors were to be trained on their [French] aircraft. Because the French army had not accepted their aircraft and the French equivalent to DMO had not accepted their aircraft, we were unable to affect that training in the time frame that we envisaged and was contracted. The second was that much of the data from their aircraft was to be used for our simulator – for example, to assist us with the certification and the development of the simulator. The result of that was a two-year schedule slip in the training of our staff and training of the initial cadre of flight crew.²⁹

- 2.32 The Committee enquired further about other options available for training.³⁰ Defence replied that:

We managed as best as we possibly could to recover training, but there are no other Tigers in service in the world at this point in time. We did send some personnel across to fly with the US. We have looked at lead-in skills, and part of the resulted negotiations here is to put two EC135s into Darwin - glass cockpit aircraft - to compress the training on the aircraft type as much as we possibly can. We have deployed some instructors across to France to train with the French army to catch up as best we possibly can. We cannot recover those first two years of basic training.³¹

- 2.33 The Committee also expressed reservations over DMO's decision to go with a platform that was not developed, as opposed to one already developed and in service across the world.³² Defence replied:

... there was risk in [acquiring] an early developmental program. Perhaps part of many of the lessons learned.....is the full understanding of the maturity level of the product and the off-the-shelf level of the product that we are trying to gain for the Defence Force and to introduce into service to

28 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 5.

29 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 5.

30 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 5.

31 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 5.

32 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 6.

make an informed decision. It does not mean we should not take some risk, because in some cases we do need to take some risk with the developmental program. It just needs to be understood that we have that risk and therefore there is potential delay to the operational capability.³³

- 2.34 When asked why risks were not being accounted for, when projects are running two to three years behind schedule, Defence replied that the Tiger program was doing well, and lessons have been learnt.³⁴ These include applying the Kinnaird two-pass process, and that:

a lot more work needs to be done between first and second pass on analysing risks, reducing risks, and working out risk mitigators ...³⁵

- 2.35 Committee Determination: The Committee will continue to monitor the ongoing progress of the Tiger ARH project and intend to visit the Australian Aerospace assembly facility in the first half of 2009.

Multi-Role Helicopter (MRH-90) Project

- 2.36 Costings for the MRH-90 (AIR9000) in 2006 – 2007 were:³⁶

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$183m	\$360m	\$329m	\$ -31m	\$146m

- 2.37 The MRH-90 project will consolidate and reduce the number of helicopter fleets operated by the Australian Defence Force. The project will acquire 46 Multi Role Helicopters (MRH-90) and support systems for the Army and Navy. The support systems will include an electronic warfare self protection support cell, a ground mission management system, a software support centre, and instrumented aircraft with telemetry, up to three full flight and mission simulators and facilities infrastructure. The initial flight for the first Australian MRH-90 was conducted on 28 March 2007. An additional 10-year

33 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 6.

34 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 7.

35 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 7.

36 Defence Annual Report 2006-2007, Volume 2, p. 21.

sustainment contract starts from the in-service date of 18 December 2007. When completed, the project will have enhanced the ADF capability in airmobile operation and special mission roles and enhanced troop lift helicopter operations from HMA Ships *Manoora* and *Kanimbla*.³⁷

2.38 On 30 June 2006, a contract change proposal to the project was signed for the procurement of an additional 34 helicopters to replace the Army Blackhawk and Navy Sea King helicopters, bringing the total to 46 aircraft.³⁸ This contract change accounts for the \$173 million increase from the budget estimate to the revised estimate.

2.39 The Australian MRH-90 program is the only one in the world that is on schedule.³⁹ The Committee was advised:

The first two aircraft were accepted on 18 December last year ... The training in France, unlike for the Tiger, was effected completely and fully. In fact, we overtrained; we completed more training in France than what we had expected to do as part of the risk mitigation. The training [in Australia] will commence in earnest very shortly.⁴⁰

2.40 Defence further advised the Committee that the first four aircraft will be in-service by 2011; that is the initial operational capability. All 46 aircraft should have been delivered by the end of 2014.⁴¹

2.41 Committee Determination: The Committee acknowledges that this project is currently on schedule and progressing well and believes this is due, in part, to Defence being second or third customer (as opposed to being first customer or first of type). The Committee will continue to monitor the project's progress, particularly the risk associated with the Australian training program.

37 http://www.defence.gov.au/dmo/lsp/Multi_Role_Helicopter_Program.cfm

38 Defence Annual Report 2006-2007, Volume 2, p. 29.

39 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 7.

40 Major General Anthony Fraser, *Transcript 10 July 2008*, pp. 14-15.

41 Major General Anthony Fraser, *Transcript 10 July 2008*, p. 16.

Airborne Early Warning and Control Aircraft (AEW&C) - Project Wedgetail

2.42 Costings for Project Wedgetail in 2006 – 2007 were:⁴²

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$439m	\$159m	\$58m	\$ -101m	\$ -381m

2.43 The AEW&C 'Wedgetail' is based on Boeing's next generation 737 aircraft, modified to accommodate various sophisticated mission systems. The primary sensor on the aircraft is a phased-array radar, with no moving parts, that can scan through 360 degrees. Six aircraft are being procured (AIR 5077), along with associated supplies and support systems.⁴³

2.44 The Annual Report notes that:

Expenditure was less than that estimated, primarily due to slippage against the prime contract. Events included a two-year delay, announced by Boeing, which would shift initial operational capability to 2011. Delays were caused by problems associated with sub-systems integration, supplier hardware availability, radar and electronics support measures maturity, and aircraft modification.⁴⁴

2.45 The Committee sought an explanation as to why the budget estimate was for \$439 million, yet only \$58 million was spent.⁴⁵ Defence replied:

... in June 2006 ... an 18-month delay to the program was declared by Boeing. In February 2007 a further six-month delay was declared, bringing the total delay to the program of, in the order of, 28 months. Just recently, Boeing has declared a 10-month additional delay to the program, which is associated with delivering full operational capability to the aircraft. It intends to deliver an increment in the July 2009 timeframe, which will allow us to commence training. The

42 Defence Annual Report 2006-2007, Volume 2, p. 22.

43 <http://www.defence.gov.au/dmo/lsp/AEW&C.cfm>

44 Defence Annual Report 2006-2007, Volume 2, p. 32.

45 Hon Arch Bevis MP, *Transcript 10 July 2008*, p. 16.

significant variances in the budget are specifically related to those delays and the failure to achieve milestones on the program, including progress payments, and we have had to slip those out into further years.⁴⁶

Incidentally, a critical lesson learnt here is the importance of the DMO having full visibility of the contractor's schedule and the contractor being contracted to deliver that schedule to us. It is very hard for us to make estimates of money to be spent if we do not have a fully populated schedule. On Project Wedgetail we waited for that schedule for two years.⁴⁷

Boeing, one of the largest defence contractors in the world and one of the largest aircraft builders in the world, was unable to provide us with a detailed schedule for some two years and we waited. We were making our basis of estimates on our expenditure without clarity of that schedule.⁴⁸

Contractually, they were obligated to deliver us a schedule, but they did not. We stopped paying them. We are not going to pay contractors for work they do not do.⁴⁹

The significant issues that we are confronting are the developmental issues associated with things like the multi-role electronically scanned array MESA radar, and that is an area that is highly technical. We are at the cutting edge. We are the first customer of a first of type, so there are many issues associated with those developmental areas.⁵⁰

2.46 The Committee noted that Boeing was contracted to provide a product and a timetable for delivery in accordance with set milestones. The Committee then asked:

Do we have anyone embedded at a senior level with the technical know-how to identify early on apparent non-compliance with contract milestones?⁵¹

46 Air Vice Marshal Christopher Deeble, *Transcript 10 July 2008*, p. 16.

47 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 16.

48 Mr Kim Gillis, *Transcript 10 July 2008*, pp. 16-17.

49 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 17.

50 Air Vice Marshal Christopher Deeble, *Transcript 10 July 2008*, p. 17.

51 Senator Mark Bishop, *Transcript 10 July 2008*, p. 17.

2.47 Defence replied:

We have a resident project team working co-sited with Boeing in Seattle. I also have a small resident team co-sited with Northrop Grumman in Baltimore. They are responsible for the development of the radar. I have a resident team with British Aerospace in Adelaide that provide me with the data and their assessment against schedule and the technical risks that we face on the program. We have a good insight. In some areas, in particular with the radar, we are constrained by technology transfer issues associated with the US, so we do not have full insight into some of those areas where those licensing arrangements with the US constrain us. We engage with US government agencies that provide additional support to us in that regard to provide some level of insight where we do not get through to that technology transfer.⁵²

2.48 The Committee further enquired:

With respect to the series of teams identified ... are they embedded to the extent such that they can keep you sufficiently informed? Secondly, do they have the level of technical know-how to keep you sufficiently informed about the progress of multi-billion dollar projects, instead of you being told irregularly that the project has blown out by another 10 or 12 months?⁵³

2.49 Defence replied:

The embedded teams are absolutely critical for us to understand where the contractor is on their project. On Wedgetail, it would be fair to say that we were predicting the delays long before Boeing was acknowledging the delays. We were getting regular reports saying that there were this many milestones being missed and that technical delivery was not going to happen, and we were in a position in which we were informing government of this extra delay a good year to a year and a half before it happened. The lesson learnt there is that if you are going to do a major international development program, you must have embedded staff if you are going to do it effectively.⁵⁴

52 Air Vice Marshal Christopher Deeble, *Transcript 10 July 2008*, p. 17.

53 Senator Mark Bishop, *Transcript 10 July 2008*, p. 18.

54 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 18.

One of the issues we are finding with both Boeing US and Boeing Australia is a systemic problem with schedule management. We are working with Boeing to assist them to improve how they conduct and draft up their schedules and to provide good schedule analysis, because the same problems in schedule management and delivery of schedule are occurring on Vigilare and HF Modern and a number of other Boeing projects. So we are working with the supplier to assist them in improving their schedule management. Boeing is a very good company in respect to its provision of commercial aircraft, but it is having some problems with its delivery of projects in Australia.⁵⁵

- 2.50 At the public hearing held on 29 August 2008, Defence further reported to the Committee on the current status of the project, taking into account recent additional delays announced by Boeing:

They are estimating a full operational capability will be delivered in January 2010 and that a training capability would be delivered in June of 2009.

Initial operational capability is based on when we start training, and it is some 15 months evolution to achieve the number of crews trained and the level of capability subsequent to that. If we start training in the June 2009 time frame we would expect that initial operational capability to be established by the end of 2010.

... predominantly driven by technical risks associated with the radar and achieving specification in the radar. We are working closely with Boeing through those issues as we speak. We formed a number of working groups that are looking at those very issues and we will be able to assess that residual technical risk associated with the radar in the immediate future. We also believe that the test program has some other risks associated with it, predominantly that it is a very complex platform. The test and evaluation program aims to take over 12 months before we would look at getting to that training capability in the January 2010 time frame.

Initial operational capability is based on when we start training, and it is some 15 months evolution to achieve the number of crews trained and the level of capability

55 Mr Kim Gillis, *Transcript 10 July 2008*, p. 18.

subsequent to that. If we start training in the June 2009 time frame, we would expect that initial operational capability to be established by the end of 2010.⁵⁶

- 2.51 The Committee enquired if that meant that Defence would expect a fully operational aircraft that could be sent to any theatre of operation in 2010.⁵⁷ Defence replied:

That is currently the Boeing plan – to deliver a fully operational capability in January 2010. You do not have the capability unless you have the crews trained. The initial operational capability would be at the end of the 2010 time frame, assuming that we start training in June of 2009. That assumes that the aircraft are delivered fully compliant in the January 2010 time frame and crews are then subsequently trained.⁵⁸

- 2.52 The Committee then enquired how confident Defence was of the aircraft being fully compliant in that time frame.⁵⁹ Defence replied:

I believe that there is technical risk associated with the radar, predominantly. The technical risk associated with the radar will bound other risks related to the electronic support measures, some of our communications, mission computing and data link aspects of that. We are working closely with Boeing in terms of looking at those issues and looking at the resolution path that we would need to take.⁶⁰

- 2.53 Committee determination: The Committee regards the failures of Boeing in 2006-2007 to meet most of the progress targets for the Wedgetail project as serious and unacceptable. The Committee hopes that the changes made by DMO will prevent any further slippages for this important project. The Committee will seek update briefings from DMO in 2009.

- 2.54 Following the public hearing on 29 August 2008, the Committee sought additional information from Defence on the interchangeability of Wedgetail's sensor suites, through-life support costs and whether any other countries were expected to purchase the Wedgetail capability. Defence replied:

56 Air Vice Marshal Christopher Deeble, *Transcript 29 August 2008*, p. 40.

57 Hon Bob Baldwin MP, *Transcript 29 August 2008*, p. 40.

58 Air Vice Marshal Christopher Deeble, *Transcript 29 August 2008*, p. 40.

59 Hon Bob Baldwin MP, *Transcript 29 August 2008*, p. 41.

60 Air Vice Marshal Christopher Deeble, *Transcript 29 August 2008*, p. 41.

It is customary for sensors and components to be common across the fleet and interchangeable between platforms within the fleet. This will be the case on delivery of the Wedgetail platforms. However, while the surveillance radars (the primary sensor) will all be delivered to the same build configuration, each one will be calibrated to the airframe upon which it is mounted. Interchanging radars between platforms is not envisaged.

Through-life-support costs for Wedgetail were the subject of detailed consideration during the tender evaluation/source selection phase conducted in 1999. Initial cost estimates that formed part of the source selection decision were based on the assumption that Australia would be the sole customer for the B737-AEW&C product.

Boeing is currently under contract to two other countries for the B737-AEW&C: Turkey ordered four aircraft in 2002 and the Republic of South Korea ordered four aircraft in 2006. The United Arab Emirates is currently conducting a competitive evaluation for the supply of four AEW aircraft and Boeing is an active bidder in that process with the B737-AEW&C. A number of other nations, including Oman and India, have also expressed interest in the AEW&C capability. The US Air National Guard has also expressed interest in acquiring some aircraft for its Homeland Defense role in due course. The Wedgetail capability is the cornerstone of the B737-AEW&C product line and, once the capability is delivered, greater US government and international interest is anticipated.⁶¹

- 2.55 The Committee also requested comment on the number of aircraft considered to be “critical mass” for cost effective through-life support and whether Australia would have to pay an additional premium if Boeing did not achieve critical mass for the Wedgetail platform. Defence replied:

The through-life-support cost analysis conducted during the tender evaluation/source selection phase did not include consideration of the ‘critical mass’ that would be required to optimise through-life-support costs. Demonstrated in-service performance, including exercising supply chains, would be required to support this assessment, noting that Wedgetail is a first-of-type. The premium Australia might pay as a result

61 Department of Defence, Submission No 10, p. 11.

of world-wide fleet numbers remaining at their current level of 14 is not able to be estimated with any reliability at this time.⁶²

FFG Program

- 2.56 Project SEA 1390 Ph 4B provides for the integration of the SM-2 missile into four Guided Missile Frigates, delivery of missiles with mid-course guidance capability, and acquisition of initial ship outfit and inventory stock missiles.⁶³ Costings for SEA 1390 Ph 4B in 2006 – 2007 were:⁶⁴

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$96m	\$77m	\$66m	\$ -11m	\$ -30m

- 2.57 This Project seeks to ensure that the four Adelaide-class Guided Missile Frigates remain effective and supportable through to their end of life in 2013–2021. The project is upgrading ship combat systems including sensors, missile launchers and associated platform systems for the Adelaide-Class Guided Missile Frigates.⁶⁵ Costings for SEA 1390 Ph 2 in 2006 – 2007 were:⁶⁶

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$74m	\$91m	\$48m	\$ -43m	\$ -26m

- 2.58 The Committee asked for an update on the FFG upgrades, and cited concerns with the radar upgrade program. Defence replied:

62 Department of Defence, Submission No 10, p. 11.

63 http://www.defence.gov.au/dmo/lsp/SM_1_Replacement.cfm

64 Defence Annual Report 2006-2007, Volume 2, p. 22.

65 http://www.defence.gov.au/dmo/lsp/Adelaide_Class.cfm

66 Defence Annual Report 2006-2007, Volume 2, p. 22.

The FFG upgrade program is at a challenging stage where we are nearing the completion of a great deal of the development and production work but getting to the deliberate, difficult completion and sign-off phase.⁶⁷

- 2.59 Defence noted that the lead ship, *HMAS Sydney*, was offered for initial release, and in 2007 Chief of Navy declined this, due to issues with the electronic surveillance system, the maturity of the integrated logistics support package, and issues with safety case documentation.⁶⁸

We have been working with the prime contractor ... to get the Rafael electronic surveillance system over the line. It is a C-Pearl electronic surveillance system. We have had good progress and successes during this year of debugging the system, finding faults in software, finding faults in some of the inputs for that system ...

... the real issue was major reliability programs and upgrade of the weapon systems ... We have major upgrades to the radar and sensor suites ... The anti-air warfare capability of the FFG is much improved with the installation of the evolved Sea Sparrow missiles and a Mark 41 vertical launching system in the forward part of the ship. That is a huge capability multiplier and we know that the ship is far superior in anti-air warfare terms to the pre-upgraded FFG.

We are on a get-well program to get over the line on the electronic warfare electronic surveillance systems and tactical data links and working with the contractors to deliver the best capability. The critical review point will be in November this year, which is a key contract milestone for delivery and acceptance of the lead ship, its combat systems and the supporting software.⁶⁹

- 2.60 In response to the Committee's query about whether data from the testing and trialling is being assessed⁷⁰, Defence stated:

We are assessing data from program trials over several years. We have had to provide additional trial windows for demonstration and debugging of the electronic surveillance

67 Commodore Andrew McKinnie, *Transcript 10 July 2008*, p. 32.

68 Commodore Andrew McKinnie, *Transcript 10 July 2008*, p. 32.

69 Commodore Andrew McKinnie, *Transcript 10 July 2008*, pp. 32-33.

70 Senator Mark Bishop, *Transcript 10 July 2008*, p. 33.

system ... We have programmed further trials ... to again assess the adequacy of the new software fixes from Rafael that they have developed ...⁷¹

C-Pearl

2.61 C-Pearl is the electronic support measures (ESM) system aboard the Royal Australian Navy's Adelaide-class FFG frigates. It is manufactured by Rafael.⁷²

2.62 The Committee noted concerns raised by the former Chief of Navy that:

his single biggest concern was the Rafael C-Pearl electronic surveillance system. My understanding is that the tests earlier this year failed to meet all the requirements of Navy and that you are moving forward to October-November. . If the Rafael C-Pearl does not pass, what is the plan?⁷³

2.63 Defence replied:

We are focused on satisfying the contract requirements and the requirements of Navy right now. Our energies are very much focused on getting C-Pearl over the line ... We are focused on getting the C-Pearl system to the highest level of capability possible and offering that to Navy. I have to add here that the requirements baseline against which the C-Pearl is being offered evolved after the original contract was signed. The FFG contract was signed against a certain system of specification and the detailed operational requirements and operational concept documentation for FFG upgrade evolved after that contract signature. This is a pre-Kinnaird project; it is imperfect. Some of the reasons why we are having pain and difficulties in demonstrating the required capability is precisely because of the immaturity of requirements that were originally put in place.⁷⁴

71 Commodore Andrew McKinnie, *Transcript 10 July 2008*, p. 33.

72 <http://www.janes.com/extract/jdw2008/jdw36844.html>;
http://www.rafael.co.il/marketing/SIP_STORAGE/FILES/6/726.pdf.

73 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 38.

74 Commodore Andrew McKinnie, *Transcript 10 July 2008*, p. 38.

2.64 The Committee accepted the explanation; however, sought further confirmation:

... [DMO] are still the acquisition organisation, which means you actually need to have a risk mitigation strategy and a plan for when things do not go right. So the question remains: if the tests in October-November do not meet requirements, what is the plan?⁷⁵

2.65 Defence replied:

It will go back to the Defence Investment Committee and it will have to go through the government processes again because there will be no money; therefore, anything that is alternative will have to be funded from somewhere, which means we are into an entirely new acquisition process.⁷⁶

2.66 The Committee asked:

Are you implying that the October-November trials are indeed a drop-dead trial? If it does not pass then we are back into a new funding process?⁷⁷

2.67 Defence replied:

The FFG upgrade prime contractor has absolute requirements on the prime (ADI, trading as Thales) to provide delivery and acceptance of lead ship in its systems in November [2008]. Final acceptance of the total program is in November 2009. The obligation is on them to demonstrate a compliant system and yes, that is a very pointed position of review where, as you say, no-go decisions are made.⁷⁸

If they have not met the contract, then it is the contractor's obligation to remedy until they do meet the contract.⁷⁹

One of the things we have to do is ensure that we do have a contractual obligation through Thales to Rafael, to give Rafael every opportunity to actually deliver against their contract. And that is what we are doing. We have risk mitigation strategies, but we are not putting our resources towards that.

75 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 38.

76 Dr Stephen Gumley, *Transcript 10 July 2008*, p. 38.

77 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 38.

78 Commodore Andrew McKinnie, *Transcript 10 July 2008*, p. 38.

79 Dr Stephen Gumley, *Transcript 10 July 2008*, p. 39.

Our resources are being put towards actually getting the Rafael system to work.⁸⁰

- 2.68 Committee determination: The Committee will watch, with a good deal of interest, the results of the testing in November 2008. The Committee will seek an update briefing from DMO in 2009.
- 2.69 In response to a written request from the Committee for information regarding the FFG upgrade and the potential erosion of costs if funding is not maintained until at least the concurrent introduction of the Air Warfare Destroyer in 2015, Defence replied:

The four upgraded FFGs are planned to be decommissioned progressively between 2015 and 2021 to align with the Air Warfare Destroyer's introduction into service. The Defence Management and Finance Plan (10-year planning basis) and current Materiel Support Agreement between the Navy and the Defence Materiel Organisation include the necessary funding to keep the FFGs operational, materially safe and fit for purpose throughout that period.⁸¹

ADF Air Refuelling Capability (AIR 5402)

- 2.70 Costings for AIR 5402 in 2006 – 2007 were:⁸²

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$167m	\$147m	\$116m	\$ -31m	\$ -51m

- 2.71 The ADF Air Refuelling Capability project involves the acquisition of five Airbus A330 multi-role tanker aircraft and through-life support services.⁸³ Defence updated the Committee on the progress of this project:

The first aircraft arrives in 2009 and the next few come over the next two years after that.⁸⁴

80 Mr Kim Gillis, *Transcript 10 July 2008*, p. 38.

81 Department of Defence, Submission No 10, p. 13.

82 Defence Annual Report 2006-2007, Volume 2, p. 21.

83 Department of Defence, Defence Annual Report 2006-07, Volume Two, p. 28.

84 Air Vice Marshal Clive Rossiter, *Transcript 29 August 2008*, p. 18.

We have two aircraft in play at the moment. For the first one, the modification is being conducted in Madrid... That is about three-quarters of the way through the second stage of the ground testing program, so it is progressing. The second one – what we call the ‘green’ aircraft, based on the commercial platform – arrived in Brisbane in, I think, June this year. That has been lifted up onto jacks and is being prepared to commence the modification, and Qantas are doing that in Brisbane.

...The next commercial aircraft is in the Airbus production line [and] the others are programmed as part of that production line. So the commercial platform part of the program is progressing as per the schedule.⁸⁵

- 2.72 The aircraft’s primary use will be for refuelling purposes, but will also have capacity for use for deployment of squadron personnel and equipment.⁸⁶
- 2.73 In response to the Committee’s query⁸⁷, Defence confirmed that Australia does not currently have its own air refuelling capability, but has made arrangements to access refuelling assets from the United States when necessary.⁸⁸
- 2.74 In 2006-07, there was an underspend on this project of \$51 million from the budget.⁸⁹ Defence clarified that while it could partially be attributed to delays in the military conversion from commercial platform to tankers:

It is difficult to directly relate it to that because we have different milestones. Some of those milestones are stop payment milestones. So the schedule in a lot of areas can be continuing along quite fine but we will not be making payments because a particular stop payment milestone is in delay and then once they have satisfied that stop payment milestone there is a flood of payments made. This project is characterised by some of those stop-start milestone payment arrangements.⁹⁰

85 Air Vice Marshal Clive Rossiter, *Transcript 29 August 2008*, p. 17.

86 Air Vice Marshal Clive Rossiter, *Transcript 29 August 2008*, p. 19.

87 Hon Bruce Scott MP, *Transcript 29 August 2008*, p. 18.

88 Air Vice Marshal Clive Rossiter, *Transcript 29 August 2008*, p. 18.

89 Department of Defence, *Defence Annual Report 2006-07*, Volume 2, p. 21.

90 Air Vice Marshal Clive Rossiter, *Transcript 29 August 2008*, p. 18.

Air Warfare Destroyer (AWD) Project (SEA 4000)

2.75 Costings for the AWD project in 2006 – 2007 were: ⁹¹

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$141m	\$141m	\$135m	\$ -6m	\$ -6m

2.76 The AWD project received second pass consideration in June 2007, a month earlier than anticipated. ⁹²

2.77 The Committee raised concerns with Defence about the AWD's being fitted to accommodate one helicopter rather than being designed to take its two helicopters on a single deployment without requiring second platform support. ⁹³ The DMO representative advised that:

One of the choices we had to make was whether we actually purchased an existing Air Warfare Destroyer or an evolved Air Warfare Destroyer. A 2½-year analysis was made about the risks associated with buying a variance of the two. The existing Air Warfare Destroyer that we are purchasing is the F100 Navantia design, which has one helicopter. One of the things that we have learnt from the past is that trying to change existing designs to meet our specific requirements actually adds risk. The Spanish Armada [with operations very similar to that of the Australian Navy] operates its warfare destroyers with a single helicopter, and so do a number of others. ⁹⁴

2.78 The Committee expressed concern that if a decision was made in the future to deploy an individual AWD, their ability to conduct operations would be severely restricted if the single helicopter was to crash. In such an instance, there would be no backup systems to pick up the people in the crashed helicopter. ⁹⁵ Defence replied:

⁹¹ Defence Annual Report 2006-2007, Volume 2, p. 22.

⁹² Department of Defence, Annual Report 2006-2007, Volume 2, p. 33.

⁹³ Hon Bob Baldwin MP, *Transcript 29 August 2008*, pp. 20-21.

⁹⁴ Mr Kim Gillis, *Transcript 29 August 2008*, p. 21.

⁹⁵ Hon Bob Baldwin MP, *Transcript 29 August 2008*, p. 21.

This issue was debated at length through the whole of the defence capability cycle, through the Defence Committee and through to Cabinet. The decision was made based on good, reliable information and advice from Navy.⁹⁶

M-113 Armoured Vehicles

2.79 Costings for the project to upgrade Army's M-113 Armoured Personnel Carriers (LAND 106) in 2006 – 2007 were:⁹⁷

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$118m	\$8m	\$13m	\$ 5m	\$ -105m

2.80 The LAND 106 project is upgrading 350 of the Army's fleet of M-113 armoured vehicles that provide transport and fire support for the Army's mechanised forces. It will improve protection, firepower, mobility and habitability. The upgrade replaces most of the existing vehicle, retaining only the hull, hatches, rear door and communications systems. It also includes appliqué armour, a new armoured turret and machine gun, and a new engine, drive train and suspension. Expenditure was much lower than the budget estimate because of delays in resolving technical problems; predominantly with the brakes. The introduction into service date was delayed from July 2007 to November 2007.⁹⁸

The Committee notes that delivery of the initial capability of 16 upgraded M-113s was delivered to the 1st Brigade in Darwin in December 2007.

96 Mr Kim Gillis, *Transcript 29 August 2008*, p. 21.

97 Defence Annual Report 2006-2007, Volume 2, p. 22.

98 Department of Defence, Defence Annual Report 2006-2007, Volume 2, p. 43.

Vigilare

2.81 Costings for Project Vigilare (AIR 5333) in 2006 – 2007 were: ⁹⁹

Budget Estimate 2006-2007	Revised Estimate 2006-2007	Actual Expenditure 2006 – 2007	Variation from Revised Estimate	Variation from Budget Estimate
\$32m	\$10m	\$10m	\$ 0m	\$ -22m

2.82 The AIR 5333 project will replace the existing Air Defence command and control system with two new systems located at RAAF Tindal and RAAF Williamtown. It will also design and deliver an integrated ADF Air Defence System communications network. ¹⁰⁰

2.83 Following the public hearing on 29 August 2008, the Committee sought additional information from Defence on the status of the Vigilare project; whether the first command and control system was still expected to be installed and operational in Tindal by early 2009 or whether Boeing was still struggling to deliver this capability on time. Defence replied:

Vigilare's initial operational capability, represented by conditional acceptance of the Northern Regional Operations Centre at RAAF Tindal, is currently planned to be provided to the RAAF in April 2010. Boeing commenced installation at the Northern Regional Operations Centre in May 2008.

Vigilare's final operational capability, represented by conditional acceptance of the Eastern Regional Operations Centre at RAAF Williamtown, is currently planned to be provided to the RAAF in June 2011.

Progress on the project has been slower than all parties anticipated, but the criteria for the first few major milestones have been satisfied. The dates depend on the current schedules being met for other new and existing systems to which Vigilare is required to interface. ¹⁰¹

⁹⁹ Defence Annual Report 2006-2007, Volume 2, p. 23.

¹⁰⁰ Department of Defence, Defence Annual Report 2006-2007, Volume 2, p. 50.

¹⁰¹ Department of Defence, Submission No 10, p. 10.

Australian Industry Capability

2.84 In discussion with the Committee, Defence stated that a large portion of some of the cash flow slippages in 2006-2007 were '...directly attributable to industry capacity constraints', with industry not being able to meet the demand increase.¹⁰²

2.85 The program to replace the F/A-18 centre barrels is a good example to highlight this issue. Current arrangements are seeing Australia's F/A-18 Aircraft shipped to Canada for centre barrel replacements. As Defence had been aware at least four years ago of the need for this maintenance, the Committee queried what had been done to develop industry capacity for this to be carried out in Australia.¹⁰³ Defence responded that:

...in DMO we did a lot to try and develop that capability in Australia. We worked over several years over that period with both Boeing and BAE, as the major industry presence at the Williamstown site, to try and collectively bring both those companies' resources to bear on the problem, because neither one of them at the time could individually cater for the volume of work that was required. So we actually spent several years working in partnership with those companies trying to establish a commercial proposition to start that work in Williamstown.¹⁰⁴

It is not just a matter of stripping down the aircraft, pulling it apart and putting it back together again... [There were] factors that both industry and DMO took into account when we were determining whether we could set this work up in Australia, because that was our aspiration. We collectively determined that we could not do it without significant risk, and we were not prepared to take that risk on when there was a viable alternative.¹⁰⁵

2.86 In the case of the F/A-18s, ultimately only 10 centre barrel replacements were required, which would not have justified the required investment to establish such an operation in Australia.¹⁰⁶

102 Dr Stephen Gumley, *Transcript 29 August 2008*, p. 15.

103 Air Vice Marshal Rossiter, *Transcript 29 August 2008*, p. 13.

104 Air Vice Marshal Rossiter, *Transcript 29 August 2008*, pp. 13-14.

105 Air Vice Marshal Rossiter, *Transcript 29 August 2008*, p. 14.

106 Air Vice Marshal Rossiter, *Transcript 29 August 2008*, p. 15.

- 2.87 The Committee though, remained concerned about the level for support of defence industry capacity in Australia.

... the question of support for industry capability and avoiding what seems to be the plague of the Australian defence industry – namely, peaks and troughs – what is the approach that DMO takes in respect of that? ¹⁰⁷

- 2.88 Defence commented:

We monitor the health of industry fairly carefully to ensure that there is enough work to keep everyone busy. As far as we can work out, the defence industry in Australia has been growing at about four or five per cent in capacity in real terms in each of the last four years. Each time we attempt to provide more demand than that, we find that the products do not flow. At the moment we are in a very firm demand period and we are not seeing any spare capacity around the industry as a whole.¹⁰⁸

Clearly, it is in everybody's interests to level load demand as much as possible, and those sorts of questions are part of the industry capacity deliberations that are in the White Paper. It is not productive for DMO either to ask for too much demand and then fail to be able to supply or to do it the other way. Level loading is important to us.¹⁰⁹

- 2.89 Defence informed the Committee that their strategy is moving towards becoming part of global supply and support chains, for example by investing over one million hours of engineering expertise in the new JSF platform.¹¹⁰

- 2.90 Defence also discussed the consideration given to industry capacity in future project planning:

On the maritime projects, we have mapped out the demand for skilled labour on each of the projects out to about 2030. It reaches a peak in about 2012 or 2013, as the air warfare destroyer is at maximum build rate. There is a bit of a gap in 2016 and 2017. Then it builds again towards the latter part of the next decade.

107 Hon Arch Bevis MP, *Transcript 29 August 2008*, p. 15.

108 Dr Stephen Gumley, *Transcript 29 August 2008*, p. 15.

109 Dr Stephen Gumley, *Transcript 29 August 2008*, p. 17.

110 Air Vice Marshal John Harvey, *Transcript 29 August 2008*, p. 16.

There is some work to be done in the latter part of the next decade to try and get better level loading. And it is being duly considered. We have been thinking about it very intensively over the last six months.¹¹¹

Recommendation 1

That subject to national security requirements, the ADF and Government schedule large acquisitions in a sustainable manner over time, to avoid peaks and troughs for Australian industry and to better provide a long-term through-life support capability.

- 2.91 The Committee queried the feasibility of Australia developing an export industry around light and heavy armoured vehicles.¹¹² Defence observed:

It is about having the continuity so that you can maintain that particular industry in the long term. We are actively working with the defence export unit to export the Bushmasters. We are doing everything we possibly can ... It is difficult to crack the international export market for these types of vehicles. Bushmasters are very capable vehicles, and we are trying to support Thales as to their export opportunities as much as we possibly can. But, as you have said, we have only been marketing and selling them in small numbers.¹¹³

Leading Edge Customer

- 2.92 During the discussions surrounding DMO's Top 30 Projects, the Committee raised concerns that first customer/first of type development projects exhibit substantial slippage problems.¹¹⁴

Should we as a nation be first customer/first of type in what we do and what we procure or should we perhaps be looking at things like the MRH-90, where we are the second customer?¹¹⁵

111 Dr Stephen Gumley, *Transcript 29 August 2008*, p. 17.

112 Hon Ian Macfarlane MP, *Transcript 29 August 2008*, p. 32.

113 Mr Kim Gillis, *Transcript 29 August 2008*, p. 32.

114 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 20.

115 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 18.

2.93 Defence replied:

The sweet spot is to be just behind the curve. It is no good being right down the back of the queue because you end up with obsolete equipment. The sweet spot is one or two years behind the lead customers.¹¹⁶

2.94 The Committee asked what DMO is doing to ensure that Australia is 'one behind the curve, as opposed to first customer/first of type.'¹¹⁷

2.95 Defence replied:

A good example ... was the Air Warfare Destroyer decision. There was a competition, effectively, between an evolved ship – which is a nice way of saying a brand-new ship that has never been built before – and an existing ship where you just do the absolutely necessary, but no more than necessary, Australian modifications. When they looked at the risk profile, the government chose the existing ship based on the Spanish F105, because the Spanish have already built five of them. We were coming in as second customer. There will be some technical problems on the AWD, but there is nowhere near the risk you might have been taking on if you had been lead customer with a ship that had never been built before. The LHD [Landing Helicopter Dock] is another example. We are second customer there, rather than first customer. [The LHD] is the big amphibious ship.¹¹⁸

2.96 The Committee further enquired:

Will you be recommending to government, based on your comments there, that we go with second customer status, that we go with embedding staff within project teams as much as possible, and that first customer/first of type should be a last resort?¹¹⁹

2.97 Defence replied:

There are some technologies for which, just from the sheer capability point of view, you might want to be right up the front. But my strong preference is not to be that lead customer

116 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 18.

117 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 18.

118 Dr. Stephen Gumley, *Transcript 10 July 2008*, pp. 18-19.

119 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 19.

unless you walk in with your eyes wide open to the risk profile that you are truly taking on. The same applies in other sectors of the economy. It's not just in Defence. When you go first you are taking on very substantial technical and contractual risk.¹²⁰

2.98 The Committee notes the comments by Dr. Gumley and concurs with his assessment that the ADF should only take on lead customer status when it is essential to do so.

2.99 Apart from Project Wedgetail, the Committee enquired whether there were 'any other first customer/first of type projects on the DMO's [Top 30] project list, especially in the developmental space?'¹²¹

2.100 Defence replied:

The Armidale class patrol boat was an indigenous, designed in Australia, first of class, never been built, 56-metre vessel delivered on schedule and on budget ... a great result.¹²²

Nor should we leave the impression that everything Boeing does is unsuccessful. If you look at the C-17 Heavy Airlift Aircraft, that is a hugely successful project ... four C-17s in service now, on time, on budget.¹²³

2.101 Confirming the category of each of the projects on the Top 30 list, Defence referred the Committee to Table 3.2 on page 21 of Volume Two of the Defence Annual Report 2006 – 2007:

- The Globemaster C-17 [AIR 8000] is off-the-shelf.
- The F18 Hornet Upgrade [AIR 5376 Phase 2] is an integration project where you get the kit from overseas, but clearly you have to get the wiring and do everything yourself locally, so I put that into integration.
- The next F18 Hornet project [AIR 5376 Phase 2.4] is also integration, as is the third one – the structural refurbishment [AIR 5376 Phase 3.2]. I should point out that all of the F18 Hornet projects are going well.
- For the ADF air refuelling capability [AIR 5402] we are a lead customer. At the moment we are suffering about a five-month delay.
- The MRH [AIR 9000 Phase 2] is off the shelf.

120 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 19.

121 Mr Stuart Robert MP, *Transcript 10 July 2008*, p. 20.

122 Mr Kim Gillis, *Transcript 10 July 2008*, p. 21.

123 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 21.

- We have pretty much found ourselves as the lead customer with regard to the Tiger [AIR 87 Phase 2], although we did not start as the lead customer.
- We [were] the lead and only customer with regard to the Seasprite [SEA 1411].
- We are the lead customer with regard to Wedgetail [AIR 5077 Phase 3].
- AWD [SEA 4000 Phase 2] is an off the shelf design, but it is an integration project, so we have lowered the risk.
- Aegis Combat System [SEA 4000 Phase 3.1] is off the shelf.
- Armidale Class Patrol Boats [SEA 1444] we are the lead customer there, but it is more of a commercial design.
- FFG [SEA 1390 Phase 2] is somewhere between an integration project and a lead customer.
- The SM1 Missile replacement [SEA 1390 Phase 4B] is off the shelf.
- For a long time now we have been the lead customer for the Anzac Ship project [SEA 1348 Phase 2].
- Anti-Ship Missile Defence [SEA 1348 Phase 2A] is lead and technological high-risk.
- The replacement integrated torpedo system [SEA 1429 Phase 2] is off the shelf using an American torpedo.
- The Collins class reliability [SEA 1439 Phase 3] is lead customer. We are in fact the only customer, because we have got a unique design.
- The replacement combat system [SEA 1439 Phase 4A] is off the shelf. It is the American combat system that we have to integrate into the submarine.
- The Main Battle Tank Replacement Project [LAND 907] is off the shelf and on time and on budget. It is low risk and is going well.
- We are a lead customer on the M113 Armoured Vehicles [LAND 106] and we dropped about \$100 million of spend because the braking system did not work and it took a year for the technological issues around the braking system to be proved. That project is back on track ... but it did go through the lead customer process.
- We are lead customer on Project Bushranger [LAND 116 Phase 4].
- The Echidna Project [AIR 5416] is integration.
- The lightweight torpedo project [JP2070 Phase 2] is an integration project. We have got some difficulties on that – in the integration. We are off the shelf for the actual torpedo itself.

- Explosive ordnance reserve stock [JP 2085] is off the shelf.
- Jindalee [JP 2025] was lead customer.
- Vigilare [AIR 5333] was lead customer and only customer.
- Amphibious maritime support [SEA 1654] is a combination of off-the-shelf and integration.
- The Joint Strike Fighter [AIR 6000] is a development project now, but it will be off the shelf by the time we get around to taking aircraft.¹²⁴

2.102 The Committee noted that about half of the DMO's Top 30 projects are either lead customer or integration-type projects. It is also noted that the greatest funding variations/slippages occur in these types of projects. While DMO recognise that being lead customer for leading edge projects is indeed high risk, the Committee expects DMO to provide more accurate spending calculations when determining budget estimates.

Managing Risk and Training Project Managers

2.103 In response to the Committee's concerns, DMO highlighted some of the measures it has since introduced to more effectively recognise and manage risk and also ensure value for money.

The corollary of all that is that you need a commercially savvy, strong and intervening Defence Materiel Organisation or the equivalent in other countries, to manage the buyer's risks intensively.... To manage what I call that massive amount of residual risk that always stays with the Commonwealth, what DMO is doing is building up the professionalism of our staff in contracting, engineering and program management. Only by having a cadre of about 2,000 experienced professional people are we really going to be able to manage the risk properly for the Commonwealth.¹²⁵

We are leading the world in the development of training for very high-end project managers. We have developed with the Queensland University of Technology the first ever advanced executive masters program in complex project management, which is now the world leader. That was as a result of one of the lessons learnt, which was that managing these very high-

124 Dr. Stephen Gumley, *Transcript 10 July 2008*, pp. 40-41.

125 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 12.

end projects is a very high level skill. You need very special people to run those types of programs. We need to make sure that we train them as best we possibly can. These people are dealing in billions of dollars of taxpayers' money and we need to make sure that we have the best possible people running those particular jobs.¹²⁶

Procurement Issues

- 2.104 The Committee commented on the importance of DMO negotiating up front, a clear arrangement with the respective service, prior to commencing any acquisition program, and sought DMO's comments on this aspect.¹²⁷ Defence replied:

Having just recently worked as the program manager for the LHD [Landing Helicopter Dock] program, we had two years of consultation with Navy, Army and Air Force to ensure that the certification baseline for those ships was absolutely documented down to the condition of the PA speaker in the second level being assessed at a particular standard by a particular person for the first vessel, not the second, and that would be acceptable, and that was signed off by 11 signatories with the services.

The difficulty we have with a legacy program, like FFG, was that the documentation of the acceptance process ... was not as clear as it should have been. One of the things that we have increased and we have improved significantly is to ensure that the documentation about what DMO as an organisation actual have to deliver through capability development to the Services is documented as best that we can at the time prior to contract, which is part of the Kinnaird two-pass process. We actually have documented tender quality pricing with detailed processes in respect of acceptance because that is what industry wants. Industry wants clarity of exactly what they have to deliver to us. So there was a three-way process between industry, DMO and the [Defence] organisation. But

126 Mr Kim Gillis, *Transcript 10 July 2008*, p. 13.

127 Hon Arch Bevis MP, *Transcript 10 July 2008*, p. 36.

also with capability development there is the broker to ensure that everybody was clear about the requirements.¹²⁸

- 2.105 The Committee asked how a piece of equipment enters service, using a ship as an example. Defence explained the process:

The Navy has a ship acceptance certificate, T1338. When the contractor believes they can offer a contractually compliant product there is a formal offer. There is a disclosure of everything we know about the state of the ship and its systems, trial cards, problems and bugs. There is never 100 per cent full compliance of every requirement and contractual issue. We then go into the 'so what' analysis about the significance of those issues and we make resolutions as to what issues have to be resolved by the contractor at their expense post-delivery; what needs to be resolved by DMO and what other issues need to be resolved by Navy. They are in various categories which are risk-based and a number of them are focused in the safety regime. It is all about assessing that fitness for service. The T1338 is then the basis for us saying to Navy: 'We want you to consider this for operational release or initial operation release'. The T1338 set of certificates is supplemented by a bunch of other assessments made by Navy and specifically by the RAN Test Evaluation and Acceptance Authority. Recommendations are taken by Director-General Navy Certification Safety and Acceptance [then] go to Chief of Navy and present a case. We say 'This is what you have; these are the risks; these are transitional measures proposed by the contractor, DMO and Navy'.¹²⁹

- 2.106 The Committee observed that while significant improvements have been made in this regard, they were surprised that the Services still had the absolute right to refuse delivery of a platform, even after DMO had either signed off, or substantially signed off, on contract compliance.¹³⁰

128 Mr Kim Gillis, *Transcript 10 July 2008*, p. 36.

129 Commodore Andrew McKinnie, *Transcript 10 July 2008*, pp. 36-37.

130 Senator Mark Bishop, *Transcript 10 July 2008*, p. 37.

2.107 Defence replied:

The way to get it right is to make sure that the original specification is correct ... then there will not be a dispute at the back end.¹³¹

Industry is only required to deliver what is in the contract. It would be unconscionable of us to ask industry to do more than that.¹³²

With a 10-year project, it is possible that ... military technology [requires] you to do something to upgrade your platform as you are bringing it into service. The correct way of doing it is probably a new project fully open and visible to everybody, fully costed, and you work on it then. Of course, we did that with the Collins submarine. The contract went for many years and then there was a subsequent project – SEA1439 – which was to bring it up to the next level of capability.¹³³

An example of the improvements is that we were able to recently deliver a replacement to HMAS *Westralia* actually ahead of schedule and under budget and Navy accepted. Tenix, who delivered the vessel, was paid a bonus for delivering ahead of schedule and actually meeting all their criteria, but there were a number of items that we had to improve and work with Navy on. Navy accepted the ship and the ship is in operation. There are still some things that were outstanding that we are resolving even today.¹³⁴

2.108 The Committee raised its concerns with Defence, questioning the fairness to tenderers when Defence specifications may still be evolving during the contract negotiation stage with a preferred tenderer and even after contract signature, which may require new tenders in order to meet the altered specifications. In the case of Project Overlander (LAND 121):

...the company spent the time, effort and money submitting a tender to the specification you had out there at that stage, it had been successful at that stage and then the specification changed. What compensation are you paying to industries

131 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 37.

132 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 35.

133 Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 37.

134 Mr Kim Gillis, *Transcript 10 July 2008*, p. 37.

that spend money and time developing tenders only to have those specifications changed so that they cannot compete? ¹³⁵

2.109 Defence replied:

For Defence contracting as a whole, we do not pay tenderers' costs – this has been well established over a long time. However, in this particular circumstance [the medium and heavy weight trucks in the LAND 121 Project], we are offering those who wish to retender, some monetary assistance to help them with their tendering costs and, in particular, their test and evaluation costs.¹³⁶

Cost-cutting

2.110 As part of the Government's whole-of-government savings program, Defence advised that 5 per cent of savings is being offered across the DMO sustainment budget (\$230m from a \$4.5b budget). Savings will be derived from industry, from the service fee area, and from the acquisitions area. ¹³⁷

Reallocation of Funding

2.111 In July 2008, the United Kingdom House of Commons' Committee of Public Accounts published a report titled "Ministry of Defence: Major Projects Report 2007". ¹³⁸ The Report was quite critical of UK Defence spending, particularly concerning major project slippages and the subsequent reallocation of funding. Defence were requested to comment on whether the same criticisms could be applied to the ADF. Defence replied:

The report made seven conclusions and recommendations, of which three directly related to specific UK projects or processes and therefore are not relevant to the DMO. The remaining four could be viewed as having applicability to

¹³⁵ Hon Bob Baldwin MP, *Transcript 29 August 2008*, p. 34.

¹³⁶ Dr Stephen Gumley, *Transcript 29 August 2008*, p. 34.

¹³⁷ Dr. Stephen Gumley, *Transcript 10 July 2008*, p. 13.

¹³⁸ United Kingdom House of Commons' Committee of Public Accounts Report *Ministry of Defence: Major Projects Report 2007* dated 22 July 2008.

Australia. The UK report's major criticisms centred on cost shifting and therefore placing increasing burdens on non-project budgets to absorb these transferred costs.

Post Kinnaird and the introduction of the Two Pass process, the DMO has demonstrated, backed up by Mark Thomson from ASPI's analysis in his 2008-09 Budget Brief, that project costs post-Second Pass overall are within about 98 per cent of project approval value when corrected for foreign exchange, inflation, changed quantities, and scope. Pre-Second Pass cost estimation remains problematic for Defence, given the uncertainty over the type and number of capabilities required in the future and the future environment in which they will operate.

The Two Pass process, and associated Net Personnel and Operating Costs process, ensures that all areas within Defence are engaged in the development and assessment of project costs and ongoing operating costs. Therefore, the criticisms of the UK Defence process could not be said to be a concern in the Australian context.¹³⁹

Conclusion

- 2.112 DMO is a complex and diverse organisation that has undergone significant change since the Kinnaird Review¹⁴⁰ was released in 2003. Both Defence and DMO have undertaken a considerable amount of work to remediate and reform their practices and to implement the recommendations in the Kinnaird Review.
- 2.113 The Defence Sub-Committee acknowledges the report released in August 2008 by the Joint Standing Committee on Public Accounts and Audit titled *Progress on equipment acquisition and financial reporting in Defence*.¹⁴¹ This report analyses the progress made by DMO since the Kinnaird Review. The Government response to this Report is due in November 2008.

¹³⁹ Department of Defence, Submission No 10, p. 14.

¹⁴⁰ Defence Procurement Review 2003

¹⁴¹ Joint Standing Committee on Public Accounts and Audit, Report 411

- 2.114 The Defence Sub-Committee also acknowledges the recent Defence Procurement and Sustainment Review (the Mortimer Review 2008).¹⁴² The Review evaluated DMO's progress made under the Kinnaird reforms and examined current acquisitions and sustainment processes. This review has made a number of key recommendations to Government. The Review was still under consideration when this Report was drafted.
- 2.115 Both of the above documents are of interest to the Committee and will inform future briefings and hearings.

¹⁴² Defence Procurement and Sustainment Review 2008