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Foreign Affairs, Defence and Trade
References Committee

Procurement procedures for Defence
capital projects

Final Report

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Acronyms and Abbreviations

ACAT	Acquisition Category
ADF	Australian Defence Force
ADTEO	Australian Defence Test & Evaluation Office
ADO	Australian Defence Organisation
AEW&C	Airborne early warning and control
ANAO	Australian National Audit Office
APS	Australian Public Service
ARDU	Aircraft Research and Development Unit
ARH	Armed Reconnaissance Helicopter
ASLAV	Australian Light Armoured Vehicle
ATS	Apprentice Training School
AWD	Air Warfare Destroyer
CAB	Cost Analysis Branch, CIR Division, Capability Development Group
CABSUB	Cabinet Submission
CCDG	Chief, Capability Development Group
CDAF	Capability Development Advisory Forum
CDB	Capability Development Board
CDD	Capability Definition Document
CDF	Chief of the Defence Force
CDG	Capability Development Group
CDS	Chief Defence Scientist
CDSG	Capability Development Stakeholder Group
CEO	Chief Executive Officer

CGRB	Capability Gate Review Board
CIOG	Chief Information Office Group
CIR Div	Capability Investment and Resources Division
CM	Capability Manager
CN	Chief of Navy
COTS	Commercial-off-the-shelf
CPSP	Capability Proposal Second Pass
CS Div	Capability Systems Division, Capability Development Group
CTD	Capability and Technology Demonstrator
DAO	Defence Acquisition Organisation
DER	Defence Efficiency Review
DCC	Defence Capability Committee
DCDH	Defence Capability Development Handbook
DCIC	Defence Capability and Investment Committee
DCM	Defence Capability Manual
DCP	Defence Capability Plan
Defence	Australian Defence Organisation
Department	Department of Defence
DMO	Defence Materiel Organisation
DPG	Defence Planning Guidance
DPPM	Defence Procurement Policy Manual
DSTO	Defence Science and Technology Organisation
DWP	Defence White Paper
EWG	Environmental Working Group
FDA	Force Development and Analysis Division

FFG	Guided Missile Frigate
FIC	Fundamental Inputs to Capability
FMS	Foreign Military Sales
FOC	Final Operational Capability
FSR	Force Structure Review
GAO	Government Accountability Office (United States)
HCS	Head Capability Systems
HMAS	Her Majesty's Australian Ship
ICDS	Initial Capability Definition Statement
IPPO	Independent Project Performance Office
IPT	Integrated Project Team
JASSM	Joint Air-to-Surface Standoff Missile
JCPAA	Joint Committee of Public Accounts and Audit
JSCFADT	Joint Standing Committee on Foreign Affairs, Defence and Trade
JSF	Joint Strike Fighter
LHD	Landing Helicopter Deck
LOR	Letter of Request
MAA	Materiel Acquisition Agreement
The minister	Minister for Defence
MINSUB	Ministerial Submission
MOTS	Military-off-the-shelf
MPR	Major Projects Report
MRH	Multi-Role Helicopter
MRTT	Multi Role Tanker Transport
MSA	Materiel Sustainment Agreement

NPOC	Net Personnel and Operating Costs
NSC	National Security Committee of Cabinet
NT	Northern Territory
OEM	Original Equipment Manufacturer
ORC	Options Review Committee
OTS	Off-the-shelf
PICs	Priority Industry Capabilities
PMP	Project Management Plan
PPP	Public Private Partnerships
Joint PD	Joint Project Directive
POC	Personnel and Operating Costs
POCD	Preliminary Operational Concept Document
PSTA	Project Science and Technology Advisor
RAAF	Royal Australian Air Force
RAN	Royal Australian Navy
RFI	Request for Information
RFP	Request for Proposal
RFT	Request for Tender
RPDE	Rapid Prototyping, Development and Evaluation Program
SADI	Skilling Australia's Defence Industry
SIC	Strategic Industry Capability
SLEP	Service Life-Evaluation Program
SME	Small and medium enterprise
SPO	System Program Office
SRP	Strategic Reform Program
S&T	Science & Technology

STA	Sonartech Atlas
T&E	Test and Evaluation
TCD	Test Concept Document
TRA	Technical Risk Assessment
TRC	Technical Risk Certification
TRI	Technical Risk Indicator
UK	United Kingdom
US	United States of America

Executive summary

Defence's projects for acquiring major capital equipment face an array of internal and external forces and influences that create significant difficulties for the organisation. Indeed, such projects are of a scale and complexity that they present 'formidable and ever-increasing challenges'. The problems identified in defence procurement, however, are largely a function of the organisation's own making—unintentionally self-inflicted. In effect, Defence has a flawed management structure that stymies the work of dedicated, professional and in many cases highly skilled personnel.

Current management structure

The committee finds that the current management structure in Defence has produced an organisation that lacks a robust risk management regime: an organisation where its personnel are insensitive or unresponsive to risk, where no one owns risk. Defence is also an organisation that seems incapable of learning from past mistakes. This inability to learn from earlier project mishaps is particularly salient. Senior officers in Defence may well argue that the failures noted in this report are drawn from history: but if the organisation cannot or will not apply lessons from previous projects to current and future ones then it is destined to repeat them. The challenge for Defence is to change an organisational structure with entrenched attitudes that despite repeated reforms has:

- a growing disconnect between strategic guidance and capability development with the current foundation document—the 2009 Defence White Paper—setting an unrealistic and unachievable acquisition program for the Australian Defence Force's (ADF) future capability;
- a culture of non-compliance with policy and guidelines; where personnel get 'bogged down' with too much paper work, produce a 'certain amount of nugatory work' and 'miss the important things going on';
- confused or blurred lines of responsibility;
- accountability that is too diffuse to be effective—the organisation is unable or unwilling to hold people to account;
- a poor alignment of responsibility due to an excessive number of groups and agency functions, which gives rise to unhealthy management and organisational relationships—for example capability managers sidelined from active participation in an acquisition;
- little understanding or appreciation of the importance of contestability and a mindset that simply cannot, or refuses to, comprehend the meaning of 'independent advice';
- a 'One Defence' view that does not produce an integrated enterprise: Defence remains an organisation composed of separate groups working to their own agendas;

- difficulty attracting and retaining people with the required level of skill and experience to support acquisition activities, particularly engineering, which over the past 15 years or more has atrophied most notably with the hollowing out of technical skills in Navy; and
- yet to engage actively with industry as a collaborative partner in capability development and acquisition and to achieve the status of intelligent customer.

Need for structural reform

The recommendations in this report take account of Defence's attempts to remedy shortcomings. They also recognise that Defence has made efforts to change while simultaneously attempting to comply with multiple reform agendas arising from a string of government reviews and directives. The key recommendations deal with much needed organisational change directed at achieving the correct alignment of responsibilities and functions of relevant agencies, and providing them with the skills and resources they need to fulfil their obligations. They underscore the importance of Defence becoming a self critical, self evaluating and self correcting organisation. More specifically, the recommendations are intended to:

- return responsibility to capability managers, including for financial management, and make them accountable for decision-making and performance under their areas of authority;
- make the Defence Materiel Organisation (DMO) a streamlined and specialist acquisition agency;
- inject real contestability into decision-making and guarantee that the government is provided with independent advice from key agencies—Defence Science and Technology Organisation (DSTO), DMO and technical experts; and
- ensure that Defence's focus is on obtaining the right people with the right skills and experience and, importantly, matching their skills with the right job: that Defence also manages its skills base so that agencies complement their skill requirements and do not compete from the same pool of specialists.

New management model

The committee proposes a model that, after second pass decision, allocates one single point of accountability for every project to the relevant capability manager, supported by financial delegation and budget control. It reduces the role of the Capability Development Group (CDG) and DMO—producing savings and eliminating much overlap. It also reinforces the Kinnaird/Mortimer concept for internal independence for the purposes of genuine contestability, and minimises the waste of skill through inappropriate placement, duplication and misalignment of skills. The committee's proposal also introduces a direct client/provider model with precise accountability and without any intermediaries. Under this model, the DMO would become a contract and project management specialist supporting the capability manager at relevant points in the acquisition and sustainment cycles.

This model would remove the unnecessary layers of current vested interests and streamline the process through a single point of accountability. In short, it is a greatly simplified model aided by significant streamlining. It builds on the strengths of accountability in the services (as identified by the Black Review) and seeks to harness the learning and potential for alignment across the three services envisaged with the creation of the Defence Acquisition Organisation (DAO) and DMO.

Recommendations

Realignment of responsibilities

Recommendation 1— Strategic Policy Division

paragraph 8.63

The committee recommends that all matters concerning strategic planning, capability planning, industry policy, costing and all matters for the coordination of contestability from DMO, DSTO and industry should remain with the current Strategic Policy Group and CDG in combination.

Recommendation 2—Capability Managers

paragraph 8.64

The committee recommends that accountability for all service specific procurement items should be exclusively transferred with budgets to service chiefs, who should be responsible for all procurement and sustainment of their materiel. This transfer of responsibility occurs after proposals have been thoroughly tested internally and externally and after government decisions are made at second pass.

Recommendation 3—DMO and CDG

paragraph 8.65

The committee recommends that the capability manager should have expanded responsibility and importantly financial responsibility after second pass. Under the committee's recommended model, for all acquisition projects, the capability manager would be the sole client with the contracted suppliers; DMO's role being limited to tendering, contracting and project management specialities, strictly according to the terms of the second pass decision. All specification changes should be monitored by CDG and put to government for agreement, as currently the practice, with the capability manager to be fully accountable.

Recommendation 4—CDG

paragraph 8.66

The committee recommends that all matters of coordination, overall budget management monitoring and reporting after second pass should remain in the current CDG, but without budgetary control.

Contestability and independence

Recommendation 5—mandatory gate reviews

paragraph 10.77

The committee notes concern about the gate reviews losing their potency and simply becoming part of the process if overused. The committee believes an annual gate review for major projects would add value but recognises that the format and/or structure may need to be scaled to suit project scope/cost. The committee recommends that full gate reviews be:

- mandatory for major projects at the following specified milestones—Defence Capability Plan (DCP) entry; project initiation and review board consideration; first pass approval; second pass approval, contract solicitation and contract negotiation; and
- mandatory when a project starts to diverge from original cost or schedule or when significant changes to scope are proposed.

Recommendation 6—gate reviews and compliance

paragraph 10.78

In light of revelations about breaches of policy such as chairs of boards having line management responsibility and of misunderstandings stemming from the documentation provided to the gate review boards, the committee recommends further that the Independent Project Performance Office (IPPO):

- exert stronger compliance checks to guarantee the independence and impartiality of the gate review board particularly enforcing the requirement that the chair of the board must not have line management responsibility for the project under review; and
- exercise greater scrutiny of the documentation provided to the review board to ensure that it is relevant and complete including reports on technical risk.

To ensure that the IPPO has the authority and resources to discharge its functions, the committee further recommends that Defence consider carefully whether the functions of the Office should be located in CDG or another agency.

Recommendation 7—gate reviews and monitoring

paragraph 10.79

With regard to ensuring that the recommendations of the review boards are implemented, the committee endorses the Australian National Audit Office's recommendation that 'Defence ensures that a control mechanism be deployed to monitor the status and completion of actions recommended by Gate Review Assurance Boards and agreed by the relevant executive'.¹

1 ANAO Audit Report No 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 4.21.

Recommendation 8—DMO and Minister's directive

paragraph 10.82

The committee recommends that the minister review, update and reinstate the Ministerial Directive to CEO DMO. The directive is intended to set boundaries and expectations and establish clear accountability for achievement of Defence capital acquisition programs. It should include the requirement that CEO DMO provides independent advice to the minister in DMO's specialist area of major capital projects.

Recommendation 9—DMO's independence

paragraph 10.83

The committee recommends that the government should again look carefully at making DMO a statutorily independent agency, as previously recommended by Kinnaird and Mortimer, but rejected by Defence and government. The CEO's salary should be set by the Remuneration Tribunal and, as stipulated in the previous recommendation, direct access to the minister should be restored pursuant to a reinstatement of a ministerial directive which has fallen into disuse. The intention behind this recommendation for the DMO to be a statutory agency is to find a better way to: guarantee DMO's independence and assist it to provide frank advice to government, have its functions and responsibilities spelt out in legislation, and allow it more latitude to employ specialist personnel.

Recommendation 10—DSTO's independent advice

paragraph 10.84

The committee recommends that the minister consider how best to ensure that DSTO's specialist advice on technical risk associated with Defence's major capability developments are conveyed to government in a clear and accurate way. The Ministerial Directive to CEO DMO may serve as a model.

Recommendation 11—DSTO and risk assessments

paragraph 10.85

The committee recommends that the Technical Risk Assessments and Technical Risk Certifications (currently presented to the Defence Capability Committee and the Defence Capability and Investment Committee) should be a joint activity overseen by the relevant Service test and evaluation (T&E) agency head and the Chief Defence Scientist. In light of past underestimation of technical risk, the intention would be to review past experiences and current documentation to determine how risk assessments could be better presented to non-technical experts to minimise the opportunity for risk assessments to be misinterpreted. The reporting structure also needs to be transparent such that assessments cannot be ignored without justification to the key decision-makers (e.g. minister).

Skilling Defence

Recommendation 12—Strategic Policy group

paragraph 11.93

The committee recommends that Strategic Policy Group and CDG should have more strategic analytical skills to test rigorously and independently the capability managers'

development of the Defence White Paper capability elements, restoring the creative tension but free of competition for skills.

Recommendation 13—Capability Managers *paragraph 11.94*

The committee recommends that, after second pass, capability managers have sole responsibility for acquisition projects, supported by staff seconded through the DMO, as well as maintaining relationships with contractor and sub contractors.

Recommendation 14—DMO *paragraph 11.95*

The committee recommends that the government ensure that the DMO has the funds, means and government support necessary to consolidate and build on the efforts already underway to develop its multidiscipline skills base with the ultimate goal of achieving a world-class acquisition community.

Recommendation 15—Streamlining *paragraph 11.96*

The committee recommends most strongly that the organisational changes specified in the recommendations dealing with skills be adopted, and that the streamlining and consolidation of skills identified be the primary focus and outcome in securing that change.

Future submarines SEA 1000

Recommendation 16—Early planning and analysis *paragraph 3.20*

Because the future submarine project is still at an early stage, and based on the RAND study, the Coles Report, independent defence analysts and the past performance of major Defence acquisition projects, the committee recommends that government and Defence start work immediately to:

- ensure that the program is directly managed by the Chief of Navy supported by the ASC and DMO where relevant, the scientific community and the public—support must be both external to the program and internal within the navy and submarine community;
- avoid early lock-in through premature weapons systems choices;
- ensure that the capability sought is available and minimises developmental risks;
- take drastic action to address the serious skill shortages identified by RAND before a decision on assembly in Australia is made, regardless of type and design;
- ensure that the program is open and transparent—full disclosure throughout the program is necessary to obtain government, industry and public support;
- involve experienced people in key management positions—this requires a strategy to grow people so they are experienced in various disciplines—a top-

level strategic lesson must be implemented far in advance of any specific program; and

- listen to technical community concerns about risk—the technical community, supplemented by outside expertise from industry and allied technology partners as necessary, should understand the state of technology and the degree to which a new design extends that technology.²

Recommendation 17—applying lessons

paragraph 3.22

The committee recommends that government and Defence respond publicly to the committee's criticisms made in this report with respect to lessons not learnt, and outline the detailed process and all the options on which current planning on submarines is taking place.

AIR 8000 Phase 2 (Battlefield Airlift—Caribou replacement)

Recommendation 18—Statement of Operational Requirement

paragraph 15.62

The committee recommends that the Chief of Air Force as the relevant capability manager require a report by the relevant test and evaluation (T&E) agency against the approved Statement of Operational Requirement to provide early identification of potential issues with the AIR 8000 Phase 2 project that could delay introduction into service.

Capability development and public information

Recommendation 19—2013 White Paper

paragraph 3.65

The committee recommends that the 2013 White Paper is prepared in such a way that all procurement proposals are costed and scheduled realistically and that Defence undertake comprehensive consultation with industry before decisions on inclusion are made, or alternately, a green paper is issued in advance for broader and open public consultation.

Recommendation 20—DCP

paragraph 3.66

The committee recommends that, commencing next financial year, Defence publishes as an addendum to its portfolio budget statements, all the current financial detail of planned capability from the time of inclusion in the DCP, right through to contract completion and provision for sustainment, for all projects over \$30 million for total procurement and lifelong sustainment.

2 A number of the recommendations are taken from, or based on, RAND, *Learning from Experience, Volume IV, Lessons from Australia's Collins Submarine Program 2011*, pp. xiii–xiv.

T&E—building capability

Recommendation 21—creating opportunities

paragraph 12.51

The committee recommends that the government make a long-term commitment to building technical competence in the ADF by requiring Defence to create the opportunities for the development of relevant experience.

Recommendation 22—T&E and DSTO pre-first pass

paragraph 12.52

The committee recommends that capability managers should require their developmental T&E practitioners to be an equal stakeholder with DSTO in the pre-first pass risk analysis and specifically to conduct the pre-contract evaluation so they are aware of risks before committing to the project.

Recommendation 23—policy and implementation

paragraph 12.54

The committee recommends:

- the immediate finalisation of central defence policy on T&E to be implemented by capability managers in line with the committee's recommended shift of full accountability for capability managers for all technical assessment of capability procurement and sustainment (independently assessed in conjunction with DSTO);
- full responsibility for the implementation of prescribed T&E processes be assigned to capability managers for all procurement activity from inception through to acquisition and sustainment; and
- each capability manager should ensure adequate skilled resources to oversee all T&E activity in line with central policy, as part of all acquisitions, including MOTS, as part of the capability managers' total responsibility for procurement, but prior to as well as after second pass.

Recommendation 24—training and experience

paragraph 12.55

The committee recommends that Defence build on the capability already extant in aerospace to identify training and experience requirements for operators and engineers in the land and maritime domains and apply these to the Australian Defence Test and Evaluation Office. Capability managers will need to invest in a comparable level of training to enable their personnel to conduct (or at least participate in) developmental testing. The intention is to provide a base of expertise from which Defence can draw on as a smart customer during the first pass stage and to assist in the acceptance testing of capability.

Recommendation 25—pre-first pass T&E

paragraph 12.56

The committee recommends that Defence mandate a default position of engaging specialist T&E personnel pre-first pass during the project and on acceptance in order to stay abreast of potential or realised risk and subsequent management. This

requirement is also to apply to Military-off-the-shelf/Commercial-off-the-shelf (MOTS/COTS) acquisition.

Defence industry

Recommendation 26— planning for investment

paragraph 13.55

The committee recommends that Defence make their Defence Capability Plan (DCP) a document that provides industry with greater certainty about Defence's plans and intentions for future capability development to enable industry to invest with confidence in capability development. In particular, it recommends that the next DCP include:

- a schedule that provides anticipated timelines for the construction and delivery of all DCP items, with continuity the key feature;
- a detailed explanation on this acquisition schedule indicating the reasoning and analysis behind it and how Defence has taken into account demand flows; and
- reliable cost estimates.

Recommendation 27—early engagement with Defence

paragraph 14.28

The committee recommends that Defence:

- continue to collaborate with industry to reinvigorate the Capability Development Advisory Forum and the associated environmental working groups as a means of engaging industry early in the capability development process. The committee recommends further than Defence ensure that such engagement with industry is a genuine two-way exchange of ideas and of information; and
- continue to support training programs such as Skilling Australia's Defence Industry (SADI).

Recommendation 28

paragraph 14.29

Given the reach back capacity of primes and their ability to tap into research and development of US and European headquarters, the committee recommends that industry consultation start at the earliest Defence White Paper and DCP stage.

Chapter 1

Introduction

Conduct of inquiry

1.1 On 9 February 2011, the Senate referred the following terms of reference to the Foreign Affairs, Defence and Trade References Committee for inquiry and report by 30 November 2011:

Procurement procedures for items identified in the Defence White Paper, *Defending Australia in the Asia Pacific Century: Force 2030* and in particular:

- (a) assess the procurement procedures utilised for major defence capital projects currently underway or foreshadowed in the Defence White Paper, including the operations of the Capability Development Group and its relevant subcommittees;
- (b) assess the timeline proposed for defence modernisation and procurement outlined in the Defence White Paper;
- (c) assess proposals arising from the Defence accountability reviews, including, the Mortimer Review, the Pappas Review and the McKinsey Report (2010), in regards to enhancing accountability and disclosure for defence procurement; and
- (d) make recommendations for enhancing the availability of public information and parliamentary oversight and scrutiny of defence procurement in the context of guaranteed 3 per cent real growth in the Defence budget until 2017-18.

1.2 On 5 July, the terms of reference were amended to include:

- (e) assess the effectiveness of the Defence Materiel Organisation including:
 - (i) its role and functions;
 - (ii) its processes, management structure and staffing, in particular as compared to similar organisations in the United Kingdom, the United States of America, Canada and other comparable jurisdictions and large Australian commercial enterprises;
 - (iii) its full costs, assessed against the timeliness and quality of its output and the service it provides to the Australian Defence Force; and
 - (iv) the extent to which it value-adds to national defence and to the long-term viability of Australian defence industries.

1.3 On 30 November, the Senate granted the committee an extension to the inquiry's reporting date to 16 December 2011. On 15 December 2011, the committee tabled out-of-session a preliminary report, which was intended as a forerunner to a more substantial report to be tabled on 28 June 2012. Following the tabling of the preliminary report, the committee wrote to all submitters drawing their attention to the report and inviting them to respond to its findings. The committee also announced the publication of the report in the *Australian* calling for comments or supplementary submissions.

1.4 Initially the committee received 32 public and 4 confidential submissions and held public and in camera hearings in Canberra. Following the tabling of the preliminary report, the committee received a further twenty-two submissions and held two days of public hearings on 12 and 13 June 2012.¹ As part of its public hearing program, the committee held a roundtable discussion with a number of analysts appearing in their private capacity on 12 June and a roundtable comprising six independent members of the gate review boards on 13 June 2012. (See appendix 4 for background information on the members).



The committee held a round table of defence analysts

1 Submissions 37–42 and Supplementary Submissions 3A–G, 4A, 6A, 11A, 14A, 17A, 21A, 21B and 22A, 40A.



Six independent members of the gate review boards gave evidence before the committee

1.5 During the two days of hearings, the committee requested a substantial amount of additional information, including an assessment by the six independent members of the review boards on the strengths and weakness of the boards. The committee required some time to consider this material. On 26 June, the Senate granted the committee an extension to 23 August 2012 to report.

Change in Defence personnel

1.6 During the committee's inquiry, a number of key senior officers involved in the acquisition projects of major defence assets left the Australian Defence organisation (Defence). They included Dr Steve Gumley who retired from the position of CEO, Defence Materiel Organisation (DMO) in July 2011 and Air Marshal John Harvey, who left his position as Chief of the Capability Development Group (CCDG) toward the end of 2011.

1.7 Mr Warren King is now the CEO of DMO and Vice Admiral Peter Jones is the CCDG.

Developments during inquiry

1.8 A number of major announcements were made during the inquiry that should be noted. On 3 May 2012, the Prime Minister released the final report of the Defence Force Posture Review, a fundamental component of Defence planning, which found that some adjustments should be made to meet Australia's future needs. In particular, it identified expanding maritime capabilities as 'significantly influencing Australia's future force posture'. At the same time, the Prime Minister revealed that the government would start work on a new Defence White Paper to be delivered in the first half of 2013.² The Minister for Defence (the minister) also announced numerous changes to strengthen Defence's procurement system, including reforms to project management accountability. These matters are dealt with where relevant throughout this report.

Reviews and references

1.9 Numerous reviews and audits have been undertaken over the past years that have a direct bearing on Defence's procurements practices. The major references used in this report are listed in a selected bibliography at the end of the report. The key references, however, are:

- *Report of the Defence Procurement Review*, 15 August 2003 (Kinnaird Review);
- *Going to the Next Level: The Report of the Defence Procurement and Sustainment Review*, 2008 (Mortimer Review);
- *2008 Audit of the Defence Budget*, 3 April 2009 (Pappas Report);
- *Review of the Defence Accountability Framework*, January 2011 (Black Review);
- *Plan to Reform Support Ship Repair and Management Practices*, July 2011 (Rizzo Report);
- *Collins Class Sustainment Review*, Phase 1 Report, 4 November 2011 (Coles Review);
- *ANAO Major Projects reports*; and
- *ANAO Performance Audit reports* (see bibliography).

2 Media Release, 'Prime Minister, Minister for Defence—Joint Media Release—Release of final Defence Force Posture Review report', 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-joint-media-release-release-of-final-defence-force-posture-review-report/> and Media Release, 'Prime Minister, Minister for Defence—Joint Media Release—New Defence White Paper 2013', 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-joint-media-release-new-defence-white-paper-2013/> (accessed 3 May 2012).

Site visits to South Australia and Western Australia

1.10 Between 5 and 8 March 2012, the committee visited a number of Defence and defence industry sites in Australia during which they received briefings from, and talked to, personnel on matters related to defence procurement. Undertaken after the committee had already considered evidence and produced a preliminary report, the visits were intended to allow committee members to test their initial findings and to explore further questions that remained unanswered.

1.11 At the AWD System Centre in South Australia, the committee spoke to people working on the Air Warfare Destroyer (AWD) Program. The committee also received a briefing on the Collins Class Submarine program, toured the submarine shipyard and inspected one of the Collins Class submarines undergoing maintenance. Members took the opportunity to inspect the Common User Facility Techport South Australia.

1.12 On the second day, the committee visited Defence Science and Technology Organisation (DSTO) Edinburgh and RAAF Edinburgh and held discussions with people from the Over the Horizon Radar System Program Office and the Maritime System Program Office. While at RAAF Edinburgh, the committee inspected two AP-3C Orion aircraft that were undergoing an upgrade. Committee members also had a long and valuable discussion with officers from the Aerospace Operational Support Group, with a special focus on the role of test and evaluation in procurement.

1.13 The following day, the committee travelled to Perth and on to HMAS *Stirling* where members spoke to personnel with the Navy Guided Weapon System Program Office and visited the Torpedo maintenance facility. While in HMAS *Stirling*, the committee also visited the Australian Maritime Warfare Centre. On the way back to Perth, the committee stopped at the office of Thales and received a briefing on a number of defence projects including the Guided Missile Frigate (FFG) upgrade.

1.14 On the fourth day, a representative from the West Australian government spoke to the committee on the state government's investment in the Australian Marine Complex Common User Facility at Henderson. The committee travelled to the facility to inspect the complex. While there, the committee toured HMAS *Toowoomba*, which was to be launched the next day after undergoing maintenance. The committee then moved on to ASC WA and was again able to observe maintenance activities associated with the Collins Class submarine.



Committee members inspecting Techport Australia, Osborne, South Australia, which included the South Australian Government Common User Facility



While at the Australian Marine Complex Common User Facility, committee members toured HMAS Toowoomba

Overseas visit

1.15 As part of a joint parliamentary delegation with the Joint Standing Committee on Foreign Affairs, Defence and Trade, four committee members travelled to the United Kingdom (UK), Spain, Germany and the United States (US) in April 2012. This visit provided them with the opportunity to inspect manufacturing sites and hold discussions with government and industry officials. The focus was on defence procurement with committee members particularly interested in learning more about projects in which Australia has a vested interest including the Joint Strike Fighter (JSF) and the MRH-90 helicopter. In light of Australia's intention to acquire 12 submarines, the committee was also keen to learn more about developments in the area of the design and construction of submarines.

1.16 Committee members greatly appreciated the efforts of those who contributed to the planning and smooth operation and overall success of the delegation trip. They thank the staff of the International and Community Relations Office, in particular, the visit coordinators, Ms Fiona Way and Mr Raymond Knight, for their administrative support. The committee is also grateful to the many organisations and individuals for their hospitality, insights and willingness to draw on their considerable experiences to assist the delegation obtain a better understanding of international developments in major defence acquisitions. For a full list of acknowledgements see the delegation report tabled in Parliament in August 2012.³

Scope and structure of the report

1.17 In its preliminary report, the committee identified the main areas that it wished to pursue and the key questions that would guide further investigations. At that stage, the committee made no recommendations but did raise a number of matters that it intended to pursue. The final paragraph of the executive summary makes clear that, having highlighted long standing problems, the committee's intention was then:

...to invite comment on the underlying causes that need to be fixed if Defence's reform program is to be effective and lasting. For example, it raises questions about whether an attitudinal sea change is required involving, on the part of Defence leadership, a commitment to genuine reform and to developing skills; openness to scrutiny; and willingness to accept responsibility, to be accountable and to lead. On the other hand, entrenched structural impediments to efficient and effective leadership within Defence could be at the source of Defence's procurement problems requiring reallocation and redefinition of roles, functions and responsibilities. Indeed, the current management matrix model may need overhauling or even dismantling.⁴

3 *Report on the Australian Parliamentary Delegation to the UK, Spain, Germany and the United States*, 14 April–3 May 2012, tabled in the Senate 15 August 2012.

4 Senate Foreign Affairs, Defence and Trade References Committee, *Procurement procedures for Defence capital projects*, Preliminary report, December 2011, p. xiv.

1.18 The committee has set itself the difficult task of not only identifying problems but offering solutions to the root causes of Defence's capability development woes. Thus, the central question shaping this report concerns the forces at work, including government decisions, undermining Defence's efforts to achieve high performance when acquiring major capital equipment. The committee's intention is to look beyond the symptoms which, despite a decade of reviews and reforms, still persist. It is time to put the structure that has produced the problems under the spotlight.

1.19 Throughout this report, the committee's focus is on: identifying these forces; examining the effectiveness of Defence's measures to counter them; and offering possible solutions. The dominant issues relate to:

- organisational structures—the management matrix;
- risk management;
- compliance with, and awareness of, procurement policy and guidelines;
- responsibility and accountability;
- communication, integration, and collaboration;
- contestability and independent advice;
- the skills and experience of people involved in major defence acquisition projects and the quality of analysis; and
- industry—skills, workforce and relationship with Defence.

1.20 The report is divided into six main parts and starts by presenting concrete examples of where projects have encountered significant problems. In doing so, it has relied heavily on recent Major Projects Reports, ANAO performance audits, evidence taken over the years during Senate estimates hearings, as well as domestic and overseas inspections and extensive evaluation of substance. The committee then works backward from the identification or manifestation of problems to determine their origins and the extent to which Defence could or should have anticipated, mitigated and/or prevented them. In light of Defence's claims that it has implemented reforms, the committee seeks to establish whether Defence's practices are consistent with the reforms, including the Kinnaird and Mortimer recommendations for the independence of DMO and the centralisation of authority in the capability managers.

Part 1—Major acquisitions—background and context

1.21 To answer its questions, the committee in Part I of this report reworks some ground covered in the preliminary report. The committee begins by considering the major risks, both external and internal, to a successful acquisition project. This part contains three chapters.

- *Chapter 2* looks at a number of projects that have experienced difficulties, such as schedule slippage and readjustments to original capability definition. The committee then notes the causes for the problems as identified by Defence and other sources.

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- In light of these lessons, *Chapter 3* considers the White Paper and discernible trends with projects still in their embryonic stage.
 - *Chapter 4* establishes the context in which defence organisations acquire their major capital assets. The committee considers the risks posed to the success of these projects in an era of rapid advances in technology and shifts in the world's geo-political environment. While the committee acknowledges that many of the problems arise from external factors largely beyond Defence's control, such as the sheer magnitude and complexity of defence acquisitions and political direction, it considers whether some of the problems stem from, or are exacerbated by, 'self inflicted' poor management practices. The committee also looks at Defence's unwillingness to implement recommended organisational change, resulting in increasing control by a growing Defence bureaucracy and diminution of technical skills.

Part II—Compliance with, and awareness of, policy and guidelines

1.22 The preliminary report endeavoured to describe the acquisition process from the conceptual stage through to entry to the Defence Capability Plan (DCP) to acquisition and delivery and in service operation. It found the process convoluted. To understand the process better, in Part II the committee looks at risk management, which is supposed to start with the initial capability development proposal and follow a logical sequence throughout its life. This part contains two chapters.

- *Chapter 5* establishes whether, consistent with sound management practices, Defence has an appropriate risk management policy and provides adequate guidance on identifying and mitigating risk in defence acquisition projects.
- *Chapter 6* builds on the consideration of policy and official guidelines on risk management to focus on compliance, awareness and documentation—it is concerned with the practical implementation of, and adherence to, policy and relevant manuals and handbooks.

Part III—Accountability, responsibility and collaboration

1.23 There are a number of key participants in the development and delivery of a major defence capability as well as various committees that become involved at particular stages in the acquisition process. In Part III, the committee is interested in decision-making and who takes responsibility and is held accountable for decisions and, in this management context, the relationship between the various groups engaged in procurement.

- *Chapter 7* looks at the allocation of responsibility between the various groups involved in decision-making and the extent of their accountability for decisions and project performance related to their areas of responsibility.
- *Chapter 8* recognises that there are many stakeholders involved in an acquisition project, each with their own particular interpretation of what constitutes a successful capability and on the priorities for achieving that objective. It examines how these various groups work as an integrated unit

toward delivering capability to the ADF and the extent to which that is frustrated by organisational barriers.

Part IV—Contestability and independent advice

1.24 The committee understands that decisions on capability development are critical to Australia's national security and require extensive consultation and deep consideration. In this context:

- *Chapter 9* examines the importance of contestability and independent advice in Defence's decision-making on capability development and the way it goes about testing assumptions that underpin acquisition proposals. In this chapter, the committee looks at the White Paper and the Defence Capability Plan. As part of its discussion on contestability, the committee reflects on the debate concerning the role of the former Force Development and Analysis Division and explores the adequacy of the current model constructed in its place.
- *Chapter 10* continues the committee's consideration of contestability and independent advice but focuses on the process following first pass approval.

Part V—Right people, skills and analysis

1.25 This part of the report recognises that many of the difficulties experienced by projects stem from technical problems—that is an underestimation of the need for developmental work and/or failure to understand the complexity of the integration of a system or a platform. In this chapter, the committee looks closely at the people engaged in Defence's procurement activities and their related skills. It acknowledges that to be a smart customer, Defence not only needs to be a knowledge based organisation but, taking account of the different stakeholders, a well integrated one and one that ensures it places the right people in the right places.

- *Chapter 11* explores the proposition that to acquire major defence assets effectively, Defence needs to have the right people in the right place at the right time. It determines whether Defence is an intelligent buyer.
- *Chapter 12* recognises that today's major defence acquisitions are technically challenging. In this chapter, the committee looks at the quality of analysis as the basis for decision-making. It uses Test and Evaluation as a tool to examine the extent to which Defence is an informed customer.

Part VI—Industry—workforce and relationship with Defence

1.26 Part VI is concerned with defence industry as a vital partner with Defence in the success of a project. It contains two chapters:

- *Chapter 13* examines the role of defence industry in delivering capability to Australia's Defence Force (ADF) and the ways in which Defence assists industry to make that vital contribution. In the process, the committee also explores areas where Defence and industry could improve their performance. This chapter focuses on the skills in defence industry, the reliability and

quality of information provided by Defence through the White Paper and Defence Capability Plan (DCP) and the flow of work to industry including recent trends in the approval rate for projects.

- *Chapter 14* continues to explore the ways in which Defence and industry work together to deliver capability to the ADF. The committee's main focus is on the relationship between Defence and the defence industry, including the value of engaging industry early in capability development; contracting; and risk sharing.

Part VII—Conclusion

1.27 The report's conclusion brings together the various strands running through the report and makes recommendations for improved accountability by increasing transparency in decision-making, clarifying roles and responsibilities in a complementary way, building skills and ensuring best management practices.

Acknowledgements

1.28 The committee thanks all those who contributed to the inquiry, including overseas people, by making submissions, providing additional information, appearing before it to give evidence and providing such valuable feedback on the preliminary report. In particular, the committee wishes to express its gratitude to Defence, industry and state government officials who helped the committee arrange its visit to various facilities in South Australia and Western Australia and for their willingness to assist the committee. The committee notes especially the work of Mr Grant Lever from DMO who contributed greatly to the success of the visit. Finally, the committee expresses its gratitude to the analysts and the independent members of the gate review boards for participating in roundtable discussions which produced a significant amount of valuable evidence.

Part I

Background

For many years, Defence's program for the procurement of major capital equipment has been dogged by delays and cost overruns for which there are tangible consequences for the taxpayer and Australians engaged in active military service. This appears to have remained unchanged since the committee's last report on the subject in March 2003.* Indeed, as noted in the committee's preliminary report, a number of the projects in the White Paper that have progressed to the DCP stage and beyond have experienced significant problems that have warranted their placement on DMO's list of projects of concern. Some projects that pre-date the 2009 White Paper are still in production and have many years to go before they finally emerge as completed projects. Some have been cancelled, costing billions of dollars of taxpayers' money. Any slowdown or mishap in their delivery and acceptance into service will have an effect on those not yet in the DCP; those waiting for first or second pass approval or those currently under construction. Among other things, a delayed or unsuccessful project creates a capability gap, fails to meet the government's strategic requirements, damages Defence's relationship with industry and undermines public and parliamentary confidence in Defence's procurement program.

In Part I of the report, the committee examines a number of the acquisition projects that have experienced difficulties and the reasons for their underperformance. While acknowledging that defence organisations face particular and significant challenges in managing their major acquisitions, the committee seeks to understand the extent to which improved practices using qualified and experienced personnel or behaviour or fundamental changes to the management structure could have helped Defence better manage its procurement processes.

* Senate Foreign Affairs, Defence and Trade References Committee, *Materiel acquisition and management in Defence*, March 2003 and also *Bluewater ships: consolidating past achievements*, December 2006.

Chapter 2

Project performance

2.1 In its preliminary report, the committee drew attention to a number of projects that had underperformed or were underperforming. In this chapter, the committee looks in greater detail at individual projects that have experienced difficulties in order to identify the source of the problem. It then considers the projects collectively to determine whether there are common or recurring problems that indicate deep seated or persistent problems in Defence's acquisition program.

2.2 A number of the projects date back to the 1990s when they were approved: that is pre Kinnaird and Mortimer reforms. Even so, many still remain in the procurement pipeline and carry with them certain risks, some of which have materialised. In this sense, they are today's problems. Keeping in mind that they are major projects, any delay or capability shortfall may have a cascading effect and cause difficulties for other projects with serious implications for Australia's defence capability for decades to come. Also, these problem projects, the origins of which may go back many years, have generated a substantial body of knowledge and experience from which Defence should have learnt lessons. The committee believes that these particular projects, often dismissed as legacy projects, cannot be ignored, even those that have been cancelled, including the Super Seasprite helicopters and landing watercraft. More to the point, the committee is concerned that despite assurances to the contrary, more recent projects are showing similar symptoms of failure.

Super Seasprite

2.3 Approved in 1996, the Super Seasprite project was intended to acquire Super Seasprite helicopters for the Navy's ANZAC ships. But, having failed to deliver the required capability, the project was eventually cancelled in March 2008 with a total expenditure of \$1.4 billion.¹ According to the then Parliamentary Secretary for Defence Procurement, the program 'cost us more than one billion dollars for no result'.² He stated that the project had been mismanaged which meant that not only had Defence lost this money but Australia's naval aviation capability, especially in the area of anti-submarine warfare, had suffered.³

1 ANAO Audit Report No. 41 2008–09, *The Super Seasprite*, pp. 13–14 and The Hon Joel Fitzgibbon MP, Minister for Defence, 'Seasprite Helicopters to be cancelled', MIN14/08, 5 March 2008, <http://www.defence.gov.au/minister/70tpl.cfm?CurrentId=7480> (accessed 2 April 2012).

2 The Hon Greg Combet MP, Parliamentary Secretary for Defence Procurement, Speech, Defence Watch Luncheon, 22 May 2008.

3 The Hon Greg Combet MP, Parliamentary Secretary for Defence Procurement, Address to Australian Command and Staff Course Members, Australian Defence College, 24 November 2008.

2.4 The Super Seasprite project stands out as an example of where Defence, through the requirement definition process, did not fully comprehend the risks associated with the acquisition.⁴ The ANAO attributed the failure of the project to a range of factors, some of which are common across many projects that have suffered from poor performance, such as:

- inadequate understanding of risks during the early stages of the acquisition and tender evaluation process;
- underestimation of costs;
- difficulties attracting and retaining appropriately qualified personnel; and
- disparity between contractual and ADF certification requirements for fit for service.⁵

2.5 More specifically, the committee has evidence that, in the later part of 1999 and the beginning of 2000, a subject matter expert advised the Director of the Naval Aviation Systems Project Office and the Head of the Aerospace Systems Division that the Super Seasprite project required a lot of development work. The advice noted that 'Developmental work brings with it considerable risks though, if able to be managed accordingly, should be addressed effectively'. At that time, the consultant recommended that if the Project Office or Department were unable to fund the required T&E function then they should 'get out of the contract now, or as soon as practicably possible'. According to the expert, the same advice was provided around 1997 to the Naval Aviation Systems Project Office by experts in Defence through the Officer in Command, Aircraft Maintenance and Flight Test Unit.⁶

2.6 Despite early warnings from subject matters experts, the project proceeded without any effective risk management. In early 2008, briefs prepared for senior Defence personnel outlined a series of inadequacies in the Super Seasprite capability, some of which had been identified as early as 1998. These matters had also been covered in the 2005 Deficiency Review which, according to an ANAO audit report, had 'effectively recommended that the Project be cancelled'. The ANAO concluded that the Project was:

...high risk from the outset and the scale of these risks escalated rapidly in the early stages and remained high prior to the Government's decision to cancel the Project. The issues encountered were fundamental to the Project's success and were not overcome during the 12 year life of the Project. From an accountability perspective, this leads to a question regarding how the Project was allowed to continue for so long...Factors contributing to this outcome include a degree of optimism surrounding the ability to achieve outcomes, a reluctance to make firm decisions based on

4 ANAO, *Submission 22*, paragraph 19.

5 ANAO, Audit Report No. 41 2008–09, *The Super Seasprite*, pp. 16–17.

6 Air Power Australia, *Supplementary Submission 40A*.

the information available; and a lack of visibility of information to decision makers...⁷

2.7 This failed project provides a raft of lessons for any future project. It especially drives home the need not only for the adequate resourcing of early T&E activities but to ensure that the advice from subject matter experts is communicated to key decision-makers, who are able to comprehend and heed such advice and take decisive action—that is take responsibility.

Landing Watercraft for HMAS Manoora and HMAS Kanimbla (LCM 2000)

2.8 The LCM 2000 project was meant to purchase six watercraft that would transfer personnel and supplies from Navy's Landing Platform Ships (LPAs) to shore. Originally approved in 1997, the landing watercraft project was on the projects of concern list in 2010.⁸

2.9 The government cancelled the project in February 2011 with the accompanying explanation that the dimensions and weight of the watercraft meant that they were 'unsuitable to be launched' from HMA Ships *Kanimbla* and *Manoora* and 'not fit' for alternative ADF use.⁹ At that time, Mr Warren King explained:

The aspiration of the project was to get a capability that was more competent in sea lift than existed anywhere in the world at that time. A tender was placed around the early 2000s and, because a new design that had not been tested or proven offered potentially more capability than existed in existing designs, the decision at the time was made to go with this new design.

...

The problem was that the tender was actually based on a very early concept design to be produced by a company that had never built a landing craft using aluminium, which had never been used in such a manner.¹⁰

2.10 According to Mr King, the LCM 2000 project highlighted the need to establish early that the 'solution would not deliver what the capability managers wanted and [that] a considered discussion around that at that time would have been a very valuable undertaking'.¹¹

7 ANAO Audit Report No. 41 2008–09, *The Super Seasprite*, paragraphs 94–95.

8 The projects of concern list was established in 2008 to focus Defence and industry's efforts on 'solving the issues required to remediate listed projects'. The Hon Stephen Smith, Minister for Defence, and the Hon Jason Clare MP, Minister for Defence Materiel, 'Projects of Concern—Update', 15 October 2010.

9 Stephen Smith MP, Minister for Defence, 'Minister for Defence, Minister for Defence Materiel: Projects of Concern—Update', 1 February 2011.

10 Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 23 February 2011, pp. 36–37.

11 *Committee Hansard*, 7 October 2011, p. 30.

2.11 Both the Super Seasprite and the landing watercraft projects were cancelled due to very poor risk analysis at the early capability definition stage and the failure to identify and mitigate this deficiency.

Wedgetail

2.12 The Wedgetail project is intended to provide the ADF with an airborne early warning and control capability. It involves the provision of six aircraft and associated supplies and support.

2.13 The government gave the equivalent of first pass approval for Phase 3 of this project in 1997. The airborne early warning and control system is based on Boeing's next generation 737 aircraft, modified to accommodate sophisticated mission parts. The committee notes that this project is a 'highly developmental project'—the core of the surveillance capability, the phased array radar, had never previously been integrated into an operational system.¹²

2.14 In 2007, Boeing announced a two-year slippage in the program. The following year, Boeing advised that continuing problems with radar and electronic support measures and systems integration had caused further delays. While the government recognised that this developmental project had experienced some 'well publicised issues', it noted that the aircraft was a 'vital capability for the ADF' and needed the project to succeed.¹³

2.15 According to the Chief of Air Force, Air Marshal Geoffrey Brown, there was 'a large degree of underestimation of the complexity' of the Wedgetail program right from the start. In his opinion, 'everybody viewed it as a much easier program than what it was, and that probably led to the way it was staffed'. According to the Air Marshal, the original strategy was for Australia to be the second purchaser following the Royal Air Force (RAF) through the development process. Australia, however, ended up being in the lead and taking a lot of the development load. He explained:

You have to remember that we ended up being the leading-edge customer on this. We had not intended being the leading-edge customer; the RAF were supposed to be, but they ended up doing a PPP, which delayed them. So the initial acquisition strategy was all about a public-private partnership. They had some significant problems in standing that up.¹⁴

2.16 As at the end of 2011, the Final Operational Capability (FOC) milestone had been pushed back 48 months from December 2008 to December 2012 and Initial

12 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, pp. 198-199.

13 The Hon Greg Combet MP Parliamentary Secretary for Defence Procurement, Address to Australian Command and Staff Course Members, Australian Defence College, 24 November 2008.

14 *Committee Hansard*, 5 October 2011, p. 31.

Operational Capability had been pushed back 54 months.¹⁵ In February 2012, Defence announced that the first fully configured aircraft would be accepted in July 2012, representing a 68 month delay against the original baseline.¹⁶

2.17 Mr George Pappas' audit report noted that slippage has an inherent cost risk attached to it:

For every year that a project slips, costs are incurred across a number of areas including: project team salaries and allowances; administration costs such as travel and support contracts; financial costs (indices); operational costs (time based services and warranty rundown); and capability related costs (the cost of not having a capability, or maintaining an expensive ageing capability).¹⁷

2.18 He cited Wedgetail as an example of costs incurred due to schedule slippage. According to his audit, schedule delays were costing USD \$1.5 million per month, about two-thirds of which were personnel related costs. Additionally, the project's forecast additional exposure to index inflation was estimated at AUD \$15 million over the next 5 years.¹⁸

2.19 The main lessons to be learnt from this project stem from its developmental nature. Thus, DMO recognised that greater effort was required to understand and better appreciate:

- what is involved in being a customer of a first-of-type program;
- the time and effort required to undertake such a complex project;
- the challenges in contractor management; and
- the importance of pro-active risk management and stakeholder engagement throughout the project.

2.20 DMO also noted the need to allocate adequate resources and allow sufficient lead-time to develop and execute the evaluation and negotiation phases for the in-service component. With regard to industry, DMO recognised that industry must 'pay greater attention to adequately resourcing complex and highly developmental projects'.¹⁹ But it is not clear to the committee who was responsible—RAAF or DMO, or any other part of Defence—and whether it was ever flagged that part of this project was very developmental with a high risk of failure and non-delivery as it transpired.

15 ANAO Report No. 20 2011–12, *2010-11 Major Projects Report*, p. 203.

16 Defence Materiel Organisation, 'February 2012 Estimates: DMO Statement on Projects of Concern', 9 February 2012, p. 3.

17 Department of Defence, *2008 Audit of the Defence Budget*, Commonwealth of Australia, 3 April 2009, p. 76.

18 Department of Defence, *2008 Audit of the Defence Budget*, Commonwealth of Australia, 3 April 2009, pp. 76–77.

19 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 206.

Tiger Armed Reconnaissance Helicopter

2.21 The proposal to purchase 22 Tiger Armed Reconnaissance Helicopters (ARH) received government approval in 1999. They were to replace the Army's aerial reconnaissance and fire support capability, which dated back to 1960's technology.²⁰ The helicopter is based on the Eurocopter French and German Tiger Helicopters with some modifications ('Australianisation'). The acquisition of this helicopter was deemed to be an 'off the shelf' (OTS) procurement and hence represented a low risk to Defence.²¹

2.22 This assessment of low risk, however, is at odds with the Aircraft Research and Development Unit (ARDU) pre-contract report which highlighted that there were a large number of identified deficiencies and also a significant body of development and certification remaining that the manufacturer was unlikely to complete in the time allowed under the proposed contract.²² Evidence received by the committee shows a deliberate decision by the Defence Acquisition Organisation (DAO) not to advise the capability manager (and by extension it is assumed government) of this information.²³ It appears that while DAO preferred to believe the manufacturer's undertakings in respect to the maturity of the product, subsequent ANAO audits, Project of Concern Summaries and briefings to the Parliament have validated the predicted impact of the risks identified in the report.

2.23 According to a 2006 ANAO audit report, the DMO understood that 'flying Tiger helicopter prototypes had been demonstrated prior to the award of the Australian Acquisition Contract' although they were yet to receive full certification and design acceptance by the French Government.²⁴ In effect, ARH 1 and 2, the lead Australian helicopters, were the first of type to undergo production acceptance by any nation's Defence Force.

2.24 Indeed, while presented as a military-off-the-shelf (MOTS) acquisition, the aircraft was still undergoing development and was delivered into service 'as an aircraft type more developmental than that which was originally intended by the initial requirement'.²⁵ Additionally, airworthiness certification for the ADF relied on France's certification of the French aircraft, and delays in the French program flowed through to the Australian program. There were also some major issues associated with

20 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 272.

21 ANAO Audit Report No. 36 2005-06, *Management of the Tiger Armed Reconnaissance Helicopter Project—Air 87*, May 2006, p. 11.

22 Aircraft Research and Development Unit.

23 The DAO was DMO predecessor.

24 ANAO Audit Report No. 36 2005-06, *Management of the Tiger Armed Reconnaissance Helicopter Project—Air 87*, May 2006, p. 12.

25 ANAO Audit Report No. 36 2005-06, *Management of the Tiger Armed Reconnaissance Helicopter Project—Air 87*, May 2006, paragraph 5.

the through life support contract as noted in a 2006 ANAO report. In May 2008, the then Parliamentary Secretary announced that a Deed of Agreement had been formalised between the Commonwealth and the contractor, Australian Aerospace, that resolved some of the outstanding contractual issues that were constraining the project.²⁶

2.25 The final operational capability, originally planned for June 2009, is now forecast for December 2012, 42 months late.²⁷ According to DMO, the main lessons to be learnt from this project are:

- aircraft still undergoing development by their parent Defence Force or Original Equipment Manufacturer (OEM) should not be classified as OTS;
- resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute; and
- use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.²⁸

2.26 It should be noted that the ANAO audit report found that the DMO accepted the first of the assembled aircraft on the basis of the draft acceptance procedure. Importantly, that acceptance followed a Production Acceptance Test and Evaluation Report compiled by the Defence Aircraft Research and Development Unit Test Team that recommended the aircraft should not be accepted in its delivered state.²⁹ The ANAO recommended:

- prior to accepting aircraft against specified capability, technical and operational airworthiness standards, DMO completes the required testing activities, unless there is a demonstrable case for not doing so;
- project authorities liaise and consult closely with capability managers prior to finalising product acceptance, where significant operational capability issues exist; and
- DMO incorporates into final contract documentation unambiguous specifications, including required configurations for airborne weapon systems, so that the impact on the platform is fully understood.

2.27 Suggestions that DMO should complete the required testing activities prior to accepting aircraft and consult closely with capability managers before finalising product acceptance are patently obvious. They are not about adding processes but about establishing appropriate priorities—not cutting corners on vital test and

26 The Hon Greg Combet MP, Parliamentary Secretary for Defence Procurement, Speech, Defence Watch Luncheon, 22 May 2008.

27 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 276.

28 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 280.

29 ANAO Report No. 36 2005-06, *Management of the Tiger Armed Reconnaissance Helicopter Project—Air 87*, paragraph 29.

evaluation activities; ensuring that technical advice from subject matter experts informs discussions in submissions; and involving capability managers in specifying capability, technical and operational worthiness standards and the required testing to those standards.

Guided Missile Frigate Upgrade Project

2.28 The Guided Missile Frigate (FFG) Upgrade sought to upgrade four (originally six) Adelaide Class FFGs to ensure that they remained effective and supportable until their removal from service between 2015 and 2021.³⁰ The FFG upgrade project commenced in 1999 and was subsequently re-baselined in 2004 and 2006 due to delays. Also, the project scope was reduced from six to four ships. The project suffered from an underestimation of the complexity involved and performance specifications not being formalised and agreed before contract signature.³¹ The then CEO DMO told the Joint Committee of Parliamentary Accounts and Audits (JCPAA) in May 2007 that when the FFG project was put together in 1997 or 1998 'you could probably argue that there were not enough people on the project'.³² The project was placed on the projects of concern list in January 2008.³³ The then Parliamentary Secretary noted in November 2008:

When I first became engaged with the project it became obvious to me that the main players involved including the Navy, the DMO, the prime contractor Thales and the subcontractor Rafael were not communicating with each other. The project was drifting and confidence in any successful outcome was fading.³⁴

2.29 Mr John O'Callaghan, Australian Industry Group, informed the committee that clearly there was a failure on the part of the industry project team and the Defence project team to 'actually work together to get the appropriate outcome' for this project.³⁵ Evidence provided to the committee shows that this was a gross understatement of what was in fact a complete calamity.

30 ANAO Report No. 20 2011–12, *2010-11 Major Projects Report*, p. 317.

31 ANAO Report No. 20 2011–12, *2010-11 Major Projects Report*, p. 319.

32 JCPAA, *Committee Hansard*, 9 May 2007, p. 20. Mr Steve Gumley stated that 'one of the main areas of the up-skilling program is to train our own. We have been out to the market; we have seen what is there. It is a limited pool of qualified people. The industry, obviously, want exactly the same people. There are 7,000 people in DMO, but there are 26,000 people in the industry, and they need the same sorts of people'.

33 Stephen Smith MP, Minister for Defence and Jason Clare MP, Minister for Defence Materiel, Media Release, 'Reforms to Projects of Concern', MR 187/11, 29 June 2011.

34 The Hon Greg Combet MP, Parliamentary Secretary for Defence Procurement, Address to Australian Command and Staff Course Members, Australian Defence College, 24 November 2008.

35 *Committee Hansard*, 12 June 2012, p. 28.

2.30 The Operational Release for the four ships project was successfully completed in July 2011, representing delays of between 67 and 84 months.³⁶

2.31 The problems experienced by the FFG upgrade go to matters including Defence having no informed appreciation of the complexity of the project, especially that the systems-of-systems risk was high, inadequate specifications and consequent misunderstandings between Defence and the contractors.³⁷ An important lesson to be learnt from this project is the need to engage senior people with the necessary authority early in the process to minimise the risk of surprises and to stop the relevant parties 'retreating to their corners' when difficulties emerge.³⁸ As mentioned earlier, having domain expertise with clear channels of communication to these key people is also necessary; otherwise they are making uninformed decisions.

2.32 Regrettably, responsibility for the failure of the FFG Upgrade project cannot be attributed to any one part of the chain, and clearly Chief of Navy was very reluctant to accept the ships into service, thus demonstrating his lack of engagement. Indeed, ANAO observed that DMO and Navy would benefit from working more closely during acceptance test and evaluation. It noted:

A close working relationship is specified in DMO's System Acceptance criteria, but in practice this does not always eventuate. For example, in December 2009, DMO completed contractual acceptance of all four upgraded RAN FFG Guided Missile Frigates with limited engagement of Navy in the verification and validation process leading to contractual acceptance. To date there are significant elements of the upgraded FFG Combat System that are yet to demonstrate the performance, reliability, availability and maintainability expected by Navy, but recourse to contractual remedies is now significantly reduced.³⁹

2.33 The ANAO report highlighted a concern that is repeated throughout this report—non-compliance with policy, guidelines or manuals and capability managers left out of the loop.

2.34 With regard to the FFG project, the committee suspects that the full story of incompetence on this project, including that of the contractor, will never be discovered.

36 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 323.

37 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 328.

38 Information received during the committee's visit to Western Australia.

39 ANAO Audit Report No. 57 2010-11, *Acceptance into Service of Navy Capability*, paragraph 49.

KC-30A Multi-Role Tanker Transport

2.35 The government gave the equivalent of second pass approval for the KC-30A Multi-Role Tanker Transport (MRTT) in May 2003.⁴⁰ The air-to-air refuelling aircraft is designed to enhance Australia's air combat capability by extending the range and endurance of Australia's fighters and also provide extra air-lift capability. The purchase of this new generation Airbus A330 MRTT is intended to provide in-flight refuelling capability for current and future aircraft as well as providing for the carriage of up to 270 passengers and cargo.⁴¹

2.36 Australia is the lead customer for the A330 MRTT platform, including for the Aerial Refuelling Boom System developed by Airbus Military. The project involves a highly complex developmental effort to 'design, build and test the first-of-type, highly integrated military mission and refuelling systems'. This project has also experienced significant delays and was placed on the projects of concern list in October 2010.⁴²

2.37 Recently, the DMO observed that 'the development and introduction into service of a first-of-type military aircraft mission and support system is always harder than it first appears.' With regard to the MRTT, it stated further:

At contract signature the project appeared a reasonably low risk venture. However, over the course of the project, it became apparent to both the DMO and the contractor that the integration of the fuel delivery systems and military systems on a commercial aircraft introduced many challenges including: software integration issues, underestimation of developmental and certification testing schedule.

...

...due to time constraints and the breadth of review activities, it was not possible to conduct a comprehensive technical review and maturity assessment.⁴³

2.38 This last statement clearly indicates a case of self-inflicted negligence.

2.39 Based on past contractor performance and an independent assessment of remaining technical risk, Defence expected a delay of between 35–38 months for achieving the initial operating capability. According to DMO, the lessons to be learnt from this project are:

- DMO should have exercised greater effort for a longer period of time to support the program;

40 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 303.

41 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 303.

42 The Hon Stephen Smith, Minister for Defence and the Hon Jason Clare MP, Minister for Defence Materiel, 'Projects of Concern—Update', 15 October 2010.

43 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 315.

- prior to contract award, a more robust design maturity assessment should have been undertaken under a funded design development process; and
- a more robust process should have existed to achieve a common understanding of derived requirements and operational intent that should have been agreed to at an early stage in the project's life.⁴⁴

2.40 These lessons are standard diagnoses found after the effect, but which, from what the committee has heard, apply to many other projects. The relative responsibility of RAAF, DMO or others is not known. But again, in the committee's experience, it is not likely to be discovered.

2.41 It should be noted that during its visit to RAAF Edinburgh, the committee gained a greater understanding of the lack of resources and attention Defence gave to the testing and evaluation of the MRTT in France. Thus, the committee believes that another important lesson for Defence, DMO and relevant capability managers is to ensure that any overseas testing and evaluation of an acquisition is closely scrutinised by appropriately qualified and resourced Australian personnel. Such personnel should be accountable to one source of authority, i.e. the client who finally uses the product. Defence should not skimp on the resources necessary to conduct adequate and appropriate T&E activities and make it crystal clear who is responsible.

Multi-Role (MRH-90) Helicopter

2.42 The Multi-Role Helicopter Project received first and second pass approval in 2006. The program is part of a strategic plan to rationalise the number of helicopter types in ADF service and involves the acquisition of MRH-90 helicopters for three separate roles.⁴⁵

2.43 The helicopter received significant negative publicity in early 2010 when a report from the Luftlande und Lufttransportschule (Airborne and Air Transport School) was released. The report highlighted a range of deficiencies and recommended 'using alternative aircraft whenever possible in an operational scenario'.⁴⁶ In Australia, the helicopter underwent a 'high-level comprehensive diagnostic review' during April 2011 that recommended a remediation strategy.⁴⁷ The helicopter was placed on the projects of concern list in November 2011.⁴⁸

44 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 315.

45 ANAO Report No. 20 2011-12, *2010-2011 Major Projects Report*, p. 207.

46 Air Commodore (retired) Bushell, *Submission 3, Annex C*; and Thomas Newdick, 'German Army Report Highlights NH90 Deficiencies', *Defense News*, 24 February 2010.

47 Stephen Smith MP, Minister for Defence, 'Minister for Defence, Minister for Defence Materiel: Projects of Concern—Update', 1 February 2011. Also see footnote below.

48 The Hon Jason Clare MP, Minister for Defence Materiel, 'Minister for Defence and Minister for Defence Materiel—Projects of Concern Update', 28 November 2011, <http://www.minister.defence.gov.au/2011/11/28/minister-for-defence-and-minister-for-defence-materiel-projects-of-concern-update-2/> (accessed 30 November 2011).

2.44 The failure of the program to achieve an adequate rate of effort has affected the training of Service aircrew. Additionally, the immaturity of the MRH-90 helicopter design was not considered when it was initially classified as a MOTS acquisition and aircraft already delivered require in-service retrofit to bring them up to the full capability baseline.⁴⁹ Overall, the program has incurred delays of approximately two years and a capability gap has had to be covered by the Army's Black Hawk fleet and potentially Navy's Seahawk helicopters.⁵⁰ The DMO identified the following lessons to be learned from the project:

- it is essential that the maturity of any offered product be clearly assessed and understood; and
- elements of a chosen OTS solution may not meet the user requirements.⁵¹

2.45 The committee considers this analysis to be trite; uninformative as to the real causal issues; and unhelpful when it comes to accountability and remedial action necessary.

2.46 For example, the committee understands that a Preview Evaluation was not conducted despite strong advice from the ADF Flight Test Centre that such an evaluation was a critical part of identifying and quantifying risk prior to contract signature. Once Defence became aware of problems, albeit very late, it should have set about establishing why the maturity of MRH-90 was not clearly assessed and understood. If such an approach were taken, Defence may well have looked at the structure of the organisation in order to identify where things started to go wrong and why remedial action was not taken. This approach would require answers to hard questions about responsibility, accountability, the engagement of the capability manager, the use of trained and experienced teams to test the feasibility and suitability of a capability and the attention given to such expert advice. The lessons to be learnt would then have some relevance and practical application.

2.47 The DMO also noted the problems caused by having only limited intellectual property rights including the provision of adequate data for integration with other platforms such as the Landing Helicopter Deck (LHD). In less precise terms, DMO also referred to the need to set up Commonwealth and industry teams well before the delivery of the first type for projects as well as a range of lessons associated with command and control of assets and people, stakeholder management and relationship with industry.⁵² The committee is not aware of any response from Defence or the relevant capability manager, who are equally responsible for the failure, and hence all responsibility appears to rest with DMO.

49 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, pp. 207-209.

50 Defence Materiel Organisation, 'February 2012 Estimates: DMO Statement on Projects of Concern', 9 February 2012, p. 8.

51 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, p. 318.

52 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 218.

Air Warfare Destroyer

2.48 The Air Warfare Destroyer (AWD) project received first pass approval in 2005 and second pass in 2007.⁵³ The project involves the acquisition of three Hobart Class Air Warfare Destroyers to contribute to Australia's joint air warfare defence capability.

2.49 While the project is progressing within budget, it has experienced schedule delays with early hull block production due to capacity issues at the Melbourne shipyard. In May 2011, a plan to adjust the workload to relieve pressure on the shipyard was announced.

2.50 Mr King informed the committee that when he was the project manager for the AWD, the advice to government was that the developmental solution would take three years longer and have a significant cost risk.⁵⁴ He explained:

The alliance and ASC, who are the managing shipbuilder on the project, were comfortable that they had the skills, capacity and history to take on this task. We had done the analysis. The obvious truth is that...they do not have the capacity...it is demonstrated now that that cannot all come together in the required time frame. So my advice to government at the time was wrong.⁵⁵

2.51 The committee heard similar evidence during its visit to South Australia, where it was told that the Melbourne shipyard was caught out by a cold start in production and a change in management with a smaller workforce remaining. In other words, the government was misled as to readiness of the project to begin, as well as the contractor's real capacity to do the job.

2.52 The main problem with the AWD stemmed from Defence not fully comprehending the ship building component—its 'understanding was shallow'.⁵⁶ The lessons to be learnt go directly to having full knowledge of the capacity of the contractor's shipyards and, based on detailed evaluation, reaching agreement on a schedule that achieves the right balance between commencing production and completing design.⁵⁷

M113 Upgrade Program

2.53 The M113 Upgrade Program—stretching and upgrading the ADF's existing M113A1 fleet which includes seven different variants—was originally an

53 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, pp. 185–186.

54 *Committee Hansard*, 7 October 2011, pp. 27–28.

55 Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 30 May 2011, p. 119.

56 Committee's visit to South Australia.

57 ANAO Report No. 20 2011-12, *2010-11 Major Projects Report*, p. 195.

\$850 million project that has increased to over \$1 billion with the addition of another 81 vehicles under the Enhanced Land Force initiative. In May 2008, the then Parliamentary Secretary announced that the M113 Upgrade project had effectively dealt with the technical problems that had plagued it in its developmental stages. He stated 'we now have a straightforward path to delivering all operational vehicles as originally specified' and which the contractor, Tenix, had undertaken to do by December 2010 in accordance with the original contract.⁵⁸ The minister was clearly misled because this subsequently turned out not to be the case and the final delivery date for the vehicles has been pushed back several times to well beyond the December 2010 date.

2.54 The project was placed on the projects of concern list in December 2007 and removed in May 2008. According to the 2012 audit report, it was taken off this list on the basis of Defence advice that included 'incorrect information regarding production rates and assurances that schedule delay would be recovered'. It found:

Subsequent advice to government in support of the 2008 proposal to acquire a further 81 upgraded APCs and the proposal to extend the AM variant also contained incorrect and unrealistic advice relating to schedule production rates and projections. There have been several such instances of incorrect and/or unrealistic reporting on project status, and issues affecting this, over the life of this project.⁵⁹

2.55 Indeed, the audit report noted that 'accurate information about the status of the project and the full implications of key issues was not always communicated to senior Defence decision-makers and the Government.'⁶⁰

2.56 The audit also commented on capability. For example, it noted that, although the upgraded M113 represented an improvement on the older vehicle and was considered fit-for-purpose when the minor upgrade was first proposed 20 years ago, it 'now lags behind armoured infantry vehicles in use with other armed forces'.⁶¹ It stated further that the development and delivery of the vehicle has occurred in isolation from the development of some of the fundamental inputs to capability.⁶² This last observation highlights the potential for mishaps when the capability manager is removed from the acquisition and sustainment activities.

58 The Hon Greg Combet MP, Parliamentary Secretary for Defence Procurement, Speech, Defence Watch Luncheon, 22 May 2008.

59 ANAO Audit Report No. 34 2011–12, *Upgrade of the M113 Fleet of Armoured Vehicles*, paragraph 31.

60 ANAO Audit Report No. 34 2011–12, *Upgrade of the M113 Fleet of Armoured Vehicles*, paragraph 47.

61 ANAO Audit Report No. 34 2011–12, *Upgrade of the M113 Fleet of Armoured Vehicles*, paragraph 15.

62 ANAO Audit Report No. 34 2011–12, *Upgrade of the M113 Fleet of Armoured Vehicles*, paragraph 35.

2.57 The committee indeed wonders how the project, based on a fundamental misunderstanding of the scale of the engineering task involved, survived for so long.⁶³

Lightweight Torpedo Replacement Project

2.58 The Lightweight Torpedo Replacement Project (JP 2070) was originally intended to acquire a replacement lightweight torpedo and support systems, and integrate the torpedo onto the Adelaide and ANZAC Class Frigates, AP-3C Orion Maritime Patrol Aircraft, Seahawk helicopters and Super Seasprite helicopters. As the project encountered difficulties, the scope was reduced to exclude the Super Seasprite, and then later to exclude the Orion and the Seahawk, leaving just the two surface platforms.

2.59 At the conclusion of Phase 1—where Defence 'effectively removed all competition to the MU90 torpedo'⁶⁴—Defence and DMO believed the MU90 to be an off-the-shelf acquisition already in service with other navies. In fact, the MU90 was a developmental project not yet in service.⁶⁵ According to the ANAO, the Lightweight Torpedo project provides yet another example of where an inadequate description of risk during the capability definition and planning phase of a project contributed to problems with delivering the required capability. Other difficulties experienced by the project included issues similar to those experienced by other troubled projects:

- insufficiently rigorous cost estimates;
- inadequate project planning and management;
- failure to appreciate the risks involved with integrating the weapon onto multiple platforms—inadequate understanding of the weapon and its developmental status; and
- inadequate planning of testing and acceptance.⁶⁶

2.60 The committee also understands that subject matter experts within Defence, the Aircraft Stores Compatibility Engineering Agency (ASCENG), highlighted the developmental nature of the MU90 and the integration issues. DMO ignored its recommendation to conduct basic pre-contract evaluations such as 'fit checks'.

2.61 Acknowledging the long history of project management difficulties and failures, the then Minister for Defence Materiel and Science stated in May 2010 that

63 See Ms Fran Holbert, *Committee Hansard*, 12 June 2012, p. 3.

64 ANAO Audit Report No. 37 2009–10, *Lightweight Torpedo Replacement Project*, p. 21.

65 ANAO, *Submission 22*, paragraph 19.

66 ANAO Audit Report No. 37 2009–10, *Lightweight Torpedo Replacement Project*, pp. 15–16 and *Submission 22*, paragraph 19.

the project should have been 'better defined, costed and managed'.⁶⁷ The final acceptance test and evaluation firings in November 2010 were not a success. In May 2011, Mr King explained that the project was 'a disappointment':

What we have determined since through very thorough analysis is a number of failures of the whole system, not the torpedo, that we have to address. These appear to be minor in a technical sense but major in impact in the deployment of the weapon. They relate to the construction of the torpedo tubes, which need to have a modification carried out...but we have come up with a fix that means we can use that tube both for the Mark 46 and for these MU90 torpedoes.

There were two other matters that contributed to the failures. One was to do with the handling trolleys...to make it align accurately to the torpedo tube when you insert it into the tube so that you do not do any damage to the torpedo. The third element...is one connector cable...What we have found is only one variant of that cable works 100 per cent reliably on the MU90 torpedo, so we are ordering in that particular cable.⁶⁸

2.62 In February 2012, Mr King informed the committee that the project was close to coming off the projects of concern list.⁶⁹

2.63 Again, the committee asks why this failure was not communicated and why it proceeded for so long without someone in the organisation taking action. The committee is not aware of the Chief of Navy's role, if any, in this project.

2.64 The ANAO undertook performance audits of the Super Seasprite and Lightweight Torpedo projects in recognition that they were intended to deliver significant capabilities that the ADF required but, at the time the audits were planned, had already encountered difficulty in delivering the required capability.⁷⁰ For both projects, capability has not been delivered as planned or has been delayed by more than a decade, with significant associated costs. The committee considers ten years delay as scandalous.

2.65 Similar, to the Super Seasprite, the Lightweight Torpedo project demonstrates that from the earliest stages of this project risk was not managed, which then set it on a troubled course. Most particularly, it would seem that the advice on risk by domain experts was not communicated to, or appreciated by, others in the chain. Thus both projects indicate that somewhere in this management structure sound technical advice

67 Senator the Hon John Faulkner, Minister for Defence, media release, 'ANAO Audit of Lightweight Torpedo Replacement Project', MIN52/2010, 19 May 2010.
<http://www.defence.gov.au/minister/90tpl.cfm?CurrentId=10322> (accessed 1 March 2012).

68 Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 31 May 2011, p. 62.

69 Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 15 February 2012, p. 72.

70 ANAO *Submission 22*, paragraph 18.

from subject matter experts was misinterpreted, reinterpreted or disregarded by non-experts. The Wedgetail and MRH-90 projects highlight the same shortcomings.

The Collins Class Submarine Reliability and Sustainability Project

2.66 The Collins Class Submarine Reliability and Sustainability Project is a program of upgrades to the Collins Class platform systems. The project has exposed problems, some of which can be traced back to the initial acquisition phase, highlighting important lessons for the purchase of the future submarines. The acquisition of the new submarines is discussed in the following chapter.

Common problems—costs, schedule slippage and reduced capability

2.67 The committee has used the above examples, which do not represent an exhaustive compilation of problem projects, to illustrate the main reasons for projects derailing. Currently, Defence's main concern is with schedule slippage.

Schedule slippage

2.68 The ANAO 2010–11 Major Projects Report continued to report on schedule slippage as the most significant challenge for the DMO and industry contractors. It noted that this failure to maintain projects on schedule affected the time that a capability was available for operational release and deployment. The DMO data indicated that at 30 June 2011, the total time for the 28 major projects to achieve their FOC date was expected to be almost one-third longer than was originally planned.⁷¹

2.69 The ANAO recorded that the total schedule slippage for the 28 major projects was expected to be 760 months when compared to the initial prediction when first approved.⁷²

2.70 The table below shows that 88 per cent of the total schedule slippage across the major projects was made up of projects approved prior to the DMO's demerger from the Department of Defence in July 2005. ANAO indicated that this improvement was 'a positive indicator of the benefits that the DMO, as a specialist and sustainment organisation, was able to bring to complex Defence procurement'. It noted, however, the addition of projects in the post 2005 July group that were at 'a comparatively early stage'. According to the ANAO, the effect of 'new' projects, are less likely to have yet recorded schedule slippage.⁷³

71 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 20.

72 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 2.35.

73 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraphs 27–28 and 2.48 and Table 8, p. 70.

Table 2.1: Project slippage: Project's approved pre and post DMO demerger⁷⁴

Project	No. of months between Approval and Original date	No. of months between Approval and 30/6/11 FOC date	No. of months slippage between Original FOC and 30/6/11 FOC date
Projects Approved pre-July 2005			
Sub Total Projects Approved pre-July 2005	1 421	2 092	667
Percentage of Total—Projects Approved pre-July 2005	57%	64%	88%
Projects Approved post-July 2005			
Sub Total Projects Approved post-July 2005	1 070	1 163	93
Percentage of Total—Projects Approved post-July 2005	43%	36%	12%
Total—All Projects With Slippage	2 491	3 255	760

2.71 The committee also notes that slippage is measured from approval at Second Pass. The committee discusses delays in the earlier stages of a project in chapters 3 and 13.

Costs

2.72 According to the 2011–12 Major Projects Report, the total budgeted costs for the 28 major projects included in the report increased by \$7.8 billion (20 per cent) since the projects received second pass approval. This figure comprised: price (materials and labour) variation increases of \$7.6 billion; real variation (such as scope changes and budget transfers between projects) increases of \$3.7 billion; and foreign exchange rate movement decreases of \$3.5 billion. The DMO reported that all projects were 'delivering capability within the approved budget'.⁷⁵

74 Taken from table 8 in ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, p. 70.

75 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 24 and p. 103.

2.73 Although costs do not appear to be a major concern, the committee has referred to Mr Pappas' observation that 'an inherent risk is attached to slippage—project team salaries and allowances, administrative costs and capability related costs, such as a capability gap, or maintaining an ageing capability' (see paragraphs 2.17–2.18). ANAO indicated that schedule delays increase the overall cost of project delivery because both the DMO and industry staffing and administrative resources are tied up for longer than planned. Air Commodore (retired) Ted Bushell, who has analysed all four Major Project Reports (MPRs), drew attention to a statement in the 2010–11 MPR that none of the major projects had exceeded their approved budgeted cost. The MPR noted, however, that 'the cost of schedule slippage provided for in budgetary adjustments can be significant'. According to Air Commodore (retired) Bushell, 'It is amazing that projects that are one to six to ten years late, all still come in within their approved budgeted cost'.⁷⁶

2.74 The committee's view is that the simple assertion made by Defence that costs do not increase as the result of slippage is not credible. In fact, the committee also notes that during the JCPAA's recent consideration of the 2010–2011 ANAO's MPR, the funding is no longer available for post 2010 projects once delivery date has been exceeded. This development demonstrates that government has been forced to impose a discipline which will force the absorption of over run costs.⁷⁷

Capability

2.75 In relation to capability, the DMO expects to deliver almost all capabilities associated with the major projects in the 2011–12 MPR.⁷⁸ This assessment by the DMO was outside the scope of the ANAO's review. Nevertheless, the ANAO stated that it 'continues to engage with the DMO on developments regarding materiel capability measures and the revised Materiel Acquisition Agreement (MAA) framework'. It does so, in order to enhance its 'understanding of the DMO's assessment of its own performance in the delivery of the materiel element of key capabilities'.⁷⁹ The ANAO stated:

There are some indications that the assessment of capability is overly optimistic in some cases. Analysis of the information available indicates that some critical capabilities have been unavailable or are expected to be delivered below that initially approved. For example, numerous recent issues in the sustainment of the submarine capability have gained significant public and political attention, and have limited the availability of this capability to the Navy. Similarly, in respect of the MRH90 Helicopters, ARH Tiger Helicopters and Air to Air Refuel projects, the DMO's

76 Air Commodore (retired) Bushell, *Supplementary Submission 3D*, Executive Summary p. 3.

77 Joint Committee of Public Accounts and Audit, *Joint Report 429, Review of the 2010-11 Defence Materiel Organisation Major Projects Report*, May 2012.

78 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 21.

79 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 21.

assessment of the capability expected to be delivered has declined in 2010–11 as compared to the original planned key capabilities for these platforms.⁸⁰

2.76 The committee takes note of ANAO's observation about achieving expected capability and Defence's possible over optimism, and hence remains very sceptical about such assurances. In drawing attention to slippage in the Tiger Reconnaissance Helicopter, the Lightweight Torpedo Replacement, and the MRH-90 Helicopter projects, the ANAO stated that the delays could effectively introduce a capability gap or require extension to the life of the platform they are to replace.⁸¹

Conclusion

2.77 Recent Defence projects have experienced very serious problems, many of which should have been avoided, or at the very least anticipated and managed better. Clearly, in some cases the government had not been advised of the extent of the difficulties. The causes of the problems include:

- risk not managed properly or inadequately described during the capability definition and planning phase—in general poor risk analysis in the early stages of a capability development, which in some cases carried through into the acquisition and delivery phase;
- risk identified by domain or subject matter experts but downplayed, misinterpreted, or ignored by more senior non-experts—important to ensure that risk remains visible all the way to senior decision-makers and remains so until the senior decision-maker is satisfied that it is being actively and appropriately managed;
- failure to appreciate the challenge of being a customer of a first-of-type program;
- underestimation or understatement of the level of technical maturity with programs proceeding without the requisite level of knowledge—numerous examples where developmental projects were deemed incorrectly to be MOTS;
- inadequately planned and scoped developmental projects;
- underestimation of complexity of integration;
- inadequate specifications;
- incorrect, inaccurate or unrealistic reporting to, or failure to advise, senior Defence officials or government on keys matters relating to a project—the reporting regime lacks transparency;

80 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 22.

81 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 2.39.

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- poor understanding of overseas certification standards and Australia's requirements and the importance of having sufficient resident project staff, with the requisite qualifications and experience, to ensure overseas contractors understand Australian requirements and expectations;
 - inadequate planning of testing and acceptance;
 - failure to identify support requirements;
 - inadequate testing of contractors claims with a 'shallow' understanding of industry's capacity to deliver;
 - poorly designed contracts with little incentive for the contractor to deliver value for money;
 - misunderstandings between DMO, capability manager and contractors; and
 - shortfalls in skilled labour.

2.78 The committee accepts that the reasons outlined above for the poor performance of a number of Defence's major acquisition projects are well understood. The committee sees no purpose in dwelling on the facts any further—they speak for themselves. The committee, however, uses these identified failings as a starting point from which to examine and determine the deeper underlying causes for poor performance. Moreover, the committee notes that these failures are the same as they have always been, with little sense of improvement except for the genuine OTS purchases which are so relied on by Defence to claim improved performance.

Chapter 3

Lessons to be learnt

3.1 Whilst the former chapter considered mistakes made with acquisitions well underway, this chapter identifies some of the concerns being expressed about projects still in their infancy. The committee does so in order to test Defence's consistent assertion in evidence that all the failings identified by the committee so far are in the past and that since Mortimer and 2010 a new leaf has been turned. As many of the problems experienced by the older projects took root in the early stages of their development, this chapter considers the newer ones and whether the lessons emanating from the more advanced projects are being heeded. Also, in light of the government's announcement that a new Defence White Paper is to be produced in the first half of 2013, the committee reviews the 2009 White Paper to ascertain whether there are lessons to be drawn from this document that relate to acquisition.

Early research and analysis

3.2 Experience from previous projects underline the need for early risk analysis and have warned against underestimating a project's complexity from the very start. A number of analysts, however, have pointed out that some capability has been prescribed in the White Paper before the effect on project cost and risk has been established.¹

New submarines—SEA 1000

3.3 In relation to the new submarine project, the White Paper stated that:

...the Government has decided to acquire 12 new Future Submarines, to be assembled in South Australia. This will be a major design and construction program spanning three decades, and will be Australia's largest ever single defence project. The Future Submarine will have greater range, longer endurance on patrol, and expanded capabilities compared to the current Collins class submarine. It will also be equipped with very secure real-time communications and be able to carry different mission payloads such as uninhabited underwater vehicles.

The boats need to be able to undertake prolonged covert patrols over the full distance of our strategic approaches and in operational areas. They require low signatures across all spectrums, including at high speeds.²

3.4 In that regard, Dr Davies recently noted that the future submarine has a 'suite of capabilities that have never been combined into a conventionally-powered submarine'. He made the point that the prescribed submarines will 'set a new

1 Dr Andrew Davies, personal capacity, *Committee Hansard*, 12 August 2011, p. 3.

2 Department of Defence, *Defence White Paper 2009*, paragraphs 9.3–9.4, p. 70.

benchmark for conventional submarine capability' which the RAND Corporation has identified as 'historically being when the largest jumps in the cost occur'.³ He informed the committee that:

The future submarine is probably the best example of the top-down process driving us down a particular path. We seem to be moving towards designing and constructing what I describe with tongue only slightly in cheek as a conventionally powered nuclear submarine, with all the cost and risk that will inevitably ensue from that. Maybe that is the right solution for Australia, but I think it is far too early to rule out other possible solutions.⁴

3.5 A former Chief of Army, Professor Peter Leahy, noted that the rationale for 12 submarines has received 'scant contestable justification' in the White Paper and the decision to acquire the 12 large, indigenous designed submarines requires 'further consideration and validation before its merits can be judged against other competing demands'.⁵ Mr Derek Woolner concluded that drawing on the experience of the Collins Class to inform the future submarine project, will require, amongst other things, that the objectives of the new class of submarine be 'thoroughly developed and clearly enunciated'.⁶ He made the point that by first pass approval, the nature of the project would already have been decided. Thus, in his view, the relevant stakeholders including industry need to be engaged at the very start of the project when the operational concept is developed and contestability needs to take place in relation to that operational concept. Mr Woolner held that once the government has decided on the combat system and weaponry for the future submarine, such a decision would go 'a long way to deciding the nature of the project all the way through to the procurement strategy and the inherent risks involved in that'. He noted, for instance, there is a very heavy presumption that it will continue to go with the Raytheon system because it has US naval support and a growth path attached to it. Therefore:

Once the government agrees that what it wants is a weapons system that will allow the services to proceed in a certain way...that limits the options about which way you want to proceed and that in turn gets you into a very narrow field of risk management.⁷

3.6 Mr Woolner highlighted a lesson to be learnt from the Collins Class submarines experience—by prioritising the combat system, the Collins grew from a 2,000-tonne boat to over a 3,000-tonne boat as the process of identifying what

3 Dr Andrew Davies, 'What price the future submarine?', ASPI, 2 March 2012.

4 Dr Andrew Davies, personal capacity, *Committee Hansard*, 12 August 2011, pp. 1–2.

5 Peter Leahy, 'Shifting Priorities in National Security: More Security Less Defence', *Security Challenges*, vol.6, no.2 (Winter 2010), p. 6.

6 Derek Woolner, 'Taking the Past in the Future: The Collins Submarine Project and Sea 1000', *Security Challenges*, vol. 5, no. 3 (Spring 2009), p. 71.

7 Mr Derek Woolner, *Committee Hansard*, 12 June 2012, p. 29.

equipment could fit on the boat led the growth of the design 'not just to mount the equipment but to supply the cooling and energy and so on'.⁸

3.7 Dr Davies noted that the government will not be in a position to decide what the future submarine will do until it 'understands all the potential costs and benefits of the various types of submarine that it might choose to acquire'. He held that the 2009 White Paper has unravelled because 'the ambition that was articulated in there was not informed by the resource and project risk implications'.⁹ Dr Brabin-Smith supported this position and raised the question as to why the new submarines were to be 'so much more capable than the Collins class were designed to be, noting that the characteristics of the Collins class were chosen from the quite careful analysis of the needs of the defence of Australia and operations in our region'.¹⁰

3.8 The legislation committee was informed in May 2010 that \$15.4 million had been allocated for early studies and research in relation to the future submarine project of which \$9 million had not been spent.¹¹ In mid-December 2011, the Defence Minister announced that the government had approved the release of Requests for Information to three overseas submarine designers offering military-off-the-shelf (MOTS) designs. It had also entered into a contract with Babcock to study the establishment of a land based propulsion systems test facility to inform engineering development of the future submarines.¹²

3.9 In order to deliver the new capability submarines in time to replace the Collins Class, preliminary work to prepare first pass approval in late 2013/early 2014 is clearly a demanding priority.

3.10 Built at a cost of \$8.5 billion (based on today's dollar), the six Collins Class submarines have presented a 'succession of problems' including capability shortfalls and reliability issues. According to Dr Davies and Dr Thomson, these lessons need to be applied to the future submarines including the fact that the Collins 'still lacked a working combat system and its diesel engines were highly unreliable' despite a series of engineering fixes in place.¹³ In their view:

Even with an effective combat system and the modern torpedoes fitted, the combination of poor reliability and operational restrictions (not to mention

8 Mr Derek Woolner, *Committee Hansard*, 12 June 2012, p. 30.

9 Dr Andrew Davies, *Committee Hansard*, 12 June 2012, p. 48.

10 Dr Richard Brabin-Smith, *Committee Hansard*, 12 June 2012, p. 48.

11 Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 31 May 2010, pp. 49-50.

12 Minister for Defence and Minister for Defence Materiel, 'Progress of future submarine project', 13 December 2011, <http://www.minister.defence.gov.au/2011/12/13/minister-for-defence-and-minister-for-defence-materiel-progress-of-future-submarine-project-2/> (accessed 7 May 2012).

13 Andrew Davies and Mark Thomson, 'Mind the gap: getting serious about submarines', ASPI, April 2012, p. 2.

low submariner numbers and limited crew experience) must limit the practical employment of the boats. So, although the Collins class is at least allowing the Royal Australian Navy (RAN) to rebuild its submarine workforce, its usefulness as practical weapon of war is uncertain. The picture only gets worse if the vessels' unexpected high maintenance demands and consequent poor availability are taken into account.¹⁴

3.11 Dr Davies and Dr Thomson argued that initial design work and acquisition strategy development for the SEA 1000 needs to start immediately 'so that the costs, benefits and risks of the competing options—new design, evolved Collins and MOTS—can be assessed'.

3.12 Given that the future submarines are due for second pass consideration around 2017,¹⁵ analysts and industry representatives are voicing concerns about up-front investment in terms of preliminary research and capability studies and the risks of schedule slippage which could result in a capability gap. There are rising fears that the new submarines will not be built in time to replace the Collins Class which will reach the end of its planned life between 2022 and 2031 unless its lifespan is extended. However, Dr Andrew Davies and Dr Mark Thomson argued that ASC, the Navy and DMO do not know how much longer the Collins can be kept in service, despite 17 years of fleet operations.¹⁶ They noted most recently that there had been little progress in the three years since the 2009 Defence White Paper in relation to the future submarine and 'time is running out for a seamless transition to another class'.¹⁷ In an April 2012 paper, they concluded:

We are already past the point at which a force of that size and capability can be in place even by the mid-2030s.¹⁸

3.13 On 3 May 2012, the Prime Minister announced that \$214 million would be provided for the 'next stage' of the future submarine project and be directed towards future studies and analysis to inform the government's decisions on the design of the

14 Andrew Davies and Mark Thomson, 'Mind the gap: getting serious about submarines', ASPI, April 2012, p. 4.

15 Prime Minister, Minister for Defence, Minister for Defence Materiel, Joint Media Release—'Next stage of future submarine project announced', 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-minister-for-defence-materiel-joint-media-release-next-stage-of-future-submarine-project-announced> (accessed 7 May 2012); Vice Admiral Matt Tripovich informed the committee in May 2010 that second pass was 'still about six years away'. Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 31 May 2010, p. 46.

16 Andrew Davies and Mark Thomson, 'Mind the gap: getting serious about submarines', ASPI, April 2012, p. 6.

17 Andrew Davies and Mark Thomson, 'Mind the gap: getting serious about submarines', ASPI, April 2012.

18 Andrew Davies and Mark Thomson, 'Mind the gap. getting serious about submarines', ASPI, April 2012.

next submarines.¹⁹ Studies will be conducted across three areas including design, scientific and technological studies, and the future submarine industry skills plan. It should also be noted that a detailed Service Life-Evaluation Program (SLEP) study is currently underway to determine whether the lifespan of the Collins can be extended beyond their expected life. In this regard, Dr Davies and Dr Thomson emphasised the importance of 'rigorous and independent recommendations' in relation to the SLEP given that, and as the previous chapter attested:

Over the past two decades, Defence has consistently underestimated the cost, schedule and risk of projects—especially during the early planning stages...Given this reality, it's imperative that the Defence Materiel Organisation, as the government's defence acquisition adviser seek independent advice on the conduct of and recommendations emerging from the SLEP and be able to present the advice and recommendations to government. To do otherwise would risk a repeat of the costly F-111 end-of-life saga.²⁰

Skills, infrastructure and working relationships

3.14 In relation to skills, industry representatives noted the rundown of skills in relation to the submarine capability and emphasised the need to start immediately to build and develop necessary skills.²¹ Mr John O'Callaghan, Australian Industry Group Defence Council, informed the committee that:

We need to use the lead time between now and when the construction actually starts to develop that skill base again, at a much higher level than previously was the case.²²

3.15 This observation from industry seems bland. The RAND study noted gaps in both industry and government between the number of experienced design personnel available to work on a new submarine program and the number required. The study identified two important gaps in the skills base needed for the new submarines. It drew attention to the fact that:

19 Prime Minister, Minister for Defence, Minister for Defence Materiel—Joint Media Release—'Next stage of future submarine project announced', 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-minister-for-defence-materiel-joint-media-release-next-stage-of-future-submarine-project-announced/> (accessed 7 May 2012).

20 Andrew Davies and Mark Thomson, 'Mind the gap: getting serious about submarines', ASPI, April 2012, p. 19.

21 See for example, Mr Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 17 and Mr John O'Callaghan, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 16.

22 Mr John O'Callaghan, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 16.

- existing personnel are fully employed supporting the Collins Class or other RAN programs and cannot contribute to a new submarine design without risk to ongoing RAN programs; and
- there were too few personnel with skills anticipated to be important in the design of a future submarine, in particular few if any resources in the discipline of large complex program management and in specific areas related to propulsion, fluids, electrical systems, cost estimation, testing and planning and production.²³

3.16 Dr Davies informed the committee that the Collins Class submarine project was instigated in the 1980s when the 'naval engineering capability was far greater than it is today within Defence, and we still got into trouble'. He noted that whilst most of these problems were eventually solved, it was a difficult process. Yet:

In the last couple of years we have had reports from Coles about the submarines, from Rizzo about the amphibious fleet and from the ANAO about naval capability, and they have all said that Navy does not have the engineering capability to handle complex projects. Until we fix that, our ability to even assess risk, let alone manage it, will not be up to the task.²⁴

3.17 The RAND study also noted infrastructure shortfalls and cited a facility to test integrated propulsion and energy alternatives as one critical deficiency that Australia would need to address.²⁵ As noted earlier, a study has just commenced into the establishment of a propulsion test facility. Moreover, in his report on the sustainment of the Collins Class, Mr John Coles referred to the importance of the various strands of activity operating as an 'Enterprise' to deliver submarine capability. Thus, the four elements, DoFD, DMO, RAN and industry should be working together to deliver the right level of submarine availability at the right place. Unfortunately, he gained the impression of 'highly-charged, difficult and often hostile relationships between the parties'.²⁶

3.18 The committee is very concerned about the current unease expressed by a number of defence analysts regarding decisions already taken on the 12 new submarines. It is equally concerned about the government and Defence applying the lessons to be learnt on risk analysis during the early stages of capability development, as underlined in the previous chapter. The RAND study, *Learning from Experience—Lessons from Australia's Collins Submarine Program*, identified a number of lessons

23 RAND, *Australia's Submarine Design Capabilities and Capacities: Challenges and Options for the Future Submarine*, prepared for the Australian Department of Defence, 2011, pp. xxxviii–xli.

24 Dr Andrew Davies, personal capacity, *Committee Hansard*, 12 June 2012, p. 32.

25 See paragraph 3.8 where the committee noted a study to be conducted on the establishment of a land based propulsion systems test facility.

26 John Coles, *Collins Class Sustainment Review, Phase 1 Report*, p. 9.

from the previous submarine project, especially that the 'most important aspect of a new program entails the decisions made very early in the program'.

3.19 The committee agrees that all the lessons in the study must be applied assiduously to SEA 1000 but in particular that decisions must be fully informed by knowledge of the risks and consequences.

Recommendation

3.20 Because this project is still at an early stage, and based on the RAND study, the Coles Report, independent defence analysts and the past performance of major Defence acquisition projects, the committee recommends that government and Defence need to start work immediately to:

- **ensure that the program is directly managed by Chief of Navy supported by the ASC and DMO where relevant, the scientific community and the public—support must be both external to the program and internal within the navy and submarine community;²⁷**
- **avoid early lock-in through premature weapons systems choices;**
- **ensure that the capability sought is available and minimises developmental risks;**
- **take drastic action to address the serious skill shortages identified by RAND before a decision on assembly in Australia is made, regardless of type and design;**
- **ensure that the program is open and transparent—full disclosure throughout the program is necessary to obtain government, industry and public support;**
- **involve experienced people in key management positions—this requires a strategy to grow people so they are experienced in various disciplines—a top-level strategic lesson must be implemented far in advance of any specific program; and**
- **listen to technical community concerns about risk—the technical community, supplemented by outside expertise from industry and allied technology partners as necessary, should understand the state of technology and the degree to which a new design extends that technology.²⁸**

3.21 The committee believes that the experience with the Collins Class and the enormous challenges in being a parent Navy should focus the minds of key decision-

27 RAND, *Learning from Experience, Volume IV, Lessons from Australia's Collins Submarine Program*, 2011, p. xiii.

28 A number of these recommendations were taken from, or based on, RAND, *Learning from Experience, Volume IV, Lessons from Australia's Collins Submarine Program*, 2011, pp. xiii–xiv.

makers on possible pitfalls. There are early signs, however, that Australia is at risk of repeating the same cycle of blind hope. The committee is concerned that even at this Needs phase of SEA 1000 there are worrying indications that government and Defence have not heeded lessons from past experience, especially the critical importance of basing decisions on a sound and clear-eyed understanding of potential costs, benefits and technical risk. The tardy start to upfront investment for capability studies, the prescriptive nature of the project's inclusion in the White Paper and the short timeframe in which to acquire the requisite skills do not bode well for project SEA 1000. The committee accepts the view that no solution will be perfect or simple. An important lesson for government to consider is that, except in the specific case where another military is already using equipment that is good enough for Australia (for example C17), evolution is lower risk and lower cost than leaping to a new standard via evolved MOTS or new build. Procrastination and hoping to reduce risk by dragging out decisions allows skills, workforce and knowledge to dissipate thereby driving up risk.

Recommendation

3.22 The committee recommends that government and Defence respond publicly to the committee's criticisms made in this report with respect to lessons not learnt, and outline the detailed process and all the options on which current planning on submarines is taking place.

Offshore combatant vessel

3.23 The offshore combatant vessel (SEA 1180) was another project in the White Paper indicating that close attention needed to be paid to past experiences.

3.24 In the 2009 White Paper, the government announced that it had decided to rationalise the Navy's patrol boat, mine counter measures, hydrographic and oceanographic forces into a single modular multi-role class of around 20 Offshore Combatant Vessels combining four existing classes of vessels. The concept involves the use of modular unmanned underwater systems for both mine countermeasures and hydrographic tasks. The government envisioned the systems to be containerised and portable modules capable of being used in any port or loaded onto any of the Offshore Combatant Vessels or other suitable vessels. According to the White Paper, the future vessel would be able to:

...undertake offshore and littoral warfighting roles, border protection tasks, long-range counter-terrorism and counter-piracy operations, support to special forces, and missions in support of security and stability in the immediate neighbourhood.²⁹

3.25 Aware of developmental projects and their troubled history, the committee asked Defence about the extent of consultation around the concept of a multi-role

29 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraphs 9.19–9.22.

vessel, especially with industry. Air Marshal Harvey informed the committee that engagement with industry would be held progressively. He understood that the user requirement had been released to industry. According to the Air Marshal:

The capability maritime development team is working on the project proposal. Certainly feedback I have had is that it is possible; it is challenging, certainly, but the potential developments going to the common vessel type do make it worthwhile pursuing that. In parallel DSTO are doing their studies, we increasingly engage with industry as we go through and, if it turned out not to be feasible, we would include that in advice to government. The advice we have so far is that we believe it is feasible and it is worth pursuing.³⁰

3.26 When asked about the multi-role vessel, representatives from the prime contractors in Australia informed the committee that a greater level of discussion needs to take place at the outset of translating strategic requirement into operational requirement. In their view specialist expertise on the project could be brought to bear at that point. They noted that at this stage there was no competition and industry could add a lot of value, such as bringing forward lessons learnt from similar projects offshore where they might have experienced difficulties combining the requirements for three vessels into a single vessel. The representatives noted that as part of a multinational company they can draw on their international experience.³¹ One stated:

All of the comments made by industry in those early encounters can be validated independently and separately...the fact that the information is not injected at the early stage and not used is a problem and I think it loses value for the taxpayer.³²

3.27 Having noted the importance of early engagement, the representatives made clear that they had not been consulted on the feasibility of the multi-role vessel proposal 'at any level of detail that was useful'. One stated clearly that not one had been brought in to discuss the detail of what was possible and what was not.³³

3.28 Dr Davies and Dr Thomson concurred with this view about the value of engaging industry in the early stages of capability development to ensure that planning is informed by a clear understanding of what's available technologically and commercially. Dr Thomson explained that industry would be free to pitch their ideas and Defence could find out what opportunities existed in a whole range of different areas. For example, he asked—'is it going to be a mine hunter and is it going to be a patrol boat...is it going to be all things to all people'. He suggested that if you talk to

30 *Committee Hansard*, 5 October 2011, p. 15.

31 *Committee Hansard*, in camera.

32 *Committee Hansard*, in camera.

33 *Committee Hansard*, in camera.

people who build boats for a living, 'you might actually temper your aspirations...good information up front would have tempered that sort of thing'.³⁴

3.29 According to Dr Davies and Dr Thomson, the 'risible suggestion in the 2009 White Paper and subsequent DCP' to replace the Navy's current patrol boats, mine hunters and hydrographic ships with a single class of vessels' demonstrated the 'risk of planning in an information vacuum'.³⁵

Industry engagement

3.30 More generally, on the matter of industry engagement, Mr Ben White of the Australian Business Defence Industry Unit underlined the importance of industry receiving 'clear signals and a degree of confidence to encourage it to invest in the defence market'.³⁶ Similarly, in August 2011, Mr Christopher Burns of the Defence Teaming Centre informed the committee that if a good submarine were required, Australian industry needs to be involved in the design of the submarine and that 'we needed to have started designing that, and the dollars needed to be invested in designing that, last year'.³⁷ However, in June 2012, the committee heard evidence from Mr O'Callaghan that while industry had been 'frozen out' three or four years ago, the reinvigoration of the Capability Development Advisory Forum (CDAF) and environmental working group, has led to 'high-level industry engagement'. Such engagement has contributed to a 'better baseline for identifying and managing the sorts of risks associated with the more complex projects coming on stream'.³⁸ Moreover, in relation to SEA 1000, Mr O'Callaghan expressed the view there had been improvements over the past twelve months with the early engagement of key industry CEOs while a separate panel had been established for the project based on the CDAF arrangement. In light of the delays engaging industry, the committee remains unconvinced that finally 'high-level industry engagement' has been achieved.

3.31 The committee considers the early engagement of industry more fully in chapter 14.

Committee view

3.32 Despite Defence's assurances, the committee is very concerned that the submarine project to date contains the same seeds of failure that have bedevilled defence procurement for years. The importance of the early stages of capability development cannot be underestimated. Whilst recent announcements in relation to

34 *Committee Hansard*, 12 August 2011, p. 11.

35 *Submission 8*, p. [2].

36 Mr Ben White, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 16.

37 Mr Christopher Burns, Defence Teaming Centre, *Committee Hansard*, 11 August 2011, p. 17.

38 Mr John O'Callaghan, Australian Industry Group Defence Council, *Committee Hansard*, 12 June 2012, pp. 27–28.

studies to consider procurement options for the future submarines together with studies in relation to an industry skills plan is encouraging, they reflect troubling signs that one of the centrepiece projects listed in the White Paper is yet to undergo thorough analysis and consideration. The lack of information on costings is particularly concerning. The same concerns about the multi-role combat vessels project are emerging—first pass approval is due financial year 2014–15 to financial year 2015–16.³⁹

3.33 The committee also recognises the need for Defence to build public support for the new submarine program. It believes that much work needs to be done to earn the confidence of the Australian people in this project—transparency by government and Defence is important. The new White Paper presents an opportunity for the government and Defence to start to provide assurances that the decisions relating to SEA 1000 and SEA 1180 are based in sound, robust and fully considered analysis.

Funding Force 2030

3.34 Given that the White Paper contains only vague funding detail, questions have been raised persistently in relation to the costs of realising the 2009 White Paper, including that of the future submarine. According to Mr Barrie, white papers need to spell out new capability requirements and how these judgements drive portfolio funding requirements as well as industry development.⁴⁰ The 2009 White Paper, however, lacks any detailed funding measures other than the commitment to a major investment program to be partly funded by savings measures outlined in what is now the Strategic Reform Program (SRP).⁴¹ The 2009 White Paper devotes only a page and a half to funding expressed in 'broad brush statements of average percentage growth to the budget, and imperatives about savings (or cost redirections) intended to balance the books'.⁴² Mr Barrie stated that the lack of funding information in the White Paper was:

...exceedingly disappointing because it seriously undermines the centrality of the White Paper in guiding decision making, and the purpose of the quinquennial approach of writing Defence White Papers.⁴³

3.35 ASPI's *Defence Budget Brief 2009–10* noted in this regard that:

39 Department of Defence, *Defence Capability Plan*, public version, 2012, p. 210.

40 Chris Barrie, 'The Defence White Paper 2009 and Australia's Maritime Capabilities', *Security Challenges*, vol. 5, no. 2 (Winter 2009), p. 53.

41 Chris Barrie, 'The Defence White Paper 2009 and Australia's Maritime Capabilities', *Security Challenges*, vol. 5, no. 2 (Winter 2009), p. 58.

42 Chris Barrie, 'The Defence White Paper 2009 and Australia's Maritime Capabilities', *Security Challenges*, vol. 5, no. 2 (Winter 2009), p. 58.

43 Chris Barrie, 'The Defence White Paper 2009 and Australia's Maritime Capabilities', *Security Challenges*, vol. 5, no. 2 (Winter 2009), p. 53.

It's disappointing, therefore that 'the most comprehensive White Paper of the modern era' has been followed by the least comprehensive Defence budget papers of the past decade. Between the White Paper and the Defence budget papers we are offered only the barest details of how the government will fund its expansive plans for the defence force. Despite claiming to have a 'fully costed' and 'affordable' financial plan stretching twenty-one years out to 2030, actual funding has only been disclosed for the first four.⁴⁴

3.36 When questioned at Senate Estimates in June 2009, the then CDF, Air Chief Marshal Angus Houston, stated that it would cost somewhere between \$245 and \$275 billion (in 2009–10 budget dollars) to realise *Force 2030*.⁴⁵ Dr Thomson argued that despite claims that the 2009 White Paper is fully funded and affordable, information relating to long-term funding and the costs of proposed major acquisitions remains confidential. There was, for example, no official estimate of the cost of the future submarine project beyond the DCP figure of 'greater than \$10 million'.⁴⁶ Yet, estimates provided by Sean Costello and Andrew Davies suggest that the actual cost will be approximately \$36 billion (in 2009 dollars) based on historical trends.⁴⁷ Dr Thomson continued that:

Not only does this make it hard to assess the prospects of delivering the much-vaunted Force 2030, but it's a marked departure from the transparency accompanying the 2000 White Paper.⁴⁸

3.37 Dr Thomson concluded that the absence of concrete schedule targets for initiatives in the White Paper was a means to avoid being held to account for delivering the plan.⁴⁹ Moreover, information on the planned cost of projects above \$1.5 billion in value is not disclosed. Therefore, the public are not in a position to judge whether some planned acquisitions including the future frigates represents value for money.⁵⁰ According to Dr Thomson, there has been 'erosion in transparency' in

44 Australian Strategic Policy Institute, *The Cost of Defence. ASPI Defence Budget Brief 2009-10*, p. vii.

45 Air Chief Marshal Angus Houston, Senate Foreign Affairs, Defence and Trade Legislation Committee, Estimates, *Committee Hansard*, 3 June 2009, p. 111. See also The Chief of the Defence Force and the Secretary of Defence, 'Strategic Reform Program Media Roundtable' transcript, 16 April 2010, <http://www.defence.gov.au/media/SpeechTpl.cfm?CurrentId=10155> (accessed 1 March 2012).

46 Mark Thomson, *Serving Australia: Control and administration of the Department of Defence*, Special Report, Australian Strategic Policy Institute, June 2011, issue 41, p. 41.

47 Sean Costello and Andrew Davies, *How to buy a submarine: defining and building Australia's future fleet*, Australian Strategic Policy Institute, October 2009, p. 2.

48 Mark Thomson, *Serving Australia: Control and administration of the Department of Defence*, Special Report, Australian Strategic Policy Institute, June 2011, issue 41, p. 41.

49 Mark Thomson, 'Defence Funding and Planning: Promises and Secrets', *Security Challenges*, vol. 5, no. 2. (Winter 2009), p. 96.

50 Leigh Purnell and Mark Thomson, *How much information is enough?* The disclosure of defence capability planning information, prepared by the Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 40.

relation to the DCP over the period 2001–2009 with 'progressively greater clouding of both schedule milestones and cost estimates'. Despite an independent external review in 2009 recommending considerably greater transparency, Dr Thomson argued that only marginal improvements had been made and that:

As things stand, the cost of a planned project can increase by hundreds of millions of dollars and its timing can slip by years, without the taxpayer being any the wiser.⁵¹

3.38 Dr Davies and Dr Thomson observed:

A comprehensive examination of the disclosure of capability planning information was undertaken by ASPI in 2009 (Purnell and Thomson, 2009). Unfortunately, the government only partially accepted the recommendations. As a result, Defence continues to avoid scrutiny by obscuring costs and timings.⁵²

3.39 Furthermore, the public defence budget is also subjected to repeated changes which makes it almost impossible to understand how costs have changed and how funding is being spent specifically. As Dr Thomson noted:

Apart from making it difficult to assess the efficiency of the department, this prevents the external verification of more than \$20 billion in saving being claimed under the Strategic Reform Program.⁵³

3.40 In light of concerns about transparency, Dr Richard Brabin-Smith suggested that there was scope to increase the usefulness of the Portfolio Budget Statements (PBS) as they 'omit any worthwhile discussion of content'. Similarly, he argued in favour of greater explanation in the Defence Annual Reports which tend to be 'general and descriptive'.⁵⁴

3.41 Mr Derek Woolner observed that in the absence of increased defence funding, achieving all the objectives of *Force 2030* would become very difficult and 'aligning acquisition with central objectives for strategic policy increasingly important'. He stated that a more open and contested process for making decisions should contribute in turn to better policy outcomes and provide the Parliament, for the first time with a meaningful role in the process.⁵⁵ This could be in the form of a Defence Board which would provide a forum for dissenting voices and for contesting proposals, schedules and costings. The minister would sit on this board.

51 Mark Thomson, *Serving Australia: Control and administration of the Department of Defence*, Special Report, Australian Strategic Policy Institute, June 2011, issue 41, p. 41.

52 Andrew Davies and Mark Thomson, *Submission 8*, p. 3.

53 Mark Thomson, *Serving Australia: Control and administration of the Department of Defence*, Special Report, Australian Strategic Policy Institute, June 2011, issue 41, p. 41.

54 Dr Richard Brabin-Smith, *Submission 2*, p. 5.

55 Mr Derek Woolner, *Submission 34*, p. 11.

3.42 In July 2011, the Minister for Defence announced a series of initiatives associated with, or in addition to, the ongoing SRP including that of 'improving and reforming Defence's planning and budgeting process'.⁵⁶ The initiative was triggered by the \$1.6 billion underspend for the 2010–11 financial year which, according to the minister, 'represented a significant failure in Defence's planning and budgeting processes'. The underspend, however, could also be due to the failure of government to make timely decisions. With regard to the underspend, ASPI's 2011 Budget Brief held that:

If Defence couldn't predict what it needed for this year's budget, it's hard to accept claims of multi-billion savings years ahead based on a long-range understanding of business-as-usual costs.⁵⁷

3.43 While recognising as essential the need to improve Defence's budget estimation process, the minister, in his announcement, emphasised that defence funding must be based on realistic and reliable forecasts. The minister noted that a 'comprehensive stocktake and health check of the Defence budgeting system' was to be undertaken which would consider 'all budget processes, estimation methods and underlying budget assumptions'. In addition, the minister highlighted that Defence had been instructed to 'consider ways in which more reliable information on defence costs, savings and performance could be made public to enable enhanced transparency, scrutiny and analysis'.⁵⁸

3.44 Based on the number of previous reviews that have not produced tangible positive improvements, the committee is not confident that this latest one will be any different. Even so, the committee suggests that this stock take and health check consider how to ensure that individuals within this organisational structure, made up of an excessive number of groups, are made accountable for the elements of the budget they hold or use.

New Defence White Paper

3.45 On 3 May 2012, the government announced that it was bringing forward the development of a new defence white paper a year earlier than planned for delivery in the first half of 2013. The paper would take into account Australia's place in the region, economic issues and the drawdown of forces from Afghanistan, East Timor

56 Minister for Defence, the Hon. Stephen Smith MP, 'Paper presented to the Australian Strategic Policy Institute', National Gallery, Canberra, 19 July 2011, <http://www.minister.defence.gov.au/2011/07/19/paper-presented-by-the-minister-for-defence-stephen-smith-to-the-australian-strategic-policy-institute-national-gallery-canberra/> (accessed 1 December 2011).

57 Mark Thomson, *The Cost of Defence, ASPI Defence Budget Brief 2011-2012*, May 2011, p. viii.

58 Minister for Defence, the Hon. Stephen Smith MP, 'Paper presented to the Australian Strategic Policy Institute', National Gallery, Canberra, 19 July 2011.

and the Solomon Islands.⁵⁹ The government identified ten core capabilities in the 2009 White Paper to which it remained committed, including the future submarine, JSF and AWD projects. The multi-role combat vessel project is in the 2012 DCP.

3.46 Five days later, on 8 May 2012, the Defence budget was released for 2012–13 with a \$5.454 billion cut across the forward estimates starting with \$971 million in 2012–13.⁶⁰ ASPI's Budget Brief observed:

This year's cuts are just the last in a long line of hits that the Defence budget has taken since the release of the 2009 Defence White Paper. To date, \$10.6 billion worth of promised funding from the first five years of White Paper has been deferred to parts unknown in the future, \$10 billion in savings (above and beyond those promised by the SRP) have been cut from funding promised between 2011 and 2021, and another \$2.5 billion of new initiatives over the decade have been imposed upon Defence without funding or offsets. Yet, somehow, over the past three years Defence has managed to hand back \$1.6 billion in unspent funds.⁶¹

3.47 Responding to the announcement of a new white paper, ASPI's Budget Brief observed that the prospects for delivering *Force 2030* before the assigned deadline had been remote for some time. The brief argued that, at a minimum, the 2013 White Paper must do three things which the 2009 White Paper failed to do, including:

- make a clear choice about Australia's strategic role in the future;
- design a defence force that is consistent with that role; and
- commit the necessary resources to the task.⁶²

3.48 The brief also took the view that the government's commitment in relation to the submarines was 'wavering—with the White Paper's vision of highly capable new-generation submarines now being evaluated against less capable and far less expensive existing off-the-shelf designs'.⁶³ It concluded that Defence had not been able to deliver new equipment projects at the pace envisaged in the 2009 White Paper and that the decade-long financial plan at the heart of the 2009 White Paper was flawed, 'having been built on an incomplete understanding of the true cost of developing and delivering capability'.⁶⁴

59 Prime Minister, Minister for Defence and Minister for Defence Materiel, Joint Press Conference, Canberra, 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-minister-for-defence-materiel-joint-press-conference-canberra-2/> (accessed 19 June 2012).

60 Mr David Lewis, *Committee Hansard*, Estimates, 28 May 2012, p. 6.

61 Mark Thomson, *The Cost of Defence*, ASPI Defence Budget Brief 2012–13, May 2012, p. vii.

62 Mark Thomson, *The Cost of Defence*, ASPI Defence Budget Brief 2012–13, May 2012, p. ix.

63 Mark Thomson, *The Cost of Defence*, ASPI Defence Budget Brief 2012–13, May 2012, p. ix.

64 Mark Thomson, *The Cost of Defence*, ASPI Defence Budget Brief 2012–13, May 2012, p. vii.

Committee view

3.49 The committee recognises the importance of both accuracy and transparency in relation to the Defence budget and strongly encourages initiatives that deliver both to the budget. The committee's concerns in relation to the accuracy of Defence costings are reflected throughout this report in terms both of the overall budget and individual projects. In relation to transparency, the committee emphasises that greater detail needs to be provided in the White Paper, PBS and Defence Annual Reports. The committee urges the government to ensure that the 2013 White Paper heeds the criticism levelled at its predecessor and provides clarity on future capability including funding commitments underpinned by comprehensive analysis that defence analysts have been calling for.

Slippage of approval rate at first and second pass

3.50 A number of defence analysts have also expressed concern about the rate of approval at first and second pass and the implications of a delayed process on meeting the Defence objectives contained in the 2009 White Paper. Dr Thomson and Dr Davies stated in April 2011:

Despite concerted attempts to obscure the planned schedule for the acquisition and entry into service of capabilities set out in the 2009 Defence White Paper, it was clear that things were slipping behind schedule as early as May last year (Thomson, 2010). Since then, the situation has deteriorated further.⁶⁵

3.51 The Executive Director of ASPI, Major General (retired) Peter Abigail stated in August 2011 that *Force 2030* would 'probably be delivered late' and that:

The deferrals of billions of dollars in procurement funding and delays in decision-making for major capability projects have already put the Defence Capability Plan well behind schedule. The bow-wave of unspent funds now laying five-to-ten years out dwarfs the expenditures achieved over recent years.⁶⁶

3.52 In its Defence Brief of May 2012, APSI noted that while only three years had passed after the 2009 White Paper, major equipment acquisition projects were not being approved or delivered on schedule even after a 2011 rescheduling.⁶⁷ Reporting on progress against the last publicly released DCP from 2011, it recognised that the rate of second-pass approvals had improved considerably in 2011–12 but that first-pass approvals remained 'badly behind schedule' which had created what it described

65 Andrew Davies and Mark Thomson, *Submission 8*, p. 2.

66 Major General (retired) Peter Abigail, 'Australia's Next Defence White Paper: An ASPI Update', Address to Global Forces 2011 Conference, 11 August 2011, p. 8, http://www.aspi.org.au/mp3/conference2011/Abigail_AU_next_defence_white_paper.pdf (accessed 18 January 2012).

67 Mark Thomson, *The Cost of Defence, ASPI Defence Budget Brief 2012–13*, May 2012, p. 118.

as a 'bow wave' of approvals over the next few years. In relation to the approval rate overall, the brief concluded that:

Not all of the problems with the 2011 version of the DCP reflect the accumulated impact of slow approvals. As we showed in detail last year, the original 2009 DCP contained a manifestly unrealistic pattern of planned approvals. The initial decade of the *Force 2030* venture was doomed from the start.⁶⁸

3.53 From the beginning of the committee's inquiry, there has been a growing chorus of concern from submitters including defence analysts, defence industry and former defence personnel suggesting that there were serious problems in relation to schedule slippage. The Returned and Services League of Australia Limited (RSL) stated that the procurement procedures outlined in the White Paper were failing and that the DCP required first or second pass approval by the National Security Committee of Cabinet (NSCC) of some 50 projects a year or about 5 meetings but that the current average was less than 10 a year. The RSL argued that the now laborious capability process has resulted in their being 'no possible chance of the current Defence Capability Plan being achieved'.⁶⁹ The Victorian Government held that \$8.5 billion in Defence spending had been deferred since the release of the 2009 White Paper. As additional evidence of the slippage or slow down in the procurement process, it noted that in 2007–08 the value of defence projects approved by government was \$26.5 billion while in the three years from 2008–09 to June 2011, the value of projects approved was likely to fall below \$10 billion.⁷⁰ To amplify this point, the Victorian Government pointed out that the initial schedule to meet the timetable of the 2009 DCP 'required a total of 60 project approvals (first and second pass), while the actual number approved was 25'.⁷¹

3.54 When Defence returned \$1.6 billion of unspent funding in mid-2011, it became apparent to many defence analysts that the schedule for modernising the ADF articulated in the 2009 White Paper had fallen so far behind 'as to be implausible'.⁷² James Brown, Military Fellow at the Lowy Institute, held that Australia's defence capability was on a 'steady downward trajectory' and that:

The equipment-purchasing schedule required to achieve Force 2030 was presumably finely calibrated with defence industry capacity. Defence is now struggling to keep up. That problem is only going to get worse thanks to a recent decision to put all minor projects (those worth \$8-20 million) through the detailed two-pass approval process. That adds 105 minor

68 Mark Thomson, *The Cost of Defence, ASPI Defence Budget Brief 2012–13*, May 2012, p. 119.

69 The Returned and Services League of Australia, *Submission 5*, p. 1.

70 Victorian Government, *Submission 27*, p. 5.

71 Victorian Government, *Submission 27*, p. 5.

72 Mark Thomson, *Serving Australia. Control and administration in the Department of Defence*, Special Report, Australian Strategic Policy Institute, June 2011, issue 41.

projects to the existing 140 major projects waiting to be submitted to Government for approval.⁷³

3.55 Mr Woolner noted that the 2011–12 Budget saw a substantial change of policy for the funding of Defence's acquisition emanating from continued underspending on major capital equipment programs. He held that:

The accumulation of problems within individual acquisition projects has compounded and has come to be represented by a continuing failure to spend annual appropriations for major military equipment and to achieve the future spending levels projected in the additional estimates. There is now evidence sufficient to suggest that this trend in acquisitions management threatens the achievement of central policy objectives.⁷⁴

3.56 In stark contrast, however, Defence Secretary, Mr Duncan Lewis informed the committee on 13 June 2012 that:

We are improving outcomes in delivering Defence capability. There were a record number of government project approvals last year: 49 projects approved, in contrast to 28 projects approved the year before...Since 2000 there has been a doubling of the number of projects delivered on time. Schedule slippage has been reduced from 50 per cent in the year 2000 to about 30 per cent in 2007 and continues to improve.⁷⁵

3.57 In this regard, the committee notes the rather confused message about approval rates especially Defence's use of the term. During evidence, Air Marshal Harvey noted that nine projects had been approved in the first three months of 2011 and, together with other projects in the pipeline progressing to government, 'would give a strong indication that Defence would get well above that 28 project approval for the year. He then referred to the 28 approvals in terms of first pass, second pass, combined passes and other passes associated with projects such as intermediate passes.⁷⁶

3.58 It would seem that only a fraction of the approvals have led to funds flowing to industry. Most were interim approvals that just served to keep the process going. As mentioned earlier, Dr Thomson noted in his 2012 Defence Budget Brief that the pace of second-pass approvals had improved substantially in 2011–12, 'although some of the approvals were "one-off" non-DCP projects'. Even so, he found that first-pass approvals were 'badly behind and overall:

73 James Brown, 'ADF: Aspirational Defence Force', Lowy Institute for International Policy, 12 May 2011, [http://www.lowyinterpreter.org/post/2011/05/12/Force-2030-An-Aspirational-Defence-Force-\(ADF\).aspx](http://www.lowyinterpreter.org/post/2011/05/12/Force-2030-An-Aspirational-Defence-Force-(ADF).aspx) (accessed 23 January 2012).

74 Derek Woolner, *Submission 34*, p. 14.

75 Mr Duncan Lewis, Secretary, *Committee Hansard*, 13 June 2012, p. 21.

76 *Committee Hansard*, 7 October 2011, p. 31.

On the basis of recent experience, the planned approval of projects is manifestly unachievable.⁷⁷

3.59 The committee notes Defence's assurance about increased approval rates but has no confidence, based on performance to date, that it represents any real improvement. In fact, such statements may be an expression of optimism which infects Defence explanations. The committee therefore remains extremely concerned at project schedules and the worsening pattern of delay.

Reason for delayed approval rates

3.60 To this stage, the committee has established that there are delays in project approval but without any real understanding of the cause or causes such as:

- Defence not confident that they have reduced risk enough to present submission to Minister/Cabinet; or
- Minister unwilling to make decision or unable to get priority for Cabinet to consider.

3.61 In the committee's view, only when the opportunity cost of delays is identified (transparently) will there be pressure to:

- have the key stakeholders meet and use the Projects of Concern resolution approach to agree a costs/capability/schedule/risk trade-off such that the submission can be ready for Cabinet in accordance with the agreed (DCP) schedule; and
- have Cabinet make it a priority to consider defence capability issues.

3.62 The slow rate of approvals has a particular effect on industry. It undermines industry's confidence in Defence planning and compounds the difficulties caused by uneven flows in demand. This matter is considered in greater depth in chapter 14.

Committee view

3.63 The White Paper sets in train an acquisition program that has a life spanning many decades, involves a huge amount of taxpayers' funds, has serious implications for Australia's serving personnel and ultimately the nation's strategic wellbeing. It is important that this 'corner-stone document' is based on thorough analysis and serious deliberation so that it provides the firmest of foundations for Australia's future defence force. The committee is concerned that, despite lessons to be learnt from advanced projects, some of the newer ones in the White Paper have not received the appropriate amount of consideration, including consultation with subject matter experts and defence industry. This lack of expert independent advice and contestability at this

77 Mark Thomson, *The Cost of Defence, ASPI Defence Budget Brief 2012–2013*, May 2012, p. 119.

early stage means that decisions may have been made without the benefit of rigorous analysis or industry experience.

3.64 The scant information provided on funding Australia's acquisition program and the slow rate of approval underscores the importance of the government ensuring that despite the time pressure, the 2013 White Paper presents a detailed, realistic and achievable plan for Australia's capability development program.

Recommendation

3.65 The committee recommends that the 2013 White Paper is prepared in such a way that all procurement proposals are costed and scheduled realistically and that Defence undertake comprehensive consultation with industry before decisions on inclusion are made, or alternately, a green paper is issued in advance for broader and open public consultation.

Recommendation

3.66 The committee recommends that commencing next financial year, Defence publishes as an addendum to its portfolio budget statements, all the current financial detail of planned capability from the time of inclusion in the DCP, right through to contract completion and provision for sustainment, for all projects over \$30 million for total procurement and lifelong sustainment.

Chapter 4

Challenges for defence procurement

4.1 Defence projects for the acquisition of major capital equipment face an array of internal and external forces and influences that generate uncertainty about the extent to which they will meet their objectives.¹ High levels of unpredictability give rise to risk.² In this chapter, the committee examines the main challenges to the success of an acquisition project. It looks at the sources of uncertainty relating to the procurement of major capital equipment both in a world-wide context and more specifically in Australia. In this context, the committee looks at recent literature on risk management in defence procurement and its emphasis on the central role that such practices have in successful acquisition.

Large, complex and costly undertakings

4.2 The acquisition of major defence capital assets is of a scale and complexity that presents 'formidable and ever-increasing challenges'.³ The recent UK Ministry of Defence's strategy for procurement reform noted that 'acquisition isn't easy'.

It involves running large numbers of projects, many of them big and complex. Many are also at the leading edge of technology and innovation.⁴

4.3 Australia's experience is no exception. Indeed, according to a study by the Helmsman Institute, defence projects in Australia are of a level higher in complexity than projects in Australian organisations in other sectors.⁵ It found further that defence projects are not only more complex but that generally Defence is managing a higher number of these complex projects during any given period compared to others in Australia:

Most corporate and government organisations may have one or two 'Organisationally Complex' project[s] underway at any one time, and once

1 All organisations face internal and external factors that pose a risk to their objectives. See Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009, p. iv.

2 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 3.

3 Ministry of Defence (UK), *The Defence Strategy for Acquisition Reform*, Presented to Parliament by the Secretary of State for Defence, February 2010, Foreword by Lord Drayson.

4 Ministry of Defence (UK), *The Defence Strategy for Acquisition Reform*, Presented to Parliament by the Secretary of State for Defence, February 2010, paragraph 1.3, p. 6.

5 The DMO engaged the Helmsman Institute to assess the complexity of major Defence acquisitions. Helmsman evaluated 32 projects and delivered its final report in December 2009.

every five to ten years a sector may have a 'Nationally Complex' level project.

Defence will have numerous 'Organisationally Complex' projects, several 'Nationally Complex' projects in any year, and may start one that is 'Nationally Significant' every ten to fifteen years.⁶

4.4 This degree of complexity is part of a continuing trend which is expected to increase. The study found:

For some of the more complex projects, such as the Air Warfare Destroyer, LHD and the new Submarine, the projects are in early phases and will continue to be a focus of Defence over the next planning horizon.⁷

4.5 Thus, complexity is unavoidable and risk inherent in any major Defence acquisition project.⁸ Technology is a key source of complexity.

Advances in technology and the importance of integration

4.6 The central role of technology and the constant quest for improvements pose significant challenges for defence procurement.⁹ The 2009 White Paper enunciated the government's objective of developing and maintaining a capability edge. It stated that, 'giving our forces a capability advantage is both desirable and necessary if it prevents conflict, or allows us to prevail in conflict, and minimises our casualties and materiel losses'.¹⁰ The paper reasoned that military modernisation, particularly in the Asia-Pacific region, and the proliferation of advanced military technologies will mean that Australia's ability to maintain a capability advantage will come under increasing pressure.¹¹ It recognised the need for Australia to maintain its necessary strategic capability advantage:

6 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [3]. ANAO also referred to this study when it acknowledged that major Defence capital acquisitions can be significantly more complex than large civil projects.

7 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [6].

8 See also comments by Dr Andrew Davies, about risk being a constant factor in Defence procurement. Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 5.

9 *ibid.* See for example, Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal*, 2005, vol 7, no. 4. p. 53.

10 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 8.53.

11 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 8.56.

Superiority in combat and other forms of military operations will hinge on continual advances in military technology...¹²

4.7 Sonartech Atlas noted that the rate of change in technology can be an issue in itself when trying to determine complexity, maturity and risk.¹³ Dr Richard Brabin-Smith also observed that science and technology in defence-relevant fields continues to develop, 'often at breath-taking speeds, especially in anything that is touched by electronics and computing'.¹⁴ Witnesses also noted the importance to Australia's national interests of maintaining a technological advantage at least in the areas of capability that are central to Australia's security. According to Dr Brabin-Smith, if it is accepted that Australia's strategic circumstances will become more demanding, Australia needs 'to ensure that Defence is close (or at least closer) to the leading edge of what is technically or technologically achievable—both at the time of acquisition and through in-service upgrades'.¹⁵

4.8 As a consequence, Defence will look to acquire capabilities that provide a competitive edge by anticipating tomorrow's technology. Sometimes Defence try to do this all at once with multiple 'new' and untried elements rather than incremental change. Keeping pace with these rapid advances adds yet another layer of complexity for Defence and the uncertainty of future advances increases the risk of 'things going wrong'.

Integration

4.9 At a time of rapid advances in technology, newly acquired assets or upgrades are intended to keep the nation's capabilities at the forefront of such developments. In this environment, integration presents significant challenges. Incorporating or assimilating sophisticated equipment into larger systems increases the degree of complexity. Mr Bruce Green, seven years as Deputy Secretary of Defence (Acquisition) for New Zealand, noted that large expensive military capabilities are a mixture of complex systems that need to come together to deliver the desired outcome. He explained that they can take years 'to develop and mature to a point where there is confidence that on any given day it is going to function as required'.¹⁶

4.10 Defence cannot escape this trend toward increasing complexity. According to one industry representative, Australia is 'increasing the net centrality' or interconnectedness of its capabilities. He was of the view that Australia is 'rapidly heading down the path where almost everything on the battlefield must be properly

12 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 17.1.

13 *Submission 13*, pp. 4–5.

14 *Submission 2*, pp. 3–4.

15 *Submission 2*, p. 3.

16 *Submission 20*, pp. 4–5.

interfaced or integrated'.¹⁷ He estimated that 39 other programs in the DCP are connected in some way to the LHD's capability ranging from helicopter through to communications, command and control, and medical equipment projects.¹⁸ The need to have joined up capabilities of projects that are themselves highly sophisticated adds to the complexity and increases risk of problems emerging. A chartered professional engineer with over 30 years experience in project management observed:

...increased risk is frequently reflected in the number of issues that arise when new command and support system capabilities, often associated with different platforms, are brought together and expected to work seamlessly. It is unresolved interface issues and the delays caused by the increased complexity of defence projects that have largely led to criticism of the management and governance in defence projects.¹⁹

4.11 DSTO concurred with the view that systems integration for defence projects—having them knit together smoothly—is a major challenge for both industry and Defence.²⁰ It should be noted, however, that on occasion Defence unnecessarily compounds things. The integration of MU90 on the AP3 was achievable as suitable interface 'boxes' existed. Defence decided to set its target being a joint integration of the Joint Air-to-Surface Standoff Missile (JASSM) as well as MU90. The delays to selecting JASSM and compounding impacts of having multiple suppliers and regulators involved made the task almost impossible and it was finally cancelled for the AP3.²¹

Changing geo-strategic environment

4.12 Advances in technology are also taking place in a world of shifting geopolitical and strategic situations. For example, the 2009 White Paper stated:

The ADF will be required to operate in an environment which is increasingly complex, as more potential adversaries will have access to a wider range of capabilities which are comparable to ours, or will be able to exploit vulnerabilities in ours.²²

17 *Committee Hansard*, in camera.

18 *Committee Hansard*, in camera.

19 Ed F. Blow, CPEng, Senior Associate and Managing Director Nielsen-Wurster Asia-Pacific, 'Managing Risks on Defence Projects Through the Use of CPM Scheduling—A Better Way', *Communiqué*, vol. 1.4, October 2006, http://www.nielsen-wurster.com/Email_Announcements/NW_Communique/NW_Communique_2006_OCT.html (accessed 2 February 2012).

20 Information conveyed during committee's visit to DSTO Edinburgh.

21 Private briefing.

22 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 17.2.

4.13 The principal drafter of the White Paper, Mr Michael Pezzullo, explained that in preparing the paper, the authors had to be aware of change over time—strategic environment, fiscal circumstances and the nature of technology.²³ Dr Brabin-Smith similarly referred to the imponderables of potential changes to geo-strategic circumstances over which Australia itself has little direct control. Australia also has no influence over the way emerging technology might alter aspects of warfare.²⁴ In his view:

These factors imply that, at least in some areas of defence capability, there will necessarily be greater technical and therefore acquisition risk: cost, schedule, and perhaps the level of capability that in practice proves to be achievable.²⁵

4.14 Thus, Defence is required to make decisions about future acquisitions and the upgrades of existing assets without full knowledge of the threats or budgetary constraints it is likely to face. This uncertainty is yet another source of risk to the successful performance of a Defence major acquisition project. Dr Brabin-Smith argued that as a consequence of this uncertainty there is 'a clear need for a robust and thorough approach to risk management: at the conceptual phase; during procurement; and in through-life support'.²⁶

Conspiracy of optimism

4.15 In this environment, defence organisations, with an eye to future developments and striving to maintain a technological edge, are drawn naturally to the latest in technology and to what might be possible. Mr Bruce Green suggested that contractors can at times exaggerate their ability to deliver complex systems.²⁷

4.16 Unwarranted confidence in the ability of industry to produce a capability is not, however, confined to the defence industry. Mr Green observed that an acquisition entity, without understanding the risks, can allow 'good ideas' for capability enhancement to become part of the procurement.²⁸ In this regard, Mr King referred to a culture in the whole Western world, whereby defence organisations and the nation want the latest capability they can get, as soon as possible and at the least expense. He

23 *Committee Hansard*, Estimates, 3 June 2009, p. 105. See also Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph. 1.11.

24 Richard Brabin-Smith, attachment to *Submission 2*, 'Defence and the Need for Independent Policy Analysis', *Security Challenges*, vol. 6, no. 2 (Winter 2010), p. 10.

25 *Submission 2*, p. 3.

26 *Submission 2*, p. 3.

27 *Submission 20*, p. 4. See also, Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 10.

28 *Submission 20*, p. 4.

explained that industry sometimes inadvertently feeds that desire by suggesting that very advanced technologies may come sooner than is really practical—a situation described as a conspiracy of optimism.²⁹

4.17 The temptation to overreach may be further encouraged by the predisposition to 'gold-plate' the operational requirements.³⁰ The Australian Association for Maritime Affairs attributed this tendency to the view that 'there probably won't be another similar building program for up to 20 years'.³¹ Australia is not spared from this over confidence in industry's ability to deliver unproven capability and Mr King stated that 'we need to do as much as we can to stop it'.³²

4.18 There are numerous safeguards against over optimism including having suitably qualified and experienced people critically analyse a proposed solution and identify risks associated with its acquisition. Another measure is to engage experienced project hardened individuals to review a project at critical stages of its development. These are discussed later in the report.

Long term ventures and extended timeframes

4.19 Moreover, decisions about these highly complex acquisition projects take place not only in a dynamic and uncertain technical and strategic environment but over an extended period. The time it takes from identifying a capability need or deficiency to when a decision is made on procurement and actual delivery spans many years.³³ As an example, Defence referred to project SEA 4000—Air Warfare Destroyer worth over \$8 billion—which took Defence around six years to develop the proposal.

4.20 In an age where technology is constantly changing, this long-term process, from identifying a capability need to developing and delivering it, means that science and technology priorities may no longer be current at the time of completion. Babcock stated that, given the complexity of defence projects, it is inevitable that definition of

29 See also *Committee Hansard*, 5 October 2011, p. 35.

30 See for example, Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 10.

31 *Submission 17*, p. 6. Two researchers looking at the UK's DoD also noted that 'an underlying assumption or a corporate conspiracy of optimism exists that the largest projects, either public or private, will not be cancelled despite poor project performance'. Young Hoon Kwak and Brian Smith, 'Managing risks in mega defense acquisition projects: Performance, policy, and opportunities', *ScienceDirect*, International Journal of Project Management, vol. 27 (2009), p. 819.

32 Joint Committee of Public Accounts and Audit, Defence major projects report, *Committee Hansard*, 28 February 2011, p. 11 and Foreign Affairs, Defence and Trade References Committee, Naval shipbuilding in Australia, *Committee Hansard*, 18 August 2006, pp. 5—51.

33 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 1.3.

the contract deliverables will evolve over the project's duration.³⁴ In this regard, another company, Sonartech Atlas, cited changes in computer software which can have substantial effects on procurement outputs and outcomes over longer term schedules. It noted:

When considered against the 10 year procurement lifecycle, the underlying technology may have undergone four possibly five iterations, from the time the project was included in the DCP up until the Government approves it at 2nd Pass, let alone introduction into service.³⁵

4.21 While in many cases advances in technology warrant changes to initial plans, there is also the increased risk of 'scope creep'. For example, Mr Green noted that a contractor or the military may suggest 'some new and emerging technology that may be a useful enhancement to the capability'. In his view, sometimes the change may be 'unavoidable' or simply a case where 'a component of a system may be a new model with enhanced performance'. He suggested that in this situation there are risks 'especially if the new model has not been fully tested or integrated into like capabilities'.³⁶

4.22 ANAO also noted the extended timeframe for procurement of major Defence capital equipment projects and the uncertainty generated by reforms that are implemented after a project has started. It cited the Lightweight Torpedo project which began just after the 1997 Defence Efficiency Review and was managed by the Defence Acquisition Organisation and then its successor, DMO. The project's management and review arrangements passed through the formation of Systems Program Offices (SPOs) and different phases of the project were subject to different approval processes, the most recent phases passing through the post-Kinnaird Review strengthened two-pass approval process.³⁷

4.23 Sonartech Atlas explained that longer schedules for acquisition can have a marked influence on the efficiency and effectiveness of the procurement activities, or 'more precisely the longer the exposure the greater the likelihood of an issue'.³⁸ The long lead time for complex projects also has implications for staff continuity with extended project schedules inevitably resulting in staff turnover which can disrupt the project's progression and, in some cases, its direction.³⁹

4.24 In this context of timeframes, defence organisations must also consider the through life operation and sustainment of an acquisition. The Australian Association for Maritime Affairs noted that an operational capability that has taken many years to

34 *Submission 15*, p. [1].

35 *Submission 13*, pp. 4–5.

36 Mr Bruce Green, *Submission 20*, p. 5.

37 *Submission 22*, paragraph 10.

38 *Submission 13*, p. 2.

39 *Submission 13*, p. 3.

deliver may then have to remain in service for a further 20-30 years. It observed further that throughout this period 'the surrounding operational environment continues to evolve'. The Association also pointed out that government consideration takes place in a changing domestic political, foreign policy and economic environment where scientific and technological developments continue at a rapid pace.⁴⁰

4.25 Clearly, as the length of an acquisition period grows the more difficult it can be to define and manage the procurement activities. Rapid advances in technology, staff turnover, reforms to the procurement process and shifting government policy and funding priorities add to the complexity of defence acquisition. There are ways of managing these extended timeframes such as having and adhering to specified timelines and striving for incremental increases in capability with lower complexity, risk and cost.

Self-sufficiency for Australia as a medium sized country

4.26 An important consideration that relates to Australia's security interests is the extent to which the nation should be self-reliant in providing for its own defence capabilities. The 2009 White Paper recognised that total self-sufficiency in defence industries would be impractical for a state the size of Australia. The government, however, has stated its commitment to ensuring that certain strategic capabilities remain resident in Australia.⁴¹ Thus, not only does Australia seek to be at the forefront of technology but must decide whether it wants to be self sufficient in the design, or build or maintenance and upgrade of a particular capability. The White Paper stated that in the current environment, 'Australia's self-reliant scientific and technological capabilities will become a relatively more critical element of our strategic capability advantage...'⁴²

4.27 A critical and important decision for government is to identify the areas in which it wants the country to be self-reliant. In its report on Naval shipbuilding and repair, the committee noted the challenges for Australia in endeavouring to reconcile its desire for self-sufficiency in areas deemed to be a national security priority with the practical limitations imposed by cost and technology.⁴³ Furthermore, the Helmsman

40 *Submission 17*, pp. 2–3. See also Richard Brabin-Smith, 'Defence and the Need for Independent Policy Analysis', *Security Challenges*, vol. 6, no. 2 (Winter 2010), pp. 10, attachment to *Submission 2*.

41 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 16.20.

42 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper 2009, paragraph 17.4.

43 Standing Committee on Foreign Affairs, Defence and Trade, *Blue water ships: consolidating past achievements*, December 2006, paragraphs 12.28–12.30. In this report, the committee considered the range of views about the connection between the need to construct a platform in Australia and the acquisition of the necessary knowledge, skills, experience and resources to support it throughout its life.

Institute referred to the government's policy on local manufacture. It noted that, in order to deliver the capability platform, many projects create local manufacturing capability which increases project complexity, in many cases 'quite significantly'.⁴⁴ The challenge then is for government to ensure that Australia with its small defence industry and limited budget has, at hand and in country, the skills and resources deemed essential to secure the national interest. The underestimation of industry's capacity in the Melbourne shipyards for the AWD is such an example, as is the predicted skills needed for the new submarines (see paragraph 13.7–13.10).

Marketplace developments

4.28 Largely outside Defence's control, the global defence market is another source of risk to a defence acquisition program. The increasing demands for improved capability at an affordable cost have produced dramatic shifts in the industry. For example, in many maritime nations, there has been a trend over many years towards consolidation from a larger industrial base with shipbuilders amalgamating to a few in number. The same cost pressures have resulted in increasing mutual interdependence among prime companies and also among major sub-prime contractors.⁴⁵ The committee found in 2006 that:

This trend toward business consolidations, partnerships and alliances cuts across industries and national borders as countries are finding that, especially with highly complex systems, they cannot be self-sufficient in all aspects of a ship's design and construction.⁴⁶

4.29 In its submission, Defence noted that its procurement takes place in a constrained marketplace which 'is changing in important ways that will impact future equipment acquisitions'. It explained:

Australia's major allies are increasingly developing single lines of development for complex platforms through spiral acquisition processes that require very early Australian engagement if our specific needs are to be taken into account. Highly complex and integrated weapons systems such as the F-35 fighter aircraft cannot be purchased and then developed to suit Australian needs within reasonable cost or risk parameters and there is no other suitable fifth generation fighter to choose from. While providing opportunities for Defence to be involved in the early stages of major new allied capabilities, this type of international acquisition process limits choice, and limits our ability to influence cost and the timing of equipment delivery.⁴⁷

44 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, [p. 10].

45 Standing Committee on Foreign Affairs, Defence and Trade, *Blue water ships: consolidating past achievements*, December 2006, paragraphs 2.9–2.12.

46 Standing Committee on Foreign Affairs, Defence and Trade, *Blue water ships: consolidating past achievements*, December 2006, paragraph 2.12.

47 *Submission 21*, p. 5.

4.30 As mentioned above, this situation is compounded by 'substantial consolidation in the global defence industrial base since the Cold War'. Defence observed that as the majority of Australian defence companies are subsidiaries of major foreign defence suppliers, Australia's defence industrial base is caught up in this international trend.⁴⁸

4.31 These developments create significant challenges especially for Defence's ability to retain skill sets required to be a smart customer.

Managing risk

4.32 Overall, defence acquisition is informed by a complex and changing strategic environment with key decision-makers keeping an ever-watchful eye on likely future developments.⁴⁹ This dynamic context, coupled with acquisition projects that span lengthy timescales, means that at the time a capability enters into service, it may no longer meet strategic imperatives.⁵⁰ Moreover, the current environment continues to present major difficulties for defence procurement—evolving requirements, increased emphasis on systems integration, globalisation, prolonged life cycles and rapid advances in technology.⁵¹ Drawing together a number of the factors that can influence the performance of a defence acquisition project, the Helmsman Institute found that given the trends that underlie the current complexity; it would 'comfortably predict that the future projects will increase in complexity'.⁵²

48 *Submission 21*, p. 6.

49 See for example, Bernard Gray, *Review of Acquisition for the Secretary of State for Defence*, October 2009, p. 64.

50 See for example, Bernard Gray, *Review of Acquisition for the Secretary of State for Defence*, October 2009, p. 66. A 2006 review by the Canadian Chief Review Services noted that the acquisition of capital equipment by the Department of National Defence, Canada, took in the order of 15 years—'a fact that has not changed in over 30 years despite continuous modifications to the acquisition system'. It noted further that Canada's allies also take the same amount of time. Chief Review Services, Canada, *Perspectives on the Capital Equipment Acquisition Process*, June 2006, no. 1258-150, p. i.

51 See for example, Fomin, Pavel, Mazzuchi, Thomas A. Dr; and Sarkani, Shahram Dr, 'Incorporating Maturity Assessment into Quality Functional Deployment for Improved Decision Support Analysis, Risk Management, and Defense Acquisition', *Proceedings of the World Congress on Engineering and Computer Science 2009*, vol II, WCECS 2009, October 20–22, 2009, San Francisco.

52 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [6].

Self-inflicted complexity

4.33 Clearly, there are many sources of often-unpredictable change that generate significant risks, particularly for large and complex defence acquisitions.⁵³ Indeed, the risks to the successful procurement of major defence assets are considerable and wide-ranging. Some countries, however, have recognised that projects for acquiring major capital equipment not only fall short in meeting those challenges but that their own practices add to or compound the problems. Unrealistic requirements, a lack of early systems engineering, acceptance of unreliable estimates based on overly optimistic assumptions about costs and timelines and the failure to commit adequate funding and poor contract management all contribute to poor outcomes.⁵⁴ A breakdown in just one area of a major capital procurement can have serious implications for the success of the project. The US Government Accountability Office (GAO) noted that unwarranted risks can undermine an acquisition in a number of ways. It found:

A poorly conceived acquisition is doomed from the outset, while a poor contract selection or an inadequate workforce can weaken the government's ability to manage and oversee the acquisition. Therein lies the challenge: it takes many things for an acquisition to succeed, while only one source of unmanaged risk can cause a poor outcome.⁵⁵

4.34 Many defence organisations worldwide acknowledge their own failings in their major acquisition projects. For example, the Canadian Auditor General found that for two major projects—the purchase of the Cyclone and the Chinook helicopters—National Defence had underestimated and understated the complexity and developmental nature of the intended aircraft. Further it had not developed full life-cycle plans and costs in a complete or timely way and had not fully complied with the oversight and approval framework established in its Project Approval Guide.⁵⁶ The United States (US) has also raised concerns about its procurement performance. The 2010 US *Quadrennial Defense Review Report* recognised that shortcomings in Defence's acquisition process placed the Department 'at risk of being unable to deliver the capabilities it needs, when it needs them, and at acceptable costs'.⁵⁷ Noting the importance of 'a healthy acquisition process', it stated:

53 See for example, Rita Creel and Bob Ellison, *System-of-Systems Influences on Acquisition Strategy Development*, Carnegie Mellon University, 2008, <https://buildsecurityin.us-cert.gov/bsi/articles/best-practices/acquisition/981-BSI.html> (accessed 4 January 2012).

54 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 2.

55 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, pp. 1–2.

56 Office of the Auditor General of Canada, *Report of the Auditor General of Canada to the House of Commons, Chapter 6 Acquisition of Military Helicopters*, 2010, pp. 2–3.

57 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 93.

The Department and the nation can no longer afford the quixotic pursuit of high-tech perfection that incurs unacceptable cost and risk. Nor can the Department afford to chase requirements that shift or continue to increase throughout a program's life cycle.⁵⁸

...we must not embark on programs with artificially low cost estimates, immature designs and technology, fluid requirements, excessive technical authority certification requirements, unstable budgets, and unsustainable procurement profiles.⁵⁹

4.35 The US Department of Defense noted that over recent decades and across multiple administrations, the Pentagon's acquisition system had developed major problems that hampered its ability to acquire critical platforms and capabilities in a timely manner and at acceptable cost. They include:

- the requirements for new systems are too often set at the far limit of current technological boundaries;
- the Pentagon's acquisition workforce had been allowed to atrophy, exacerbating a decline in the critical skills necessary for effective oversight; and
- the system of defining requirements and developing capability too often encourages reliance on overly optimistic cost estimates.⁶⁰

4.36 In many ways, the Australian Defence organisation is susceptible to the same shortcomings as its counterparts.⁶¹ The decision to integrate the MU90 torpedo onto the AP-3 Orion combined with JASSM integration is a notable example. The Helmsman Institute found that Australia's defence's projects were not only highly complex but a number of them indicated that 'Australia had taken on development challenges for solutions that more other defence forces had either given up on or had failed to deliver'.⁶² The report found:

While most observers interviewed understood the need to invest in solutions that would stand the test of time (in some cases a considerable life span), a number of projects raised concerns that the complexity was so high that the project was placed at risk of never delivering the required

58 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 76.

59 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 93.

60 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010, pp. 75–77.

61 The new submarine project is such an example, see chapter 3, paragraphs 3.2–3.5.

62 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [10].

capability, and failing to work. Some projects had to re-architect the solution midway into development at considerable expense and delay.⁶³

4.37 Indeed, in chapter 2 the committee detailed many of Defence's projects that have experienced self-inflicted problems—inadequate planning and scoping of the project, failure to appreciate the developmental nature of the project or complexity with integration, poor project management, underestimation of defence industry capacity, lack of skilled workforce, inadequate contracting arrangements, insufficient consideration of through-life support, and a breakdown in the relationship between the relevant service, DMO and the contractors. Organisationally, all these factors are fundamentally important. As one witness observed, 'In short, Defence/DMO have been able to keep Navy tied up in port to an extent not achieved by any enemy force'.⁶⁴

4.38 The recurring nature of the shortcomings is particularly concerning and suggests that lessons from previous troubled projects are yet to be learnt and that inadequate risk management may be at the heart of the problem. In the following chapters, the committee seeks to understand the factors behind poor performance and what can be done to change behaviour rather than process. To do so, the committee explores the fundamental components underpinning good governance and sound decision-making—risk management, adherence to policy and guidelines, accountability, contestability and the skills and experience of those engaged in defence acquisition including the quality of their analysis.

63 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [10].

64 Air Commodore (retired) Bushell, *Submission 3*, p. 8.

Part II

Risk and defence procurement

Defence organisations face particular and significant challenges in managing the procurement and sustainment of their major capital equipment. For decades they have been seeking ways through risk management to improve their performance in particular to contain costs, keep to schedule and achieve a technological advantage.

The Australian defence organisation confronts the same problems as those worldwide. Its major capital equipment acquisition projects are expensive, large and complex, span many years and strive to be at the forefront of technology. While Defence recognises these difficulties, it accepts that to provide leading edge capability, it must accept a high level of procurement risk. Too often this has meant increased process and decreased decision making by informed individuals who have been advised by subject matter experts. This strategy has failed to ensure the availability and effective employment of suitably qualified/experienced people and a system to ensure that their views are heard.

Many witnesses, including the Department of Finance and Deregulation, agree that risk is inherent to defence procurement but that a key consideration is to balance the need to meet unique or specific capability requirements against the likely increase in project risk. Dr Brabin-Smith also noted that the key for Defence is to be able to judge the best balance between strategic and technical risk. He acknowledged that Defence must accept and manage this risk by having a robust risk management strategy to undergird its acceptance of risk.

In Part II of the report, the committee examines the implementation of Defence's risk management strategies against recognised best practice. It compares Defence's stated policy on risk management and the advice or direction contained in its relevant guides on procurement with practice and actions. The committee's purpose in drawing these connections is to better locate the source of Defence's acquisition problems.

Chapter 5

Risk management and good governance

5.1 For many years, risk management has been recognised as an integral part of good governance and central to an organisation's management processes. Its aim is to improve organisational efficiency and effectiveness and to limit the potential for surprises.¹ Risk management involves the actions taken to ensure 'an organisation is conscious of the risks it faces, makes informed decisions in managing these risks, and identifies and harnesses potential opportunities'.² It is especially important for an organisation such as Defence whose acquisition program already faces external forces that create complexity and uncertainty. Indeed, Mr Derek Woolner observed that any engineering or construction project is 'about managing risk, whether it be in Defence or in private companies'.³

5.2 In this chapter, the committee examines risk management in Defence organisations and its role in improving performance in procurement, especially decision-making. The committee considers Defence's policy on, and the principles that underpin, its risk management.

Risk management in defence organisations overseas

5.3 Because the acquisition of major defence assets is a high risk activity, defence organisations recognise that sound management practices can reduce the potential for poor results. Countries, including the US, Canada and the United Kingdom (UK) have recently implemented reform programs to improve their defence procurement performances. Notably, they have singled out risk management as one of the areas needing greater attention. According to the US Government Accountability Office (GAO):

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- 1 Standards Australia/Standards New Zealand, *AS/NZS ISO 31000:2009, Risk management—Principles and guidelines*, 2009, paragraph A3.5. The literature on risk management as a discipline and 'a core area of business' is extensive. See for example: Economist Intelligence Unit, *Best practice in risk management: A function comes of age*, A report from the Economist Intelligence Unit sponsored by ACE, IBM and KPMG, 2007; Economist Intelligence Unit, *Closing the gap: The link between project management excellence and long-term success*, A report from the Economist Intelligence Unit, sponsored by Oracle, October 2009; and Economist Intelligence Unit, *Better information, better decisions: The risk and compliance challenge for financial institutions*, A report from the Economist Intelligence Unit, sponsored by SAP, December 2010.
 - 2 Comcover, *Better Practice Guide, Risk Management*, Commonwealth of Australia, June 2008, p. 5.
 - 3 Derek Woolner, 'Why Australia's defence procurement is lacking military precision', *The Conversation*, 5 July 2011, <https://theconversation.edu.au/why-australias-defence-procurement-is-lacking-military-precision-2136> (accessed 2 July 2012).

...it is only through the thoughtful management of risks throughout all phases of the acquisition process that successful outcomes can be achieved.⁴

5.4 The US Department of Defense (DoD) has put in place policies and practices designed to mitigate the key risks associated with acquisition. It wants to do so by ensuring a 'more rigorous assessment of alternatives, competitive prototyping, more frequent and effective program reviews, the prevention of requirements creep, independent assessment of "technology readiness," and better methods of testing and evaluation'.⁵ For example, the US *Quadrennial Defense Review Report* stated:

To reduce technical risk, we will conduct a comprehensive design review, including independent reviews, to certify that the technologies involved are sufficiently mature before any program can progress to the costly final phase—engineering and manufacturing development.⁶

5.5 In 2010, the Auditor-General of Canada highlighted the need to recognise that the acquisition of complex equipment 'brings with it unique risks and challenges that need to be properly identified and managed using an appropriate procurement strategy'.⁷ As one of the solutions to Canada's defence procurement problems, the Standing Committee on National Defence recommended that procurement strategies must not only identify risk, but also adopt strategies that inherently minimize risk. The government agreed with the recommendation. While suggesting that it would continue to improve its risk management, the government indicated that it was implementing a new policy on the management of projects including the requirement to consider project risk and the capacity to manage it.

5.6 The UK Ministry of Defence (MoD) recently acknowledged that to improve its overall capability it would, among other things, 'explore how to make further improvements to its project and programme management, including risk management'.

Risk management—best practice

5.7 Risk management policies, practices and tools continue to evolve and, over the years, international and country specific standards have established guiding principles to achieve best practice in this area. While the literature on this subject is

4 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes, 20 January 2010, p. 1.

5 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 93.

6 United States of America, Department of Defense, *Quadrennial Defense Review Report*, February 2010.

7 Office of the Auditor General of Canada, *Report of the Auditor General of Canada to the House of Commons*, Chapter 6 Acquisition of Military Helicopters, 2010, p. 25.

extensive,⁸ it demonstrates a broad consensus regarding the main steps and activities of a sound and effective generic risk management process.⁹ For example, the *Commonwealth Procurement Guidelines* indicate that risk should be 'built into an agency's procurement processes'.¹⁰ It states further that risk management involves 'the systematic identification, analysis, treatment and allocation of risk'.¹¹

5.8 Because of the wealth of literature on risk management and the general agreement on the fundamental principles that underpin an effective risk management regime, the committee saw no need to give detailed consideration to best practice in this area. It should be noted, however, that many witnesses highlighted the need for Defence to give close attention to identifying and mitigating risk during the early stages of the procurement process, especially during capability definition. In their experience, the consequence of any failure at this stage of the procurement has the potential to surface later in the acquisition process and to cause serious disruption to a project.¹²

5.9 Based on international and Australian literature, and with a particular focus on defence procurement, the committee notes that to be effective, risk management should or must be:

8 See for example, Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal* 2005, vol 7, no. 4; Department of Defence, Defence Science and Technology Organisation, Svetoslav Gaidow and Seng Boey, *Australian Defence Risk Management Framework: A Comparative Study*, Commonwealth of Australia, 2005.

9 See for example, Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal* 2005, vol 7, no. 4.

10 Attorney-General's Department, *Commonwealth Procurement Guidelines*, Commonwealth of Australia, December 2008, paragraph 6.8.

11 Attorney-General's Department, *Commonwealth Procurement Guidelines*, Commonwealth of Australia, December 2008, paragraph 6.7.

12 *Committee Hansard*, in camera. See also, Australian Industry Group Defence Council who indicated that although fundamental structures were about right, further attention needed to be given to earlier identification of risk associated with complex acquisitions. It recommended that Defence invest in Research and Development (R&D) early in the Capability Development process, with the Defence Science and Technology Organisation (DSTO) and industry working fully in partnership to realise the benefits. *Submission 10*, pp. 4–5. The ANAO found that 'Inadequate execution of the capability definition and planning phase unduly exposes Defence to the possibility of cost increases, capability reduction and schedule slippage'. *Submission 22*, paragraph 16.

- considered from the outset or formative stage of a project when critical decisions are made that have significant implications for the overall success of an acquisition and its through-life support;¹³
- an iterative process throughout the acquisition and sustainment of capital equipment involving the identification, analysis, mitigation planning, mitigation implementation and tracking and reporting of risk—consulting and communicating with all stakeholders on risk and risk management is important;¹⁴
- comprehensive, systematic and applied consistently across the entire organisation at the enterprise, business and operational level;
- broad-based ensuring that all the various factors associated with a defence procurement are assessed for risk—'even those considered as obvious need to be identified and treated'—budget, schedule, technical requirements, workforce, environmental, infrastructure, contract and stakeholder relations;
- fully integrated and embedded in an organisation's culture so that risk management policy and practice is part of management thinking and actions and permeates all levels of the organisation— enterprise level, function level or business unit level—senior managers in particular must show leadership and commitment and managers at all levels must take responsibility;¹⁵ and
- part of a continuous improvement system where experiences in risk inform revised risk assessment and management strategies—this means that lessons

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- 13 For example see Ian McPhee, Deputy Auditor-General for Australia, 'Risk Management and Governance', Speech, National Institute for Governance, Canberra, 16 October 2002, p. 2; Department of Defence, DSTO, Svetoslav Gaidow and Seng Boey, *Australian Defence Risk Management Framework: A Comparative Study*, Commonwealth of Australia, 2005; Economist Intelligence Unit, *Closing the gap: The link between project management excellence and long-term success*, A report from the Economist Intelligence Unit, sponsored by Oracle, October 2009; Department of Defense, *Risk Management Guide for DoD Acquisition*, sixth edition, August 2006, paragraph 1.3; and Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 2.
- 14 Fomin, Pavel, Mazzuchi, Thomas A. and Sarkani, Shahram, 'Incorporating Maturity Assessment into Quality Functional Deployment for Improved Decision Support Analysis, Risk Management, and Defense Acquisition', *Proceedings of the World Congress on Engineering and Computer Science 2009*, vol II, WCECS 2009, October 20–22, 2009, San Francisco. This definition was taken from DoD Risk Management Guide, 2006; and Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal* 2005, vol 7, no. 4.
- 15 See for example, Ian McPhee, Deputy Auditor-General for Australia, 'Risk Management and Governance', Speech, National Institute for Governance, Canberra, 16 October 2002, p. 2; Department of Defence, Defence Science and Technology Organisation, Svetoslav Gaidow and Seng Boey, *Australian Defence Risk Management Framework: A Comparative Study*, Commonwealth of Australia, 2005; and Standards Australia, *Delivering assurance based in ISO 31000:2009 Risk Management—Principles and guidelines*, HB 158–2010, paragraph 1.2.

must be learnt from previous experience and applied to future decisions and actions regarding risk management.¹⁶

Committee view

5.10 Clearly, risk management is a part of good governance and not an add-on. Although the acquisition of major defence assets is a high risk activity, sound management practices can reduce the potential for poor results. Thus, responsible for large and complex projects involving cutting edge technology, defence organisations have a very real interest in managing risks. Failure to do so can result in poor project performance—cost overruns, schedule slippage or shortfalls in capability. Thus, it is essential for an organisation to be well placed to anticipate, understand and manage risk. To do so effectively, it should have a sound risk management framework that binds all forms of procurement undertaken by the organisation and be front and centre of decisions for managing its projects effectively.¹⁷ And as pointed out elsewhere, good risk management in the defence environment will occasionally need to tolerate some failure. For example, the airborne warning and control system where, despite the risk and some failure, a lot of the capability sought was eventually achieved—though perhaps it could have been better assessed at the outset.

Risk management in Defence

5.11 In Australia, the Defence Procurement Policy Manual defines risk in the defence context as being concerned with the 'things that can go wrong' to its projects and which may prevent the project from being a success. It states that the government considers that a successful project is one that 'delivers a fit-for-purpose capability, as approved by Government, within the approved budget and schedule'.¹⁸

Policy

5.12 In 2009, Standards Australia published a revised version of its principles and guidelines on risk management.¹⁹ The *Commonwealth Procurement Guidelines* and companion guides such as the *Commonwealth Policy Framework for National Public Private Partnership* also advocate the use of risk management and provide advice on its application. Consistent with these guidelines, Defence has produced a number of

16 See for example, Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal* 2005, vol 7, no. 4.

17 See for example, Young Hoon Kwak and Brian Smith, 'Managing risks in mega defense acquisition projects: Performance, policy, and opportunities', *ScienceDirect*, International Journal of Project Management, vol. 27 (2009), pp. 812–820.

18 Department of Defence, *Defence Procurement Policy Manual, Mandatory Procurement Guidance for Defence and DMO Staff*, Commonwealth of Australia, July 2011, p. 3.2–1.

19 Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009.

key documents that further underscore the importance of understanding risk and its effective management. They include:

- Defence Procurement Policy Manual;
- Defence Capability Development Handbook;
- Technical Risk Assessment Handbook;
- DMO Project Management Manual; and
- DMO instructions.

5.13 Based on these documents, Defence has certainly demonstrated that it is an organisation that recognises the importance of risk management as an indispensable part of effective governance that underpins sound decisions.²⁰ For example, the Defence Procurement Policy Manual (the Manual) clearly states Defence's commitment to 'a comprehensive, coordinated and systematic approach to risk management'.²¹ It recognises that sound risk management is a vital component of good corporate governance and that a 'well developed and managed risk management plan will lead to informed decision-making to ensure the desired result is achieved'.²²

5.14 Air Marshal Harvey acknowledged that Defence must manage risk. When it comes to the practical application of Defence's policy on risk, he explained that Defence has 'a very structured approach' that has been refined in line with previous reviews and Defence's internal work. He also noted that Defence's consideration of risk is broad, which covers cost, schedule, capability, technical, workforce and overall programmatic risk.²³

Guidelines

5.15 The Defence Capability Development Handbook (the handbook) sets out the specific steps to be taken with regard to risk management. This document is a guide to the capability development body of knowledge, best practice and processes for Defence. It provides directions and offers advice on risk in defence procurement. According to the handbook:

20 Department of Defence, *Defence Procurement Policy Manual, Mandatory Procurement Guidance for Defence and DMO Staff*, Commonwealth of Australia, 1 July 2011, p. 3.2–1.

21 Department of Defence, *Defence Procurement Policy Manual, Mandatory Procurement Guidance for Defence and DMO Staff*, Commonwealth of Australia, July 2011, paragraph 3, p. 3.2–1.

22 Department of Defence, *Defence Procurement Policy Manual, Mandatory Procurement Guidance for Defence and DMO Staff*, Commonwealth of Australia, July 2011, paragraph 6, p. 3.2–1.

23 *Committee Hansard*, 7 October 2011, p. 13.

Command and management processes at all levels are required to plan, apply, measure, monitor and evaluate the functions an agency performs, with due cognisance of risk assessment and subsequent risk management.²⁴

5.16 It states that 'every proposal must ensure that Government is aware of the risk it accepts in making an investment decision. Risks must be measured, mitigated and managed to ensure there is a tolerable risk-return balance'.²⁵

5.17 Unlike the procurement policy manual, the handbook does not have a discreet section on risk management. It deals with the implementation or practical application of risk management at every phase of the acquisition process. It recognises the need to consider risk early and for it then to be a logical and sequential process throughout the capability development cycle.

5.18 The committee examined Defence's Procurement Handbook and related documents—DMO Project Management Manual and Project Risk Management Manual. It looked at risk management from the needs phase through to entry to the DCP, first and second pass approval, acquisition, tendering and contracting to delivery, including the use of early warning systems designed to stop projects becoming projects of concern. It considered the various panels and committees that review the project proposals at milestones during the acquisition process including the Options Review Committee (now replaced by the Project Initiation and Review Board), the Capability Gate Review Boards, the Defence Capability Committee (DCC), the Defence Capability and Investment Committee, Service Chiefs and Group Heads and finally the Secretary of Defence and CDF who clear a submission for government consideration and final approval.

5.19 It is clear that, although the committee has not described step by step Defence's risk management process as set down in its manuals and guidelines, it found that the contents of the documents align with good practice. For example, the committee notes the comprehensive coverage Defence gives to risk management in its policy and practice guidelines. Defence clearly recognises risk management as:

- integral to efficiency and effectiveness; and
- a means that enables agencies 'to proactively identify, evaluate and manage risk, opportunities and issues arising out of procurement related activities'.²⁶

5.20 Consistent with the key principles of sound risk management, the committee found that the handbook, DMO Project Management Manual and DMO Instructions recognise the importance of:

24 *Defence Capability Development Handbook*, Commonwealth of Australia, August 2011, paragraph 1.1.6.

25 *Defence Capability Development Handbook*, Commonwealth of Australia, August 2011, paragraph 1.3.3.

26 Department of Defence, *Defence Procurement Policy Manual, Mandatory Procurement Guidance for Defence and DMO Staff*, 1 July 2011, paragraph 2, p. 3.2–1.

- considering risk from the earliest stages of procurement planning;
- monitoring risk and its treatment on a systematic basis throughout the procurement process—risk management is treated as a continuing process, with opportunities to re-evaluate risks at key stages of the procurement process;
- taking account of all aspects of risk including costs, schedule, capability, programmatic and workforce; and
- providing senior leaders and the government with sufficient and reliable information upon which to make decisions.

5.21 There can be no doubt that Defence's stated policy on risk management and the guidelines and handbooks intended to assist officers implement the policy is consistent with international and Australian standards.

Conclusion

5.22 In light of Defence's risk management policy, the practical guidance provided in its procurement handbook and the in-built review structures; it would appear reasonable to assume that risk management is a prominent and essential element of Defence's procurement culture. If implemented properly, Defence's policy, supporting documents and practices should work effectively to mitigate risks. Evidence, however, suggests otherwise. Indeed, the poor performance of some major projects, detailed in chapter 2, indicates that risk management may not have been as robust as it should have been—for example, cautionary advice from domain experts not understood, downplayed, misplaced or ignored as it moves up the decision-making hierarchy. On countless occasions, the ANAO has noted that this repeated failure to identify or acknowledge risk is simply a manifestation of bad management in an unaccountable system.

5.23 In the following chapter, the committee begins its examination of the underlying causes of poor performance.

Chapter 6

Compliance and awareness

6.1 Based on its examination of Defence's acquisition process the committee found that on paper at least Defence has a robust risk management regime, which is comprehensive, systematic and engages all stakeholders. Further, that if followed correctly, risk would be considered from the outset or formative phase of a project when critical decisions are made and then managed throughout the project including a continuous process of identifying, analysing and mitigating risk. Defence's key policy documents explicitly recognise risk management as an essential part of corporate governance and senior Defence leaders have stated their commitment to sound risk management practices.

6.2 In this chapter, the committee examines the implementation of Defence's risk management strategies. It compares Defence's stated policy on risk management and the advice contained in its relevant guides on procurement with practice and actions. Having determined that Defence's policy and advice on risk management is not the problem, the committee's purpose in drawing these connections is to better locate the source of poor decision-making and performance.

Problems in defence procurement

6.3 Evidence before the committee identified significant failings in a number of major projects. They included inadequate description of risk during capability definition and planning phase; underestimation of the maturity of the technology and/or complexity of integration; and miscalculation of industry's capacity to deliver. In essence, a failure to understand, appreciate and mitigate risk. Indeed, Defence in its submission recognised that the common causes of poor project performance noted from past and current projects of concern are:

- unachievable expectations in terms of technology, performance or schedule;
- scope changes;
- ineffective defence stakeholder engagement and interaction; and
- challenging commercial or business relations.

6.4 In this context, the committee believes that it is important to refer again to the finding of the Helmsman Institute that some of the complexity in Defence's acquisition projects was 'self-inflicted'. It cited factors such as embarking on highly developmental projects; level of customisation; limited clarity on the key drivers of the project; lack of clear plans to achieve target dates and results; and tension between the needs of the military chain of command and the requirement to deliver against

defined contracts and commitments.¹ The causes of poor project performance identified by Defence and the Institute's observation about 'self-inflicted' complexity indicate that although Defence has a solid risk management policy, in practice it is not working to full effect.

Culture of risk management

6.5 Having examined risk management in the UK MoD, Mr Chris Maughan, defence analyst, was compelled to ask that if the MoD had the right process, guidance documentation and tools why then was risk management not delivering the anticipated benefits. In his opinion 'the answer can only lie in its actual implementation'.² He found:

For improvements to be experienced there needs to be a major shift, by the MoD, away from process and towards a concentration on comprehensive quantitative schedule and cost risk analysis. There needs to be an appreciation, within both MoD and the wider defence industry, of the root causes of the failure of risk management and a willingness to take the necessary actions to resolve them.³

6.6 This observation has direct relevance for Australia's Defence organisation. Indeed, a number of the independent members of the gate reviews cited risk identification, mitigation and management as one of the major challenges for Defence and an area in need of 'significant attention'.⁴ Dr Ralph Neumann stated:

It is not a matter of process: the process exists. It is a matter of better understanding the business, focusing on things that matter and better utilising the opportunities to reduce risk rather than managing the fallout of the risks.⁵

6.7 In the previous chapter, the committee noted that to be effective a risk management regime should be:

...fully integrated and embedded in an organisation's culture so that risk management policy and practice is part of management thinking and actions and permeates all levels of the organisation—enterprise level, function level

1 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [11–13].

2 Chris Maughan, 'Risk Management in Defence Procurement', RUSI Defence Systems, June 2010, p. 95. A former Royal Navy officer, Chris Maughan is a Managing Consultant with Decision Analysis Services Ltd, and since 1989 has been responsible as project manager for the delivery of risk, project management and technical due diligence support to a number of major programs for clients worldwide.

3 Chris Maughan, 'Risk Management in Defence Procurement', RUSI Defence Systems, June 2010, p. 96.

4 Dr Neumann, *Committee Hansard*, 13 June 2012, p. 3.

5 *Committee Hansard*, 13 June 2012, p. 3.

or business unit level—senior managers in particular must show leadership and commitment and managers at all levels must take responsibility.⁶

6.8 Despite the clear statement of commitment to risk management, evidence presented to the committee suggests that risk management may not be front and centre of people's thinking in defence procurement. The first indication is the extent to which personnel adhere to the guidance or directions issued in Defence's handbooks and instructions.

Adherence to procurement policy and guidelines

6.9 Compliance is essential if Defence's risk management policies and their supporting guidelines and manuals are to translate into organisation-wide practice. In its preliminary report, the committee noted problems caused by non-compliance with such directions and advice. For example, the Defence Teaming Centre described the Defence Procurement Policy Manual as 'robust', but noted that 'it is the differential tailoring and interpretation of these policies by the DMO that causes significant frustration and confusion for industry'.⁷ It suggested that training in the interpretation of the manual across DMO would create 'a consistent interpretation and implementation' of the Manual.⁸ This practice would encourage a 'more fluid and efficient procurement process with both the customer and contractor understanding and having the same interpretation of the policy'.⁹

6.10 Likewise, the Australian Industry Defence Network agreed that DMO's procurement procedures and processes as detailed in the procurement manual appear sound. It noted, however, that the poor implementation and apparent non-compliance with the DCP, Defence Procurement Policy Manual and the Defence Capability Manual schedules and processes adversely affected the acquisition and sustainment of ADF capability on a regular basis.¹⁰ In this regard, the committee notes ANAO's audit report on Planning and Approval of Defence Major Capital Equipment Projects, which examined the key capability development documents from a sample of 20 Defence projects. The ANAO found that Defence was not consistently adhering to its 'administrative framework for implementing the process'.¹¹

6 See for example, Ian McPhee, Deputy Auditor-General for Australia, 'Risk Management and Governance', Speech, National Institute for Governance, Canberra, 16 October 2002, p. 2; Department of Defence, Defence Science and Technology Organisation, Svetoslav Gaidow and Seng Boey, *Australian Defence Risk Management Framework: A Comparative Study*, Commonwealth of Australia, 2005; and Standards Australia, *Delivering assurance based in ISO 31000:2009 Risk Management—Principles and guidelines*, HB 158–2010, paragraph 1.2.

7 *Submission 16*, p. 1.

8 *Submission 16*, p. 2.

9 *Submission 16*, p. 2.

10 *Submission 19*, p. 3.

11 ANAO Audit Report No. 48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, 2009, paragraph 11.

6.11 Along the same lines, the Pappas Report observed that the manner in which projects approach the management of risk was somewhat variable. According to Mr Pappas, the quality of detail on the type/level of risk, residual risk post-treatment, and ownership of risk was also inconsistent. He noted that a risk register had been in place for some post-Kinnaird projects, but there was no standardised template. According to the Project Management Manual, a project risk log should be established in the Needs Phase and is mandatory for second pass.¹² The log should be used 'to record all project risks, the likelihood, consequence and level assigned to each, the treatment strategies (if the risk is unacceptable), the amount of Project Contingency Budget assigned to each treatment and the individual responsible for managing risk'.¹³ The integrated project team is to review the risk register and treatment strategies, at least monthly.¹⁴

6.12 Despite the existence of a risk register, Pappas found that 'some mitigation strategies had not been implemented and lacked a rationale or timeline indicating when the action was to be implemented and the success of the mitigation reviewed'. He recommended that technical risks should be measured and managed through a risk register with a standard format and clear action plans.¹⁵

6.13 In its performance audit into acceptance into Service of Navy capability, the ANAO observed that mis-matched expectations between DMO and Navy had adversely affected the acceptance into service process. It identified a range of factors that could result in misunderstandings or disagreements including instances of projects proceeding with high-level risk because of a lack of agreed Capability Definition Documents and Certification Plans and Systems Safety Plans.¹⁶ The audit report found:

...without the application of greater discipline by defence in the implementation of its own policies and procedures, improved communication and collaboration across the relevant parts of the defence organisation during a project's life cycle and the maintenance of adequate records to support appropriate monitoring of capability development performance, the necessary improvements in acquisition outcomes will not be achieved.¹⁷

12 Department of Defence/Defence Materiel Organisation, *DMO Project Management Manual, (PMM) 2009*, 10 August 2009, paragraph 7.11.

13 Department of Defence/Defence Materiel Organisation, *DMO Project Management Manual, (PMM) 2009*, 10 August 2009, paragraph 7.11.

14 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.16.

15 *2008 Audit of the Defence Budget*, Commonwealth of Australia, 3 April 2009 (Pappas Report), pp. 82–83.

16 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 7.60.

17 *Committee Hansard*, 11 August 2011, p. 24.

6.14 Finally, the committee draws attention to the ANAO's observations in the annual Major Projects Reviews where it continues to report on a lack of consistency in the application of policies, practices and systems relevant to risk management. In the most recent reviews, it noted that the different practices at a project level 'impact on a consistent and strategic risk management approach at the whole of the DMO level'.¹⁸

6.15 There could be a number of reasons for this non-compliance, inconsistency or laxity in applying guidelines including a lack of awareness, complacency, or no one person or group having responsibility or being accountable for their part in the process. Assumptions that someone else will check the veracity of the information before them or an absence of, or ineffective, oversight of the process may also contribute to the lack of regard shown toward the manuals and guidelines. A combination of both these cultural and structural factors may be at work that results in non-compliance. It may well be that the culture took root and flourished in Defence's environment of ill-defined organisational accountability.

Awareness and ownership of risk

6.16 A healthy risk management environment is one where all members of an organisation are fully aware of the risks, controls and tasks for which they are accountable.¹⁹ For example, in 2002 the Deputy Director, ANAO, referred to the importance of having a clear view on what is an acceptable level of risk.²⁰ In this regard, Dr Thomson cited the project for 12 new submarines, suggesting that:

You cannot pretend that risk away, you have to look at that risk and stare it in the face. It has to be part of your decision making but I do not think we should throw up our hands and give up on doing things. We should simply take an objective and sober recognition of the risks that some of these options carry because of the present state of our engineering and other expertise.²¹

6.17 DMO's Project Management Manual makes absolutely clear that there is 'ownership of risks and controls'.²² Two of the key principles enunciated in the manual are:

- risks are not avoided, but rather managed at the level at which people have the authority, responsibility and resources to take action; and

18 See for example, ANAO Report No. 17 2010–11, *2009–10 Major Projects Report*, paragraph 31 and ANAO Report No. 20 2011–12, *2010–2011 Major Projects Report*, paragraph 42.

19 Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009.

20 For example see Ian McPhee, Deputy Auditor-General for Australia, 'Risk Management and Governance', Speech, National Institute for Governance, Canberra, 16 October 2002, p. 20.

21 *Committee Hansard*, 12 August 2011, p. 15.

22 Department of Defence, *DMO Project Management Manual DMM (PMM) 2009, Interim*, August 2009, paragraph 7.3.

- a risk management culture is promoted and is part of everyone's job.²³

6.18 In their recent audit of acceptance into service of Navy capability, the ANAO found some significant issues with Navy projects including 'that Navy, CDG and DMO did not have a shared understanding of the risks to the generation of the expected capability from Navy projects and had not taken shared responsibility for mitigating those risks'.²⁴ The Pappas Review also suggested that a 'clearer indication of the most critical risks would help those tasked with risk management to know where to focus'. Worryingly, it observed that DSTO's involvement and assessments of project options were 'not always paid the respect they should be'.²⁵ It should be noted that DSTO has a central role in providing technical risk assessments especially for first and second pass approval.

6.19 This devaluing of advice from technical experts by non-experts points to an organisational weakness. Furthermore, as noted in chapter 2, DSTO is not the only body of technical experts whose advice may be neglected. Within Defence the advice of domain experts and operators does not always inform key decisions, sometimes with unfortunate results. There appears to be no effective mechanism to ensure that critical technical advice is accurately reflected in submissions on major acquisitions to senior decision-makers and ultimately to government—no real contestability; no visibility of risk.

6.20 In respect of risk awareness, Mr King expressed concern that some people in Defence do not fully appreciate the critical importance of risk analysis, monitoring and management. He stated:

There is a problem we need to deal with in defence more rigorously than we sometimes do: we become a bit unreactive to red alarms. In other words, we see a risk and we watch it go through to fruition and say, 'Oh, yes, indeed it did happen'. That is happening less and less where we are focusing on what is a risk and what we are doing about it. Unfortunately, sometimes that materialises in a project of concern, when we have to go and do a new remediation project to get it right.²⁶

6.21 Mr King stated that he tells his personnel that there are really only two sins they could commit—not knowing their risks or problems, and not telling anybody about it or not doing something about it. He explained that DMO is trying to encourage its people, when they have this risk, just not to talk about how they are 'monitoring it' or 'actively checking it', but to have a real plan to mitigate or treat it. According to him, more often than he would like, Defence have had a risk that it has

23 Department of Defence, *DMO Project Management Manual DMM (PMM) 2009, Interim*, August 2009, paragraph 7.5.

24 *Committee Hansard*, 11 August 2011, p. 24.

25 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, pp. 3 and 82.

26 *Committee Hansard*, 7 October 2011, pp. 25–26.

'allowed to come to fruition without a real remediation plan'. He told the committee that 'we need to work harder at that'.²⁷

6.22 The Rizzo Report observed that Defence was beginning to develop mechanisms to quantify its appetite for risk 'in a formal way and to promote this vertically through the organisation'. It noted, however, that this practice 'needs to become part of everyday life in Defence, with effective risk management being adopted and linked throughout'.²⁸

Committee view

6.23 Despite Defence's clear commitment to sound risk management and to the principle of promoting a risk management culture which is seen as 'part of everyone's job', some personnel fail to own risk and avoid rather than manage it. Indeed, evidence before the committee presents a compelling case that Defence must take risk management more seriously. Mr Pappas' description of the 'variable' approach to recording risk management activities is consistent with Mr King's comments about some personnel being unresponsive to emerging risks.

6.24 The fact that some defence personnel appear inattentive to, or unmindful of, risk or uncertain about their role in risk management must be symptomatic of a deeper systemic problem in defence procurement. This failure to own risk is not a process problem—it is clearly an organisational weakness that effectively permits people to avoid taking responsibility.

Learning lessons and recordkeeping

6.25 As noted in the previous chapter, to be effective, risk management should be part of a continuous improvement system where experiences in risk inform revised risk assessment and management strategies. This means that lessons must be learnt from previous experience and applied to future decisions and actions regarding risk management.²⁹ As Air Marshal Binskin, Vice Chief of the Defence Force, told the committee:

It is only a lesson learnt if you do not repeat it: otherwise it is just a lesson identified and it is useless.³⁰

6.26 Industry representatives were of the view, however, that:

27 *Committee Hansard*, 7 October 2011, p. 26.

28 Department of Defence, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 10. Mr Rizzo recognised that risk management should be 'a central function in Defence'.

29 See for example, Tzvi Raz and David Hillson 'A Comparative Review of Risk Management Standards', *Risk Management: An International Journal* 2005, vol. 7, no. 4.

30 *Committee Hansard*, 5 October 2011, p. 56.

At the moment Defence is not capable of being able to capture lessons learnt and project those lessons learnt forward a decade. What tends to happen is that they end up repeating a number of mistakes which lead to relearning of those lessons.³¹

6.27 For example, the Defence Teaming Centre stated that the DMO 'appears to lack any capacity to learn from failings in previous projects'. It suggested that there does 'not appear to be any drive or motivation within the DMO to capture lessons learned and pass them on internally and to industry'.³² The pattern of repeated shortcomings in projects as detailed in chapter 2 attests to Defence's difficulties in learning from past mistakes.

6.28 In its guide to risk management, Standards Australia suggests that the 'results of monitoring and review should be recorded and externally and internally reported as appropriate, and should also be used as an input to the review of the risk management framework'.³³ It stated further that risk management activities should be traceable.

6.29 In some cases, however, it was not the absence of records that was the problem but the quality of the documentation, which reflected a poor understanding of what was important and what was not. Many witnesses referred to Defence's procurement of major capital equipment as process bound. One referred to people in Defence getting 'bogged down' with too much paper work.³⁴ A number of independent members of the gate review boards observed that although improving, the standard of documentation could be lifted.³⁵ One noted 'a certain amount of nugatory work...and at times a lack of guidance of project direction that can occur pre project approval'. In Dr William's view there was 'an issue of quality and consistency'. He noted:

On some occasions I think there is an enormous amount of work put in to produce extremely large documents which are probably far more so than is needed—and it is done with the best will in the world but it must tie up a lot of resources. I think perhaps in some cases if we could not actually remove documents we could at least streamline them, and that would be quite a resource saver.³⁶

6.30 Mr Gallacher was similarly aware of instances where the project team were 'spending enormous amounts of effort on doing detailed work but then missing

31 *Committee Hansard*, in camera.

32 *Submission 16*, p. 2.

33 Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009, paragraph 5.6.

34 *Committee Hansard*, 12 June 2012, p. 35.

35 Dr Neumann, and Mr Irving, *Committee Hansard*, 13 June 2012, pp. 16–17.

36 *Committee Hansard*, 13 June 2012, p. 17.

important things that were going on'. He supported 'simplifying rather than adding complexity'.³⁷

6.31 In the risk management process, records provide the basis for improving methods and tools, as well as the overall process.³⁸ The committee has commented on the haphazard use of the risk register—an important accountability and learning tool—which not only highlights Defence's poor record keeping but points to a deeper problem with risk management in the organisation. The observations about the inability of personnel to discern the important issues from the less important when producing documentation similarly suggests that other factors are at work when it comes to effective risk management. For example, evidence presented later in this report suggests that even though people are diligent and hard working they may feel disempowered or unable to effect change, may be the wrong person to make decisions about risk, or may not have the requisite qualifications and experience to recognise the significance of risks.

Conclusion

6.32 In order to identify deficiencies in the acquisition process, the committee considered the practical application of Defence's risk management practices and procedures as set down in its written guidelines and manuals. The committee found that, if followed correctly, the acquisition process should ensure that risks are identified early and managed appropriately. Clearly, however, in some cases problems emerge or are exacerbated in an acquisition project because of poor implementation of Defence's policy and guidelines. The committee finds statements indicating that defence personnel are not alert to risk most disturbing. There can be no excuse for such personnel disregarding their own procedures, which can result in the organisation being unaware of, downplaying or ignoring, risks that threaten the success of a major acquisition. In effect, as stated by Mr King, Defence must not allow situations to develop where personnel watch risk emerge and come to fruition without a remediation plan. Poor recordkeeping and inappropriate or incomplete documentation is yet another indicator of a poor risk management regime. In essence, despite Defence's risk management policies and guidelines, the evidence is clear and unequivocal that in practice Defence's risk management in a number of major defence acquisition projects has:

- failed to identify risk during the early stages of an acquisition project or, as highlighted in chapter 2, if identified, especially by domain experts, risk was downplayed, misinterpreted, or ignored;
- failed to monitor risk and its treatment on a systematic basis throughout the procurement process; and

37 *Committee Hansard*, 13 June 2012, p. 17.

38 Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009, paragraph 5.7.

- failed to ensure that senior leaders and government were fully apprised of the nature and extent of risk resident in a project.

6.33 The question must then be asked—who is responsible and accountable for risk management: for ensuring that 'things do not go wrong', or if they do, for prompt remedial action. In the following chapters, the committee continues to seek to understand the reasons for poor performance when it comes to identifying and/or acting on potential problems. It considers accountability and responsibility; communication and reporting within the organisation.

Part III

Accountability, responsibility and collaboration

When it comes to key decision-making, it is especially important that the right people are in the appropriate positions to make key decisions and have the responsibility, seniority and authority to do so effectively. They should also be known to have this responsibility and to be accountable for decisions and performance that come under their delegation. Because of the hierarchy and layers of groups that make decisions or provide advice leading to major commitments to a specific capability development, there should be a clear understanding of responsibility throughout the acquisition process.

In Part III of the report, the committee considers the delegation of responsibility and accountability for major defence procurement projects, the exchange of information and the transition of responsibility from one group involved in an acquisition program to another.

Chapter 7

Responsibility and accountability

7.1 Standards Australia noted that there should be designated individuals who fully accept accountability, are appropriately skilled and have adequate resources to check controls, monitor risks, improve controls and communicate effectively about risks and their management to external and internal stakeholders.¹ In support of this advice, the Rizzo Report stated that 'strong accountability is an important component of any high performing organisation, as it denotes ownership of a result or action'.² In this chapter, the committee looks at responsibility and accountability—who owns decisions and takes responsibility for performance in respect of major defence acquisitions.

Background to accountability—committees

7.2 In 2003, Kinnaird noted that accountability for managing the process of defining and assessing capability and achieving robust outcomes was 'diffused and overlaid by a complex system of committees'.³ In his view, there was scope to streamline the multiple layers of committees. He recommended a review of the committee system to ensure that committees 'fully complement and support the capability definition and assessment function'.⁴ Furthermore, he stressed that 'management and reporting structures need to be clear, well understood, and, to the greatest extent possible, ensure that they align authority, responsibility and accountability'.⁵

7.3 Despite measures to reform the committee system, eight years later Dr Rufus Black reached a similar conclusion about the existence of too many committees. In December 2009, he was commissioned to conduct a review into accountability and governance in the Defence Department. Dr Black presented his final report to the Secretary and CDF in early 2011 (Black Review).⁶ He found that Defence had a complex accountability system that had evolved over many years but had reached a point where there was 'a strong case to redesign' it. He was of the view that current arrangements were under stress, resulting in poor performance such as delivery

1 Standards Australia/Standards New Zealand, *Risk Management—Principles and guidelines*, AS/NZS ISO 31000:2009, paragraph A.3.2.

2 Department of Defence, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 9.

3 Department of Defence, *Procurement Review 2003*, pp. 10–11.

4 Department of Defence, *Procurement Review 2003*, p. 11.

5 Department of Defence, *Procurement Review 2003*, p. 48.

6 Department of Defence, *Submission 21*, p. 13.

failures for capability projects, poor or inappropriate procurement decision-making, and a lack of cost consciousness in the management of day-to-day activity. According to Dr Black, the existing accountability arrangements also 'constrain leadership capability and management capacity by reducing the ability of decision-makers to exercise strategic control over the construction and implementation of decisions'.⁷

7.4 Dr Black also found that the committees 'create diffused and confused accountability and their operation is often characterised by poor procedures'. He reported:

Decision-making and accountability systems need to ensure that Defence functions as a single, integrated enterprise, and that accountability systems function as a force for organisational cohesion. Defence decision-making lacks the framework of clear priorities and direction which would flow from an enterprise level corporate plan.⁸

7.5 In his assessment, an accountability system must among other things 'create internal and external clarity and transparency about who is responsible for making decisions'. The system must 'reach down into the organisation right to front line staff who are ultimately responsible for actual delivery'.⁹ He noted that Defence could achieve stronger decision-making and strategic direction by redefining committee structures and processes.

7.6 It should be noted that soon after the release of Dr Black's review, the minister noted the difficulty he had in gaining information on the people responsible when 'things have gone wrong'. The minister wanted to know who had senior oversight: who had responsibility. He explained:

It's been very difficult to provide answers to those questions, largely because very many of the decisions have been made at committee level where the responsibilities to date have been diffuse and hard to identify.¹⁰

7.7 A witness familiar with major defence acquisition projects was also highly critical of the trend toward excessive bureaucracy and a committee organisation where 'accountability is too diffuse to be useful and there is too much micro-management'.¹¹ This view aligns with the committee's description of Defence's risk management practices and the many groups that contribute to identifying, assessing and mitigating risk, including those who oversee risk management activities. With so many groups

7 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 9.

8 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, pp. 9–10.

9 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 15.

10 Minister for Defence—Press Conference—Black Review, 9 August 2011, p. 10 of 15, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 April 2012).

11 *Confidential Submission*, p. 42.

involved in this so-called process of continuous refinement, the committee had difficulty isolating and identifying any single group responsible and accountable for mistakes or shortcomings in procurement projects. It would seem that everybody yet nobody is responsible. The committee accepts that the committee system as presently operating in the defence procurement domain blurs accountability. Moreover, it would seem that the number of committees has grown in response to identified problems on the assumption that another oversight or advisory body will fix the deficiency, when in fact it has only added another bureaucratic layer.

7.8 After the release of the Black Review, the minister announced that the number of committees would be reduced: that committees would be advisory and there would be individual decision-makers.¹² In August 2011, Air Marshal Harvey told the committee that Defence was working through the implications of the Black Review and would be reviewing the committee structure.¹³ Ms Fran Holbert, ANAO, also informed the committee that Defence was aware of the need for increased clarity about who makes decisions; and of the need to 'rein in the committee system'. In her view, it would be a matter of how that awareness translates into action.¹⁴

7.9 Even though Defence is considering, and acting on, Dr Black's findings,¹⁵ the committee decided that it would go ahead and look closely at accountability in defence procurement. The committee's attention, however, is not directed at the numerous committees that feed into the process that produces a submission to government on capability development. Its focus is directly on the key agencies involved in the acquisition of major defence capital equipment.

Who is responsible?

7.10 During its site visit to South Australia and Western Australia, one official from industry told the committee that his company struggles to understand who is accountable in Defence. Although the Defence Capability Development Handbook acknowledges that responsibilities for managing phases of the capability development life cycle are shared across Defence, it does specify the group responsible for particular aspects of capability development including:

- *Strategic Policy Division*—responsible and accountable for the overarching strategic guidance, including the Defence Planning Guidance (DPG).
- *Force Structure Development Directorate*—responsible for the implementation of the government directed five-yearly capability planning cycle.

12 Minister for Defence—Press Conference—Black Review, 9 August 2011, p. 10 of 15, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 April 2012).

13 *Committee Hansard*, 7 October 2011, p. 55.

14 *Committee Hansard*, 11 August 2011, p. 33.

15 Department of Defence, *Submission 21*, p. 13.

- *Capability Development Group (CDG)*—responsible and accountable for the development of the DCP, drawing on the approved annual DPG, supporting concepts, experimentation and futures work: it prioritises all of Defence's major procurements in line with strategic guidance and recommends the appropriate capability to meet the government's priorities;
 - *Capability Systems Division*, within CDG—manages DCP projects and leads the development of the capability proposals and supporting documents that form the basis of the ministerial or cabinet submission
 - *Integrated Project Team*—headed by a desk officer from the Capability Systems Division—is responsible for the success of a particular project.
 - *Capability Investment and Resources Division*—responsible for ensuring that the DCP is appropriately programmed and for independently reviewing capital and operating costs for all projects going to the Defence committees. According to Defence's supplementary submission, the Division is responsible for drafting initial, first and second pass cabinet submissions. It has two branches:
 - *Investment Analysis Branch*—responsible for providing advice, independent of Capability Systems Division, on capability proposals; and
 - *Cost Analysis Branch*—provides cost analysis, again independent of Capability Systems Division, on capability proposals to support the development of ministerial or cabinet submissions.
 - *Capability and Plans Branch*—responsible for ensuring that the outputs of strategy formulation and capability planning are used consistently across CDG and for providing Group level support to Chief of CDG (CCDG) and other areas of CDG.
- *Capability Managers*—responsible for delivering the agreed capability to government, through the coordination of the Fundamental Inputs to Capability (FICs)—ultimately, the capability manager is responsible for ensuring an integrated view of the delivery of capability across the Defence and the DMO.
- *DMO*—responsible for the acquisition of the majority of capital equipment assets and the sustainment of these assets throughout their in-service life.
 - *Acquisition team* responsible for managing an acquisition.
- *DSTO*—principal source of science and technology advice to inform government on capability development decisions.¹⁶

7.11 There are numerous other bodies, such as the Defence Support Group and the Chief Information Officer Group that are responsible for providing support to a

16 Department of Defence, *Defence Capability Development Handbook*, Commonwealth of Australia, 2011, paragraphs 1.5.3–1.5.15 and pp. 106 and 109.

project. The committee's main concern, however, is with the principal groups—CDG, capability managers and DMO. As one witness explained:

CDG shapes the capability, DMO buys the capability and the Navy, in this case [the capability manager], uses the capability.¹⁷

7.12 The committee also considers the role and responsibilities of the DSTO.

Capability Development Group

7.13 The CDG has a range of responsibilities but overall its job is to provide 'decision-quality advice' to government in delivering capability described in the DCP'. Although the CDG develops the options to be presented to government for consideration, it does not come up with ideas for new capability, rather it converts 'high-level strategic needs identified into capabilities that can be delivered by industry'.¹⁸ It is responsible for ensuring that project proposals put to government have reliable capability, cost, risk and schedule estimates.¹⁹ At second pass, CDG is responsible for getting the project approved. It holds the money in the unapproved project and transfers the money across to DMO at that point.²⁰

7.14 It is important to note that while CDG has overall responsibility for the capability proposal, the relevant capability manager and enabling groups develop some documents.²¹

Capability Managers

7.15 As the ultimate customer for the capability, capability managers have a strong vested interest in the early stages of a procurement process for major capital equipment through to taking delivery of the product and its in-service operation. Often they are the ones who advocate and put forward an initial proposal.²²

7.16 Since the Kinnaird Review, Defence has given much attention to ensuring that capability managers take a more active and engaged role throughout the acquisition process. In 2003, Kinnaird argued that:

17 *Committee Hansard*, in camera.

18 *Committee Hansard*, 5 October 2011, p. 12. See also Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraphs 1.5.5–1.5.8 and p. 106.

19 Department of Defence, *Submission 21*, p. 8.

20 *Committee Hansard*, 5 October 2011, p. 57.

21 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 1.4.14.

22 *Committee Hansard*, 5 October 2011, pp. 11 and 17 and 7 October 2011, pp. 15–20, 29, 30. Capability managers are on the Project Stakeholder Group, present at the Options Review Board, invited to the Gate reviews; clear all submissions that go to government in terms of the capability and co-sign the MAA.

Capability managers, the most prominent being the Service Chiefs, should be made responsible and accountable for monitoring and reporting to government on all aspects of approved defence capabilities.²³

7.17 This responsibility would be for 'the whole of capability from the point where government approves a particular capability option, that is at second pass approval, through to the time that the capability is retired from service'.²⁴ Capability managers should also be responsible for ensuring that the capability development process and options for government approval are in line with Service needs.²⁵ In addition, capability managers should be held accountable during the acquisition phase for the development of all Service-related inputs required for the introduction of the equipment into service. Kinnaird stated further:

It is the responsibility of capability managers to ensure government is alerted to any significant prospective change in the cost, timeliness or scope of the capability it expects. In particular, they should ensure that government is fully aware of the implications of the changes.²⁶

7.18 The Kinnaird Review stated clearly that capability managers 'would not assume management responsibility in other functional areas in Defence or exercise control over budgets or funding in these areas'.²⁷ The Mortimer Review also considered the responsibilities of the capability manager. It recommended that they should be required to sign the capability submission acknowledging their understanding of the capability being requested and the proposed acquisition strategy.²⁸ In response to Mortimer's findings, Defence recognised that the purpose for requiring the capability manager to sign the capability submission was 'to put more discipline, rigour and an accountability framework around Defence's internal consideration of capability proposals and the entry of the project to the DCP'. Defence explained that to enhance opportunities for the capability managers and other stakeholders to be involved early in the process and to keep government better informed about key stages in capability development:

CCDG, in conjunction with CEO DMO, has developed a statement of the capability development process designed to clarify key roles.²⁹

23 Department of Defence, *Procurement Review 2003*, p. vi.

24 Department of Defence, *Procurement Review 2003*, p. 24.

25 Department of Defence, *Procurement Review 2003*, p. 24.

26 Department of Defence, *Procurement Review 2003*, p. 26.

27 Department of Defence, *Procurement Review 2003*, p. vi.

28 DMO, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, 2008, recommendation 2.6, p. 23.

29 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 23.

7.19 To make clear respective responsibilities and provide a firm baseline for the delivery of equipment, Mortimer recommended that capability managers should sign the Materiel Acquisition Agreements.³⁰ Defence concurred with the view, stating that this requirement would 'help to confirm the agreed baseline levels of capability against which the delivery of equipment would be measured'. It indicated that CCDG would coordinate this process.³¹

7.20 Mortimer also noted that as a fundamental principle, the relevant capability manager should exercise oversight and coordination of all elements necessary for the introduction of a capability.³² In this regard, Defence agreed that capability managers should act in a stronger assurance role to ensure the appropriate oversight and coordination of all the relevant elements.³³

7.21 Three years on in 2011, the Rizzo Report further underlined the need for the Chief of Navy as capability manager to exercise his authority to accept or reject new naval capability against the government approved scope through an independent, rigorous and transparent evaluation process.³⁴ Several witnesses to the inquiry similarly acknowledged that capability managers had been left on the sidelines and called on them to have greater responsibility and be accountable for relevant key aspects of procurement. They wanted to see capability managers assume a more active and stronger role throughout the acquisition process, and to be held accountable for their performance.³⁵ Dr Thomson argued that returning control to the Services in some areas 'would lead to better outcomes because it would clarify accountability and remove what is, at the end of the day, moral hazard'. He explained:

Moral hazards occur when somebody is doing something for someone else and they have different priorities and they do not bear the consequences.

30 Defence Materiel Organisation, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, 2008, recommendation 3.1, p. 32.

31 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 26.

32 Defence Materiel Organisation, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, 2008, recommendation 3.2, p 34.

33 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 26.

34 Department of Defence, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 15.

35 *Committee Hansard*, in camera. See also Dr Neumann, *Committee Hansard*, 13 June 2012, p. 8 and Air Commodore (retired) Bushell who argued that, 'Today, the Service Chiefs no longer manage their Services, they merely administer them to meet imperatives (priorities) dictated by Defence. They do not have command and control of their Services, are not organised to manage their Services, and do not have the resources needed to discharge their accountabilities'. *Submission 3*, p. 9.

All of these interfaces in Defence, between the support groups and the services, introduce moral hazards where people can shrug their shoulders.³⁶

7.22 Defence responded to concerns about capability managers not being sufficiently engaged in the acquisition process by highlighting that they are now involved 'right up front'.³⁷ While such assurances are encouraging, the committee notes that capability managers have much ground to recover. They must regain authority over key areas of capability development, particularly the responsibility for determining the technical specifications they require for acceptance into service. Capability managers must also have adequate and appropriate resources, including a core of trained professional engineers, in order to carry out their responsibilities. If capability managers are to be empowered; if they are to exert greater control over the acquisition of a capability they will use, then DMO's role must change as well.

Defence Materiel Organisation

7.23 The Defence Capability Development Handbook recognises DMO as a stakeholder in the capability development cycle.³⁸ Although responsible for the acquisition of the majority of capital equipment assets and the sustainment of those assets throughout their in-service life, DMO is also involved in the capability development process from an early stage. For example, it is represented on the Project Initiation Board; it works as part of the Integrated Project Team to develop the required project documentation; and prepares an acquisition strategy pre-first and again pre-second pass.³⁹

7.24 Following second pass approval, the equipment requirement, together with the concept of operation, is passed to DMO to manage the acquisition (and subsequently in-service support and disposal phases). The head of DMO is then the single point of accountability for all aspects of the acquisition up to and including contractual acceptance, and is responsible for delivering equipment to the agreed functional specification and within the agreed budget and schedule.

Distinct and complementary responsibilities

7.25 Kinnaird and Mortimer recognised that capability managers and DMO have quite separate responsibilities. For example, Kinnaird suggested that:

During the acquisition phase, the capability manager monitors the development of all capability elements, including equipment delivery by the DMO. This responsibility does not imply any authority to directly instruct

36 *Committee Hansard*, 12 August 2011, p. 9.

37 Air Marshal Binskin, *Committee Hansard*, 5 October 2011, p. 16.

38 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.1.

39 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraphs 1.5.15, 3.4.50 and 4.3.23.

the DMO on any aspect of its function as the manager of equipment acquisition.⁴⁰

7.26 Kinnaird noted that the DMO would provide advice on acquisition, and support issues.⁴¹ Thus, the head of DMO 'would report to government on detailed issues including tendering and contractual matters related to acquiring and supporting equipment'. On the other hand, capability managers would report as appropriate to the CDF, Secretary of Defence, or the minister 'any concerns regarding the inability to deliver capabilities agreed to, and funded by government'.⁴²

7.27 The Mortimer Review recommended that DMO should be held to account for delivering equipment and services as set out in the Materiel Acquisition Agreements (MAAs).⁴³ Defence agreed to the recommendation, indicating that this requirement reflected 'a sound approach to emphasising DMO's accountability'.⁴⁴ It indicated that the Defence-DMO charter, the MAAs and the redeveloped and clarified capability development process would 'provide the transparency needed to ensure reinforced accountability'.⁴⁵

7.28 Despite Defence's positive response to Mortimer's recommendations intended to clarify respective responsibilities and require relevant parties to sign off on agreements, ANAO, Pappas and Rizzo found a definite need for clearer more specific arrangements. For example, in its audit report on acceptance into Service of Navy Capability, the ANAO noted that at key stages of each project, all parties would benefit from a definite agreed view of the risks that must be managed in order to achieve a successful outcome.⁴⁶ It found:

For Defence's current organisational and management models to work more effectively to deliver the anticipated efficiencies, there is a need for clearer, more specific agreements and accountabilities between the various organisations that assist the Chief of Navy to acquit his overall responsibility for delivering the Navy capability outcomes agreed to by government.⁴⁷

40 Department of Defence, *Procurement Review 2003*, p. 25.

41 Department of Defence, *Procurement Review 2003*, p. 24.

42 Department of Defence, *Procurement Review 2003*, p. 25.

43 Defence Materiel Organisation, *Going to the Next Level*, the report of the Defence Procurement and Sustainment Review, 2008, recommendation 3.14.

44 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 31.

45 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 31.

46 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 29.

47 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 30.

7.29 According to the ANAO, the current customer-supplier model results in the Chief of Navy 'having no direct authority over key Defence Groups (including DMO) that develop capability elements needed to achieve these outcomes'. It concluded that this situation was 'a significant issue in any matrix management model such as that employed by defence'.⁴⁸ The ANAO audit was certain that Navy, CDG and DMO needed to place greater emphasis on 'maintaining a shared understanding of the risks to the delivery of the Navy capability agreed to by government'.⁴⁹ At the end of the audit, ANAO understood that CDF and the Secretary were considering proposed changes to Defence's accountability and authority structure.⁵⁰

7.30 The committee's concern is that Defence may look to promote 'shared responsibility' without considering the individual responsibilities of groups such as CDG, DMO and capability managers. It is important that their respective responsibilities align correctly with the ultimate objective of delivering a product that meets the government's strategic requirements as well as the capability manager's fit-for-service requirements. Evidence to this committee shows that the current blurred and ill-defined roles and responsibilities frustrate this objective and, by focusing on shared responsibility at the expense of individual accountability, Defence's efforts may prove futile. In the committee's view, the priority should be on giving the capability manager appropriate control over the acquisition, ensuring all the while that the responsibilities of CDG, DMO and the capability managers are complementary.

7.31 Based on its audits, ANAO informed the committee that 'the challenges of managing inherently complex projects are compounded when roles and responsibilities are not clear at all stages of the capability development cycle'.⁵¹ It concluded that 'Ongoing responsibility and accountability for defining and managing scope and schedule is, without doubt, a very important issue...'⁵²

7.32 Pappas also advocated making the responsibilities of capability managers, CDG and DMO more specific and those responsible more accountable through written agreements. He suggested:

- the CDG and capability managers jointly write the capability definition;
- the DSTO writes the section relating to technical risk; and
- the DMO writes the section relating to the acquisition strategy.⁵³

48 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 30.

49 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 33.

50 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, Paragraph 30.

51 *Supplementary Submission 22A*, p. 1.

52 *Supplementary Submission 22A*, p. 2.

53 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 55.

7.33 The committee agrees with Pappas' view that the responsibilities of the CDG, DSTO, DMO and capability managers should be clearly defined and they should be held to account for the way they exercise that responsibility. The committee's concern is with the actual responsibility that they hold and whether the current management framework is the appropriate one.

7.34 Dr Black argued that the accountability system 'must support the creation of an organisational culture that systematically and rigorously looks to understand and address the root causes of underperformance as early as possible'. He also suggested that the framework needed to provide 'internal and external clarity about who is responsible for making decisions' (see also paragraph 7.5).

7.35 Consistent with this observation, the Rizzo Report recognised that Navy 'experienced a challenge in accountability similar to that felt more broadly across Defence and DMO'. Rizzo was of the view that this challenge flowed from 'a lack of clarity in objectives, overlapping and blurred responsibilities, a lack of continuity in position and inadequately developed skill sets'. He believed that his audit supported the broad thrust of Dr Black's findings and recommendations and that the prompt implementation of them would assist with the resolution of this cultural issue.⁵⁴ Again the committee agrees with the need to clarify and define responsibilities, but the first step must surely be to ensure that the responsibilities are the appropriate ones. The committee believes that the key issue is about the current structure and Defence's unwillingness to address difficulties in management discipline or organisational relationships.

7.36 Many witnesses also had concerns about accountability in Defence's procurement processes.⁵⁵ Dr Thomson observed that although Defence is full of very hard working people dedicated to delivering good outcomes to the people in the Services... 'they are hampered by a profoundly dysfunctional system that disaggregates control of resources from responsibility for delivering things.'⁵⁶ Dr Davies stated that 'what is really required is a reduction in the amount of diffusion of responsibility and decision making'.⁵⁷ Miller Costello and Co noted that poor accountability was a clear causal issue in many, if not all, areas of poor performance.⁵⁸

7.37 Another witness to the inquiry suggested that Defence should implement fully the Mortimer Review recommendations about the Service Chiefs acting formally as capability manager, ensuring adequate resources and authority for the Service

54 *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 67.

55 See for example, Air Commodore (retired) Bushell, *Submission 3*, p. 1 and Miller Costello and Co, *Submission 30*, p. 2.

56 *Committee Hansard*, 12 August 2011, p. 5.

57 *Committee Hansard*, 12 August 2011, p. 7.

58 Miller Costello and Co, *Submission 30*, p. 2

Chiefs.⁵⁹ In his view, over management (as recommended by various reviews) has resulted in boundary overlap, which has led to civilian staff number increases, exodus of senior specialists, and growth in committees.⁶⁰

7.38 In line with the recommendations of people such as Kinnaird and Mortimer, a number of witnesses suggested that the way to strengthen accountability was to have clearly defined boundaries and tasks—precise (usually written) definitions of boundaries. One witness recommended having 'clearly defined, almost contractual, mutual accountability businesslike relationships between the parties that would 'properly define the responsibilities and accountabilities and expected outputs of each party and ensure projects overall are delivered properly'.⁶¹ He suggested that improvement would come through 'process re-engineering': by simplifying the large process chart and locking-in the Customer-Supplier relationship with DMO. He was clear:

...on each project CDG must specify and write down exactly what the ADF wants (MAA) and government agrees. DMO must then supply strictly in accordance with that specification unless prior written agreement to vary is achieved.⁶²

7.39 According to the witness, testimony to parliamentary committees over the last five or so years had shown that problems emerge when this Kinnaird Review recommendation/discipline is not strictly followed.⁶³ In his submission, Air Commodore (retired) Bushell argued similarly that the Defence organisation as a whole 'needs to be reviewed to ensure that roles and accountabilities are clearly identified and aligned and that the resources needed to discharge those accountabilities are also properly identified and aligned'.⁶⁴

7.40 The committee notes the above observation that evidence over the years has shown that 'problems emerge when the Kinnaird Review recommendation/discipline is not strictly followed'. Thus, despite the reforms implemented since 2003, problems persist suggesting that the model may well be broken and tinkering with it is a waste of effort.

Measures to strengthen accountability

7.41 In its submission, Defence advised the committee that reforms to improve project management included:

59 *Confidential Submission.*

60 *Confidential Submission.*

61 *Confidential Submission.*

62 *Confidential Submission.*

63 *Confidential Submission.*

64 *Submission 3, p. 1.*

- Capability Managers are now co-signatories with CDG of DMO's MAAs—reinforces their acceptance of the equipment being acquired for their use; and
- Project Charters are developed for managers of complex and demanding projects to provide individual accountability for project delivery.⁶⁵

The committee considers these written agreements below but starts with the project directive.

Joint project directive

7.42 A project directive enunciates the government's intention. It is a high-level statement about who is going to do what to bring a capability to bear—CDG, DMO and the capability manager. The handbook states that prior to first pass and in consultation with the capability manager and the acquisition agency, the Secretary/CDF issue a Joint Project Directive. After first pass approval, the Secretary and CDF sign the joint directive, which assigns accountability and responsibility for the project from first to second pass approval to:

- CCDG for progressing the project from first to second pass, in accordance with what was agreed at first pass;
- the capability manager and acquisition agency for assisting to develop the capability requirements and for providing agreed resources;
- other key enablers, such as the Chief Information Officer, Deputy Secretary Defence Support and Chief Defence Scientist, for the provision of elements of FIC, and Deputy Secretary People Strategies and Policy for the management of the Department's workforce allocations via the Workforce Guidance Trails; and
- CCDG, in consultation with key stakeholders, for developing specific arrangements for change consideration (including thresholds), which are documented in the Joint Project Directive.⁶⁶

7.43 Following a similar process, after second pass approval the Secretary and CDF issue a joint project directive. It assigns accountability and responsibility for the project up to the closure of the acquisition business case to:

- the capability manager for overall responsibility for the in-service realisation of the capability;
- the CEO DMO through the terms and conditions in the (post second pass) MAA; and
- other key enablers, such as the Chief Information Officer, Deputy Secretary Defence Support and Chief Defence Scientist, for the provision of elements of

65 Department of Defence, *Submission 21*, p. 14.

66 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraphs 3.5.1–3.5.2.

the FICs, and Deputy Secretary People Strategies and Policy for the management of the Department's workforce allocations via the Workforce Guidance Trails.

7.44 Air Marshal Harvey noted that the joint project directive creates certainty by specifying the role of the capability manager.⁶⁷

Materiel Acquisition Agreements

7.45 MAAs form part of a framework of agreements between DMO and Defence which were introduced following the establishment of DMO as a Prescribed Agency in 2005. Described by the Secretary as 'robust and disciplined purchaser-provider arrangements', they are intended to outline the responsibilities and arrangements between the relevant agencies and provide the basis on which the DMO receives most of its budget. An MAA is supposed to state in concise terms what services and product the DMO (as supplier) will deliver to CDG and when.⁶⁸ A draft first to second pass MAA should be ready for signing immediately following first pass approval.⁶⁹ For second pass, the draft MAA details 'the scope and cost of the capability to be acquired', and commits 'the signatory agencies to completing assigned tasks and providing the necessary resources and assets to ensure effective management of the Acquisition Phase'. This draft MAA is finalised and approved after second pass.⁷⁰ As mentioned previously, the relevant capability manager, CDG and DMO are co-signatories to an MAA.

7.46 Air Marshal Binskin noted that when the capability manager signs off on an MAA, a clear up front understanding of what the capability manager wants or has agreed is established. The DMO deliver to that MAA.⁷¹ With regard to the MAA, Mr King explained further:

It is a capability manager that is signing up to say, in effect, 'If CDG and DMO deliver me this aircraft, ship or whatever by such and such a time, with the spares, with the manuals, with whatever, the facilities, then I will bring this capability to bear and make it available to the nation by this time.'⁷²

67 *Committee Hansard*, 7 October 2011, pp. 16, 55.

68 *ANAO Submission 22*, paragraph 59.

69 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.4.48. The handbook states further in the same paragraph 'The responsibility for developing the MAA lies with the CS Div Desk Officer (in conjunction with DMO Emerging Project Team if constituted) in consultation with the CM and DMO Systems Program Office (SPO)'.

70 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 4.3.22.

71 *Committee Hansard*, 5 October 2011, p. 41.

72 *Committee Hansard*, 7 October 2011, p. 16.

7.47 This statement seems to suggest that, having signed off on the MAA, the capability manager then steps to the sidelines to await delivery. The committee is strongly of the view that at this stage of an acquisition the capability manager should be front and centre in the process. As noted earlier, Kinnaird recommended that capability managers 'should be made responsible and accountable for monitoring and reporting to government on all aspects of approved defence capabilities'. (See also paragraph 7.16.)

7.48 Air Marshal Harvey explained the reason for CDG also signing the MAA. He noted that CDG was responsible for getting the project approved. It holds the money in the unapproved project—so at second pass approval the money is transferred across to DMO. He stated:

We basically hold the contract in terms of what was agreed by government, what was agreed on cost schedule capability and all the details that go there. Effectively, while the capability manager is the ultimate customer, we are the ones developing the contract for DMO to deliver at that stage. We are the keepers of the requirements agreed by government.⁷³

7.49 It should be noted, however, that the ANAO has identified in past performance audits several instances where:

...projects did not have an MAA in place at the time of the Second pass approval and one instance where a project appeared on Projects of Concern list and did not have a finalised MAA.⁷⁴

7.50 The ANAO suggested that the challenges associated with major equipment acquisitions increase when 'the MAA does not include sufficient clarity and detail about the project's intended cost, delivery schedule and capability definitions'.⁷⁵ For example, in its audit report on acceptance into Service of Navy Capability, ANAO found:

Navy as Capability Manager, and DMO as acquirer, not fully and formally setting out their respective roles and responsibilities in the form of comprehensive CDG-DMO-Navy Materiel Acquisition Agreements for all acquisition projects. This requirement was agreed to in 2009, and developing these agreements for Navy projects has been a slow process, with completion now expected by December 2011.⁷⁶

7.51 In the committee's view, Defence's measures designed to define the lines of responsibilities and accountability such as the requirement for the capability manager,

73 *Committee Hansard*, 5 October 2011, p. 57. Air Marshal Harvey repeated this statement that the capability manager is the 'ultimate customer for the capability'—that they have 'a strong say throughout the process' in *Committee Hansard*, 7 October 2011, p. 15.

74 *Submission 22*, p. 11.

75 *Submission 22*, p. 11.

76 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 22.

CDG and DMO to co-sign an MAA, will prove ineffective. It notes ANAO's comment about the importance of MAAs being sufficiently clear and detailed about their respective roles and responsibilities. The committee also draws attention to the record of poor adherence to procedure and a lack of attentiveness to risk. There is nothing in the evidence indicating that recent initiatives such as an MAA will change such behaviour. The key issue is about changing management structure and not simply adding more to the process.

7.52 The committee questions why CDG retains such a strong and prominent role after second pass approval—the capability has been defined and government has approved the project deemed to be the best option to deliver that capability. Surely the capability manager must take responsibility for ensuring that the requirements agreed by government are met and that the end product will be accepted into service. There is no point acquiring an acquisition that meets the government's broad requirements but at the time of delivery is not fit for purpose.

7.53 To ensure that capability managers have the authority to exercise their responsibility, they require the authority that now resides with the CDG as departmental coordinator and centre of power. The committee recommends that the capability manager should not only have expanded responsibility but also the financial responsibility after second pass. Under the committee's preferred model, the capability manager would be the sole client with the contracted supplier, through the agency of the DMO. The DMO is a contract and project management specialist advised on technical issues by the capability manager. This model would remove the unnecessary layers of current vested interests and streamline the process through a single point of accountability.

Ministerial Directive to the Defence Materiel Organisation

7.54 One witness who gave in camera evidence to the committee noted that the key accountability document for Defence capital projects between 2005 and 2008 was the carefully negotiated and discussed Ministerial Directive to CEO DMO which existed under the three Defence Ministers of that era.⁷⁷

7.55 This Ministerial Directive provided 'a mechanism to define the relationship between the minister and the CEO DMO'. It established 'the CEO DMO's direct obligations to the Minister for Defence, his overarching responsibilities and his management priorities in relation to DMO's business outcomes'. The minister directed the CEO DMO in relation to his responsibilities by virtue of the minister's executive power to administer the Defence portfolio under section 64 of the Constitution.⁷⁸ According to the witness:

77 *Confidential Submission.*

78 Department of Defence, *Defence Annual Report 2008–09*, Volume Two, Defence Materiel Organisation, p. 80.

Despite its name, this was a boundary defining statement set at the highest levels so it couldn't be disputed. It carved out a defined specialist role for DMO and wrote down the specific accountabilities precisely. Everyone knew their job. And they got on with it.⁷⁹

7.56 DMO's submission explained that the Ministerial Directive established the accountability of the CEO DMO to the minister to achieve, inter alia:

- timely, accurate and considered advice in your role as principal adviser to me on equipment acquisition and through-life support of materiel for defence capabilities.⁸⁰

7.57 The submission notes that the current Ministerial Directive was issued to the former CEO DMO on 28 July 2008 and has not been updated. DMO notes that although it still operates within the principles established by the Ministerial Directive, it may be appropriate, given recent appointments, to review the Ministerial Directive and update it as necessary.⁸¹ The committee supports this proposal. The committee discusses the independence of agencies such as the DMO and their role as devil's advocate in the chapter on contestability which strengthens the committee's support for this proposal.

Project charter

7.58 As noted earlier, Dr Black suggested that the accountability system must 'reach down into the organisation right to front line staff who are ultimately responsible for actual delivery'.⁸²

7.59 For complex and demanding projects, Mortimer recommended that the authority, responsibility and accountability of the project manager should be formally set out in a project charter. Project managers should be held to account for meeting the financial and non-financial performance targets detailed in their charter.⁸³ Defence agreed and responded to the recommendation by indicating that the CEO DMO and CCDG were 'to ensure that such a project charter system is quickly put in place and that specific approvals made by Government can be clearly traced to the charters'.⁸⁴ Defence's response did not mention the capability manager.

79 *Confidential Submission.*

80 *Submission 41*, paragraph 25.

81 *Submission 41*, paragraph 25.

82 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 15.

83 Defence Materiel Organisation, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, 2008, recommendation 3.5.

84 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, The Mortimer Review, p. 28.

7.60 Consistent with this recommendation, one witness argued that accountability comes from 'clearly defined boundaries and tasks'. He suggested that specialist managers should manage their resources, and be held individually accountable for 'outcomes, with a performance management system that has rewards for good performance and meaningful and timely sanctions for under-performance'.⁸⁵

7.61 Defence informed the committee that complex and demanding projects are defined as ACAT I and ACAT II projects and that project manager charters had been instituted for all such current projects.⁸⁶ Even so, an industry representative told the committee his company had witnessed a lack of empowerment to individual project managers and their inability to respond to rapid changes and new ideas mainly because of a large bureaucracy. In his view, these effects lead to inefficiencies, as:

...program managers are forced to deal with multiple stakeholders with different interests and requirements and the result is that temporary problems and programs can lead to risk adverse decisions rather than focusing on long-term capability and cost optimisation.⁸⁷

7.62 Mr Robert Tonkin, Australian Industry and Defence Network, referred to an ineffective structure of delegated authority within DMO that fails to empower people who manage or approve projects to carry out their responsibilities. He argued that 'they do not have a sufficient level of delegated authority to get on with it':

If every decision that is made is more complex, embracing more players, then, by nature you delay the process. Efficiency...is about focusing on what is required getting clarity of what is required, making a decision and then getting on with it.⁸⁸

7.63 The Australian Industry Defence Network suggested allowing jurisdiction delegation levels to flow down to 'the appropriate working level where the Manager has a good knowledge of the platform and capability technologies'.⁸⁹

85 *Confidential Submission*.

86 Attachment A to *submission 21*. ACAT I describes projects that are major capital equipment acquisitions and are normally the ADF's most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical, operating, or support difficulties, and highly complex commercial arrangements. ACAT II describes projects that are major capital equipment acquisitions and are strategically significant to the ADF. They are characterised by significant project and schedule management complexity and high levels of technical, operating, or support difficulty, and complex commercial arrangements. Information taken from Department of Defence, *Defence Capability Plan*, Public version, 2012, p. 7.

87 *Committee Hansard*, in camera.

88 *Committee Hansard*, 11 August 2011, p. 6.

89 *Submission 19*, p. 5.

7.64 Some independent members of the gate reviews suggested that people need to feel empowered 'to go and do things to achieve results' but that the management layers and structures constrain them.⁹⁰ Mr Williams stated:

Ideally you would give them control of the budget and the flexibility to make decisions, but I think that we do have a complex process. We have committees making decisions, which then removes the responsibility and, of course, the accountability from those individuals. So I think that anything that can be done to remove some of that to make sure that we get good people but then empower them to run the project would be a benefit.⁹¹

7.65 Clearly, there are a number of aspects to improving the performance of project managers and their teams including the introduction of project charters with clearly defined boundaries and tasks. But the charters will be ineffective if project managers are not equipped with the appropriate skills and project management experience to fulfil their responsibilities or if unnecessary layers of management encumber their ability to exercise their responsibilities and authority.⁹²

Lessons to be learnt and accountability

7.66 Despite the various measures taken by Defence to clarify responsibilities and have people enter into signed agreements, it remains unclear who is held to account when 'things go wrong'. The lessons learned sections in the MPR hold a clue. They are not directed at any identifiable group, unit or section. Taking just the one example of the MRH-90 helicopter where DMO identified the following lessons learned:

- it is essential that the maturity of any offered product be clearly assessed and understood; and
- elements of a chosen OTS solution may not meet the user requirements.⁹³

7.67 These observations are so broad and vague as to be useless. Worryingly, not only are the lessons self-evident but they also provide no indication of who should be responsible for acting on them. In the committee's view, it would be far more helpful for these lessons to be targeted. For example, the lessons should identify where the initial underestimation of technical maturity occurred and why; where the misunderstanding of user requirements originated; and where in the process those responsible for identifying these mistakes failed to do so. Otherwise the lessons are so general that no one is responsible, or held accountable, for ensuring that they are learnt—in other words they remain lessons to be learnt.

90 Mr Johnston, *Committee Hansard*, 13 June 2012, p. 8.

91 *Committee Hansard*, 13 June 2012, p. 9 and also p. 12.

92 Also see paragraphs 6.29–6.30 which refer to Defence's procurement as process bound and people getting 'bogged down with too much paper work'.

93 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, p. 318. Also see paragraphs 2.44–2.45 of the committee's report.

7.68 The committee suspects that Defence cannot identify the source of the problem because of the diffusion of responsibility and the blurred lines of accountability that troubled Kinnaird, Mortimer, Pappas, Rizzo and Black and continues to be a source of concern for this committee.

7.69 In this regard, the committee in the previous chapter referred to documentation and instances where the project team, while fully focused on detail, sometimes missed the important matters. Dr Davies observed that the thoroughness of the documentation set was never a problem but then went on to say:

If we are talking about accountability and responsibility, in fact the thoroughness of the documentation set actually tends to blur all of those lines. There are so many people who have a finger in the pie of drawing up operational concepts and project definition statements; whereas, ultimately, accountability and responsibility is being able to point at something and say their job is to do X or the person responsible for Y is'.⁹⁴

7.70 In this regard, Air Commodore (retired) Bushell argued that if accountability is to be demanded, it must:

- be traceable directly to the functional objectives of the organisation;
- be defined clearly, unambiguously and not diffused or duplicated;
- be realistic and achievable;
- ensure that those held accountable have the authority and resources required to discharge their accountability; and
- have a continuous performance measurement system (feed-back management loop) in place to provide timely advice of departures from organisational plans and objectives to aid those held accountable and governance oversight.⁹⁵

7.71 In his view, those whose accountabilities were now being reinforced by amendments to joint project directives, MAAs, materiel sustainment agreements and project charters would still be unable to discharge their accountabilities because the five prerequisites for accountability were not in place. His fear was that Defence's 'reorganisation, sharpening of accountabilities, and the resulting load of process will achieve nothing other than to add further complexity, confusion and inefficiency to a failed organisation'.⁹⁶ The committee notes, however, that real authority comes through financial delegation.

7.72 Indeed, as an example of an overburdened bureaucracy, the committee cited project managers disempowered by a complex process that robs them of the ability to

94 *Committee Hansard*, 12 June 2012, p. 32.

95 *Supplementary Submission 3F*, p. 4.

96 *Supplementary Submission 3F*, p. 4.

carry out their delegated authority. Clearly, project directives, MAAs and project charters need to be part of a system that enables those directly charged with authority and tasks to exercise their responsibilities effectively. Otherwise such documents are mere window dressing. To be effective, such agreements must be consistent with a management structure in which responsibility and accountability reside in the appropriate authorities. The committee questions the current structure.

Conclusion

7.73 Throughout the acquisition process, there are numerous groups involved in developing, refining and reviewing capability proposals as well as preparing specialist advice and documentation before a proposal is presented to government for approval. For many years, reviewers and analysts have been concerned about the lack of accountability for decisions and project performance and the blurring of responsibilities. All have made recommendations to rectify these failings, without much effect.

7.74 Defence has responded to their advice, by introducing a number of measures to strengthen accountability. The committee notes these initiatives but is concerned, however, that they will be merely cosmetic if attitudes or management structures do not change. It is of the view that a range of other measures need to be taken into account in order to simplify and streamline the organisation by changed roles and new accountabilities supported by real authority in one person or position—not an amorphous coordinating group such as CDG.

7.75 The committee recommends a realignment of responsibilities in a proposed new management model that is detailed in chapter 15 (recommendations 1–11 in executive summary).

7.76 In the following chapter, the committee again looks at the main groups involved in defence procurement. Its focus, however, is on how well they communicate, meld and transfer their responsibilities and overall work as an integrated enterprise.

Chapter 8

Communication, integration and collaboration

8.1 In November 2010, the minister stated that when dealing with the Secretary, the CDF and the CEO of the DMO, he was 'of course' dealing with 'One Defence'. He was not confident, however, that below this level he received a 'One Defence' view, but rather a perspective from a silo. He indicated that this situation could occur when ministerial submissions had not been properly considered across the portfolio or where appropriate meaningful consultation with external agencies had been absent.¹ Almost a year later, he again referred to a lack of integration within Defence with parts of the organisation working in silos.² Also in the previous chapter, the committee cited Dr Black who referred to 'organisational cohesion' and the importance of Defence functioning as a 'single integrated enterprise'.³ One witness noted that Defence is not like most departments. He explained:

In the military, ADF people put their lives on the line, and it has to execute and implement (rather than concentrate on policy work), which means the ADF needs a lifelong career development structure to do so...the intelligence organisations require linguists and specialists, as does DSTO with scientists. DMO requires a separate commercial culture staffed with business savvy experienced experts.⁴

8.2 Defence's challenge is to have a structure that allows the views of specialist groups to be expressed, questioned and debated. While their views may not prevail in the final decision, they should nonetheless be listened to as part of that consideration. In this chapter, the committee considers the quality of communication between the major groups involved in Defence's capability development process.

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- 1 Stephen Smith MP, Minister for Defence, Address to the Department of Defence Senior Leadership Group, Hotel Realm, Canberra, 26 November 2010, <http://www.minister.defence.gov.au/2010/11/26/address-to-the-department-of-defence-senior-leadership-group/> (accessed 16 April 2012).
 - 2 Minister for Defence—Press Conference—Black Review, Transcription, 9 August 2011, p. 9 of 15, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 April 2012).
 - 3 Paragraphs 7.3–7.5.
 - 4 *Confidential Submission*. Another witness referred to Defence being a number of different organisations operating inside 'that bubble of Defence', *Committee Hansard*, in camera.

Shared understandings

8.3 In 2003, Kinnaird noted that the concept of 'no secrets and no surprises' has to be central to communication between government and agencies responsible for capability development.⁵ He stated:

Government must remain confident that it has a current and accurate understanding of the progress of capability development at every stage of the cycle.⁶

8.4 Kinnaird was unconvinced, however, that government had been receiving advice and information sufficiently adequate to enable it to make strategic decisions on an informed basis.⁷ A number of projects cited in chapter two confirm this view. Indeed in some cases expert advice was corralled even before it could be presented at a senior committee level or was simply disregarded at this level.

Strategy Executive and its relationship with CDG

8.5 With capability development, the first important exchange and transition of knowledge and responsibility occurs between the Strategy Executive, CDG and capability managers.

8.6 Kinnaird and Mortimer made a number of recommendations directed at strengthening the linkages between Defence's strategy and capability decisions. Defence responded to the Mortimer Review with the commitment to implement a 'planning process that institutionalises the links between strategic guidance, force structure, capability priorities and funding that have been developed during the White Paper process'. It was intended that the Strategic Policy Division within the Strategy Executive of the Department of Defence, with the support of CDG, would lead the strategic planning process and draft the classified Defence Planning Guidance.⁸

8.7 As part of an improved Defence planning process, the 2009 Defence White Paper announced the adoption of a five-year planning cycle for major defence decisions. This cycle would include an institutionalised Force Structure Review process intended to improve 'processes for force structure development, definition of capability requirements, and development of capability proposals'.⁹ As a consequence,

5 Department of Defence, *Procurement Review 2003*, p. 48.

6 Department of Defence, *Procurement Review 2003*, p. 48.

7 Department of Defence, *Procurement Review 2003*, p. 6.

8 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, 2009, p. 17, http://www.defence.gov.au/publications/Mortimer_Review_Response.pdf (accessed 16 April 2012).

9 Department of Defence, *Defence White Paper 2009*, paragraphs 8.74 and 13.12.

a Force Structure Development Directorate was established within the Strategic Policy Division to 'improve alignment between capability and strategy'.¹⁰

8.8 The Strategy Executive is also responsible for drafting the Defence White Paper. As the key national defence strategy document, the White Paper sets out the government's defence strategy for the nation. The Strategy Executive is required to translate the broad guidance of the White Paper into an annual Defence Planning Guidance to provide a more refined assessment needs. At the same time, the Strategy Executive must ensure that the development, acquisition and evaluation of capabilities aligns with Defence's strategic priorities. According to the Strategy Framework 2010, this alignment is achieved in close collaboration with the CDG and capability managers.¹¹

8.9 Once capability plans are identified in the White Paper and Defence Planning Guidance (DPG), CDG takes over and leads the identification and development of capabilities which make up the DCP. Because the documents have such a pivotal role, it is vital that they are based on robust analysis and reflect a consistent approach to capability acquisition.¹²

8.10 As noted in chapter 3, however, there is growing concern that the capabilities prescribed in the White Paper and contained in the DCP will not be delivered in accordance with the timeline articulated in the White Paper.¹³ It would appear that there is a disconnect emerging between government expectations of Defence to achieve an operational effect as set out in the White Paper and the capability currently operational or logjamed within the delayed procurement process. Any such discrepancy has implications for the linkages between strategic guidance and capability development and hence the efficacy of the capability process. In this regard, Henry Ergas and Mark Thomson made the following observations about the DCP:

Were that plan efficient, it would ensure two things. First, that the 'right' defence capabilities are sought consistent with prevailing circumstances and strategy. Second, that planned defence capabilities are deliverable with available resources—financial, human and bureaucratic.¹⁴

8.11 The primary concern is that there could be a mismatch between the acquisition and the retention of capability and strategic circumstances and

10 Department of Defence, *Strategy Framework 2010*, p. 39.

11 Department of Defence, *Strategy Framework 2010*, pp. 39–40.

12 Department of Defence, *Submission 21*, p. 16.

13 Graham Priestnall, Australian Industry and Defence Network Inc, *Committee Hansard*, 11 August 2011, p. 20.

14 Henry Ergas and Mark Thomson, 'More Guns without Less Butter: Improving Australia's Defence Efficiency', *Agenda*, ANU College of Business and Economics, vol. 18, no. 3, 2011, http://epress.anu.edu.au/apps/bookworm/view/Agenda%2C+Volume+18%2C+Number+3%2C+2011/7641/Text/ergasthompson.html#toc_marker-9 (accessed 20 January 2012).

requirements.¹⁵ Similarly, Pappas provided a range of recommendations directed at reducing the risk of misalignment between strategic requirements and procurement priorities and specifications. They included establishing a Force Structure Development cell responsible for 'integrating the end-to-end process of capability development and a mandate to ensure tight alignment between strategy and capability'.¹⁶

8.12 The Strategic Planning and Capability Development streams of the Strategic Reform Program are believed to be 'putting in place improved processes for strategic guidance, and better linkages between that guidance and capability development'.¹⁷ However, as Dr Black noted:

The Strategy Framework does not document the end products expected of, nor how to create, what would be recognisable in other organisations as a corporate strategy or plan.¹⁸

8.13 Indeed, the process should work and the DCP should be achievable if the DCP truly reflected a refined assessment of needs that align with strategic priorities, and if priority funding were identified prior to the Strategy Executive giving approval to CDG to develop the DCP. Clearly, this is not the case.

8.14 In August 2011, the Minister for Defence announced the establishment of an Associate Secretary (Capability) position to implement the Black Review recommendations. The Associate Secretary (Capability) was to be responsible for reviewing capability proposals before being considered for inclusion in the DCP, in order to ensure that they 'reflect the government's strategic requirements and that all risks are well understood'.¹⁹ This appointment is no longer going ahead and in this context the committee notes the already heavy civilian overload of senior positions. Driven in part by the complexity of the organisation and its processes, the number of deputy secretaries has increased from 4 in 1993 to 14 currently.²⁰ One witness

15 Stephan Frühling, 'The Missing Link: Politics, Strategy and Capability Priorities', *Security Challenges*, vol. 5, no. 2, (Winter 2009), p. 50.

16 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 53.

17 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, pp. 54–55.

18 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 55.

19 Stephen Smith MP, Minister for Defence, 'Improving personal and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 24 April 2012).

20 Chief Operating Officer, Chief Finance Officer, Chief Information Officer, Deputy Secretaries for Defence People, Intelligence and Security, Strategy, Defence Support, SRP, Special Advisor Strategic Reform and Governance, Chief Defence Scientist, CEO, DMO and three general managers in DMO.

observed that with 'so many senior folk, it is no wonder that coordination requires so many extra committees'. Committees consume time.²¹

8.15 The primary step toward better alignment between strategy and capability development would be to ensure that the White Paper—the corner stone document—sets out a realistic and achievable program for capability development. The committee has made a recommendation to this effect (see recommendations, pp. 55 and 265).

8.16 In the following section, the committee looks at defence procurement as a combined Defence effort and considers the communication network and the degree of cooperation and collaboration across the numerous groups that contribute to capability development once a project enters the DCP. Again the committee draws attention to the hierarchy of advisory, review, oversight and decision-making bodies whose work feeds into the capability development process.

Management matrix and linkages between groups

8.17 According to Babcock, the success of a major project requires an 'integrated enterprise approach operating a comprehensive asset management model with shared data'.²² But as noted earlier, there are many groups that contribute to the final submission put to government for project approval and its ultimate delivery into service. The main ones are: the capability managers (end users); the CDG, (sponsors of the project); the DMO (acquisition agency); the DSTO (expert technical adviser); and finally industry, which delivers the product. While these four groups are the main ones, there are numerous others. Each has its own priorities and notions of what the end product should be, do and cost. At times, their views may clash even within Defence. Indeed, one industry representative described Defence as 'a mass of bodies acting largely independently'.²³ Another witness observed that:

Defence is and probably always will be a tribal community and culture made up of separate proud specialist units, each of which has its own important tradecraft.²⁴

8.18 Thus, Defence must find a way to counter the tendency for the various groups to work as segregated inward looking entities and create a structure that encourages the free flow of information, the exchange of ideas and genuine collaboration. Such a structure would be designed to prevent or at least discourage situations from developing where expert technical advice is corralled or misinterpreted, or CDG,

21 *Confidential Submission*.

22 *Submission 15*, p. [8].

23 *Committee Hansard*, in camera.

24 *Confidential Submission*. For an indication of the divisions that existed within Defence during 1960s and 1970s see Sir Arthur Tange, *Defence Policy-making: A Close-up View, 1950–1980, A Personal Memoir*, Canberra, 2008.

DMO, and capability managers have different expectations and understandings of an acquisition.

8.19 Such arrangements, however, are not intended to undermine contestability. Contestability needs to be resolved at the strategic level with all the elements of that advice going to coordinating agencies and government so that the complexity of the cases being put is understood, along with all the risks.

8.20 The Auditor-General told the committee that in Defence's search to improve its performance, there had been a level of centralisation of particular functions in key organisations, such as DMO. He explained that the great benefit—the strong positive—was in placing a critical mass of people with the right skills to deliver on project acquisitions and sustainment in the one agency. According to him, however, there was a downside, in that it:

...creates greater organisational linkages across the organisation for DMO and Navy to talk together and to communicate, and similarly across the services. In the interests of getting the skills in a central place and in getting the efficiencies and returning some savings to budget, you pay the price in increasing the complexity of communication and liaison within organisations.²⁵

8.21 Evidence indicates that the correct alignment of best practice and appropriate skilling in the organisation has not come to pass.

8.22 Also addressing the challenge of building healthy networks between the various groups, Air Marshal Brown told the committee that as a direct consequence of the matrix management system in Defence, 'the current organisational construct puts high transactional costs and a lot of communication between the groups'. He was of the view that there may be 'other constructs that would probably be more effective and efficient than the ones we have at the moment'.²⁶ In his view:

The thing you need to be careful of is that we have constructed a whole lot of input-focused organisations; that is the way we are at the moment. The reality is that we have an output that we have to produce. It is much better if you can get everybody involved focused on the output rather than what the inputs are.²⁷

8.23 According to Air Marshal Brown, one of the big disadvantages of a 14-group organisation is that an extraordinary amount of effort across the groups is required to get anything done.²⁸ In the following section, the committee looks at those engaged in a major acquisition program from an enterprise perspective.

25 *Committee Hansard*, 11 August 2011, p. 25.

26 *Committee Hansard*, 5 October 2011, p. 49.

27 *Committee Hansard*, 5 October 2011, p. 49.

28 *Committee Hansard*, 5 October 2011, p. 49.

Smooth transitions

8.24 Once a project is in the DCP, a number of witnesses pointed to the need for smooth transitions from one phase to the next as a capability progresses toward delivery and in-service operation. Mr Kim Bond, ANAO, explained that, during its audit into acceptance into service of Navy capability, ANAO looked for the overlying administration that would show adherence to basic systems engineering steps. This examination covered the initial requirements phase in deciding what is to be purchased, through to building, commissioning and decommissioning it. He stated:

We found a pattern of inconsistent application of steps...We show that while you can find the bones of those processes throughout Defence, we did not find them universally adhered to and we did not find them joined up. So where one organisation may have been given responsibility for one stage of the process, it has not necessarily smoothly handed over to the next phase of the process. Nor was there sufficient overlap.²⁹

8.25 The committee has referred to the divisions between the various groups engaged in defence procurement projects. Their ability and willingness to connect has significant implications for the success of a project. For example, Mr Bruce Green stated that DMO needs to be sure that it is 'not being given a hospital pass'. He argued that the people running the procurement are the ones at most risk if things go wrong and therefore need to be intimately involved in the discussion on technology, risk, timing, budgets, procurement methods and through life considerations.³⁰ He argued that the acquisition agency needs to be able to say to government that 'it is confident it will be able to deliver the capability at the defined cost and within the time determined as part of the Capability Definition process and approved by Government'.³¹

8.26 Dr Davies made similar observations about project risks coming home to roost in DMO. He referred to comments made ruefully by DMO executives about the Defence Capability and Investment Committee dreaming up a dead cat, which they then throw over the fence for DMO to 'reanimate'.³² Thus DMO needs to work cooperatively with CDG and capability managers to be certain that all parties are fully aware of the requirements of the project and the risks to its success.

8.27 Also in this context of collaboration, a number of defence analysts and reviewers have remarked on the distance between capability managers and the acquisition agency, most evident in the relationship between the Chief of Navy and the DMO. In its audit performance into acceptance into service of Navy capability, ANAO highlighted the importance of DMO and Navy working together to avoid

29 *Committee Hansard*, 11 August 2011, p. 29.

30 *Submission 20*, p. 3.

31 *Submission 20*, p. 2.

32 *Committee Hansard*, 12 June 2012, p. 38.

handovers to Navy becoming 'voyages of discovery' in the final stages of the project.³³
The ANAO found:

...greater emphasis needs to be applied by Navy, CDG and DMO, in maintaining a shared understanding of the risks to the delivery of the Navy capability agreed to by government.³⁴

8.28 While the ANAO identified the need for the three groups to share responsibility, as the committee noted earlier, each group should have distinct responsibility for key components of an acquisition and should be held accountable for their respective performance. The issue is ensuring that each group has the appropriate allocation of responsibility and that the respective responsibilities are complementary.

8.29 The audit then went further pointing to a need for the three groups to share the responsibility for mitigating those risks, 'including in relation to implementing effective recovery actions, when issues arise that threaten the acquisition of that capability'. It stated that, among other things, without improved communication and collaboration across the relevant parts of Defence during a project's lifecycle the necessary improvements in acquisition outcomes will not be achieved.³⁵

8.30 Clearly, when different agencies or groups within Defence assume carriage of a particular project, they must be fully aware of all aspects of the acquisition particularly any risks to its successful delivery. There should be no 'voyages of discovery', but more to the point, communication is most effective when the communication is limited to as few as two players—the more layers and more players, the more difficult communication becomes.

Involvement of capability managers

8.31 As noted in the previous chapter, Defence agreed that capability managers should act in a stronger assurance role to ensure there is appropriate oversight and coordination of all elements necessary to introduce a capability. It noted, however, that from time to time there may be tension 'between the DMO's ability to deliver a capability to its approved scope and/or schedule, and a Capability Manager's judgement that this capability can no longer meet his operational requirements (which

33 ANAO, Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, paragraph 29.

34 ANAO, Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, paragraph 33 and *Committee Hansard*, 11 August 2011, p. 24.

35 ANAO, Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, paragraph 33.

may have changed since the original approval)³⁶. Hence the committee believes that the client should be in charge with direct accountability from the provider, not through intermediaries.

8.32 Commenting on the relationship between capability managers and the DMO in his 2009 audit, Pappas also noted a breakdown in communication between them. He observed that there appeared to be insufficient linkage between the acquisition process for platforms and the delivery of their enablers (such as wharfs, refuelling facilities and communications equipment).³⁷ He explained that as a result, 'platforms had arrived without the enablers they needed to create a fully functioning capability, either due to poor programming or insufficient consideration of the requirements'. In his view, this situation was exacerbated 'by a lack of clarity as to who is responsible for delivering each of the Fundamental Inputs to Capability (FIC), and appears to be more severe for enablers that are separate projects (such as communication architecture)'. He surmised from this situation that interdependencies between projects were not as well understood as they could be.³⁸ This observation not only highlights the confusion and lack of clarity surrounding the roles and responsibilities of those contributing to the delivery of a capability but of the need for someone to exercise central authority for integrating the whole process. Clearly, the capability manager who accepts a capability into service and will use that capability is best placed to be that central coordinating authority.

Strengthening relationships

8.33 While Air Marshal Binskin acknowledged that prior to 2008 the capability manager may have been 'fairly removed from the process', he indicated that they were now more prominent: they were 'right up front':

...the capability manager signs off on projects as they start—and it is all part of their maturation as they go through—that it will meet the needs, will there be capability gaps or not, risks that are foreseen, and whether the service or the capability manager can even accept that into service in the time. So the capability manager is more up front now.³⁹

8.34 Mr King also accepted that there was a time post Kinnaird 'where the centralisation of the capability development under CDG and the DMO operating as the acquisition organisation 'appeared to disenfranchise the capability managers in the process'. He stated that the situation led to 'a period where, despite having the two pass process in place, the CM, CDG and DMO were not interacting, coordinating and

36 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, Government response to Mortimer's Recommendation 3.2—'As a fundamental principle, oversight and coordination of all elements necessary for the introduction of a capability should be exercised by the relevant Capability Manager', p. 26.

37 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 56.

38 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 57.

39 *Committee Hansard*, 5 October 2011, pp. 16 and 17.

integrating as well as they might'. This breakdown in communication was particularly evident in the maritime space. Mr King explained in simplified terms what he thought had happened:

...the customer base—the capability manager—had developed a feeling that DMO would just pass something or throw something over the fence at them and they would have to take it. I think they had fallen into a mode of 'Well, I'll see if I like it when I get it.'⁴⁰

8.35 He explained that although the correct processes were in place it was a matter of culture and the attitude of the people in the organisation who were executing them:

I think we had allowed that to fall into a state that was not as good as it could have been. I think we are working very hard and have worked very hard and have already made significant improvements. In particular, DMO is responding to and engaging with our capability managers and making sure that they are fully engaged and fully understand what we are doing and the challenges we are facing. I would be fairly confident or I would like to think that they would agree that we are making big steps forward in that direction.⁴¹

8.36 Air Marshal Harvey supported the view that capability managers now have a strong say throughout the process.⁴² Indeed, Defence is confident that some of the measures discussed in the previous chapters, such as project charters and MAAs, would not only help clarify responsibilities and improve accountability but also help to strengthen linkages and relationships.

8.37 An important question for the committee is how such a situation, which effectively disenfranchised the capability manager, was allowed to develop and whether the very management structure gave rise to the damaging culture and attitude cited by Mr King. While MAAs give the appearance of capability managers having responsibility, being accountable and working in lockstep with CDG and DMO, they do not of themselves enable the capability manager to exercise appropriate control or authority.

Materiel Acquisition Agreement

8.38 In Mr King's opinion, the introduction of project directives and the capability manager co-signing the MAAs has been an important shift toward improving the relationship. According to Mr King, Defence now have 'a very structured approach to not just how to deal with the materiel aspect but how to deal with how we are going to introduce a capability into service. That has been a more recent shift, which I think is

40 *Committee Hansard*, 7 October 2011, p. 54.

41 *Committee Hansard*, 7 October 2011, p. 55.

42 *Committee Hansard*, 7 October 2011, p. 15.

positive'.⁴³ He noted further that the MAA protects against scope creep—an unauthorised change or request for more capability. He explained:

So our project teams cannot operate outside the MAA. But if there is a real and genuine need that has emerged, new threat, because projects are long, then the process now in place is: we go back to the government and advise them of the need, obviously supported by the sponsor, the capability manager, and then government makes a decision to change its approval.⁴⁴

8.39 The ASLAV upgrade, which was cancelled within the last 12 months, shows that this measure is not working.

8.40 The committee has also discussed the value of project directives, project charters and the Ministerial Directive to DMO. Not only are such documents key accountability tools but they also help to establish shared understandings. One witness stated that forging a 'working together' approach could only be achieved if built on 'well defined, written projects foundations'. He said:

The most critical of these is the clear definition of the handoffs between those in the chain who contribute to the outcomes i.e. each party must know exactly what is expected of them so that fuzzy arguments are avoided about who is responsible.⁴⁵

8.41 If implemented and properly adhered to, such measures should go some way to prevent DMO from receiving a 'hospital pass' or the capability manager, embarking on a 'voyage of discovery' after taking delivery of a product. The committee has noted, however, the record of failed reforms that have focused on process. Despite Defence's confidence in its initiatives, the committee can envisage that, with the passage of time, the same damaging behaviours are likely to return to perpetuate the pattern of poor performance.

8.42 Defence has also introduced project initiation boards as an additional means to bridge the differences between those involved in an acquisition project and to bring them together as a group early in the process.

Project initiation and review board

8.43 In March 2012, Vice Admiral Peter Jones noted that during the recent DCP review the Service Chiefs made clear that they wanted 'to be involved at the very beginning, much more so than at the end, doing a final tick-off of the paperwork at a defence capability committee'.⁴⁶ At the same time, Mr King informed the Parliamentary Joint Committee on Foreign Affairs, Defence and Trade that the CDG

43 *Committee Hansard*, 7 October 2011, p. 16.

44 *Committee Hansard*, 7 October 2011, p. 17.

45 *Confidential Submission*, p. 21.

46 Parliamentary Joint Committee on Foreign Affairs, Defence and Trade, *Committee Hansard*, 16 March 2012, p. 51.

had commenced a project initiation board process, which involved CDG, DMO and capability managers. The board replaces the Options Review Committee (ORC) According to Defence, until recently projects were considered early in the capability development life cycle by the ORC but experience had revealed shortcomings:

A large number of Groups and Services were represented, often at junior level, making the committee unwieldy and lacking authority.⁴⁷

8.44 Vice Admiral Jones, who runs the board, explained that Defence was putting a lot of emphasis on the board, on knowledge management and getting general manager engagement. The membership of the board is smaller than that of the ORC and is more senior. The board enables these senior people, who bring project knowledge with them,⁴⁸ to 'nail down the scope [of the project] at the very beginning before people go off too far'.⁴⁹ He stated:

One of the benefits of doing the business cases in a joint environment is that you have a much larger number of projects from which to draw lessons across the environmental stovepipes. We see a lot of use at times of bitter experiences and lessons feeding into the projects.⁵⁰

8.45 Although the initiation board is intended to capture knowledge from past projects,⁵¹ it should be noted that Air Commodore (retired) Bushell argued that the project initiation board proposal, 'will not improve capital equipment acquisition'. He maintained that at that high level, the board would 'have nobody who has the faintest idea about the hard operational and technical aspects of the capability, or how the project should be managed'. While agreeing that the Service Chiefs need to be involved, he noted that they need to be genuinely accountable.⁵² The committee agrees that the experienced hands and technical subject matter experts need to be involved in the assessment and that dissenting voices must have a way of being heard. The examples cited in chapter 2, clearly demonstrate that in a number of cases critical technical advice on risk did not reach senior levels—ill-informed decisions were made.

Committee view

8.46 The committee notes the establishment and intention of the project initiation board as a means of bringing capability managers, DMO and CDG together at an early

47 *Supplementary Submission 21B*.

48 Parliamentary Joint Committee on Foreign Affairs, Defence and Trade, *Committee Hansard*, 16 March 2012, p. 50.

49 *Committee Hansard*, 13 June 2012, p. 27.

50 Parliamentary Joint Committee on Foreign Affairs, Defence and Trade, *Committee Hansard*, 16 March 2012, p. 50.

51 Parliamentary Joint Committee on Foreign Affairs, Defence and Trade, *Committee Hansard*, 16 March 2012, p. 50.

52 *Supplementary Submission 3F*, p. [5].

stage to build stronger communication networks and to lay the foundations for a collaborative approach. Although accepting the reasoning behind the creation of the boards, the point remains that they can only be as good as the information and analysis that they have at hand and their ability to ask the right questions. In this regard, the committee believes that much work remains to be done to ensure that the boards are able to tap into a deeper understanding of the feasibility of a proposal and reach a much better appreciation of the operational and technical aspects of the capability under consideration. This means that these most senior officers must ensure that the board is not only a top-down exercise but that it draws on expert analysis and the experiences of those directly involved in the project. Another niggling concern is that the board will turn out to be a simple re-badging of the Options Review Board and hence replicate the same shortcomings—an unwieldy committee made up of a number of groups lacking authority and whose members are too junior. The committee has heard nothing to indicate that, despite current enthusiasm for the boards, they will not revert to form.

8.47 Earlier in this chapter, the committee noted the government's intention to appoint an Associate Secretary (Capability). According to the minister, the officer was to be responsible for the integration of work in relation to capability development by Strategy Group, CDG, the DMO and the DSTO. He stated:

In particular, this officer will ensure the more effective contestability and integration of advice at the early stages of the process, as well as for ensuring the performance and accountability of the overall capability development, acquisition and sustainment chain.⁵³

8.48 As noted earlier, the government is no longer proceeding with the appointment but has yet to indicate how the identified problem is to be rectified.

Defence Science and Technology Organisation

8.49 DSTO is also an important participant in capability development. It has a central role in providing technical advice and support. Indeed, the Chief Defence Scientist is responsible for the provision of technical risk assessments, technical risk certifications, the development of Science & Technology (S&T) project plans and for providing other S&T support as required.⁵⁴

8.50 Pappas' audit found, however, that there was scope for DSTO to have a more constructive engagement in pre-approval assessments. He noted that some DSTO assessments were 'not always as helpful as they could be':

53 Stephen Smith MP, Minister for Defence, 'Improving personnel and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 1 February 2012).

54 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.13(i).

...a number of risks on the AWD project were unknown, but were classified as 'High' (when they could have been anywhere from 'Low' to 'extreme')—which makes interpretation difficult. There is also the possibility that assessments use the 'High' risk category often that other parties become desensitised to risk.⁵⁵

8.51 He explained that a 'clearer indication of the most critical risks would help those tasked with risk management to know where to focus'. Worryingly, he also observed that:

DSTO involvement and assessments are not always paid the respect they should be; scope and specification changes make the conduct of a Technical Risk Assessment (TRA) very difficult and there does not appear to be consistent criteria that determine the degree of initial and ongoing DSTO involvement in retiring technical risk in projects. Closer cooperation will have two mutually reinforcing benefits:

- The grounds for risk assessments and potential ways to reduce/mitigate the major risks will be better communicated to and understood by the project teams responsible for the project.
- The DSTO staff performing risk assessments will develop a deeper understanding of how project teams can and do manage risk over time. This will help inform future recommendations.⁵⁶

8.52 Furthermore, Pappas found that wording in DSTO technical risk analyses was 'sometimes adjusted to conform to Cabinet submission writing conventions'. Although the final Technical Risk Certification remains unchanged and the Chief Defence Scientist agrees to the final version of the cabinet submission prior to sign-off by the Secretary and CDF, Pappas suggested that there was a risk that 'key messages and an independent perspective may be lost'.⁵⁷ It should be noted that Defence informed the committee that the Technical Risk Certificate for each project is 'taken verbatim into the advice to Government'.⁵⁸

8.53 Clearly, Defence must ensure that the technical advice from DSTO is provided to key decision-makers in a way that accurately reflects DSTO findings and is able to be understood and fully appreciated by them. The troubling history of persistent underestimations of the amount of developmental work required to bring a capability into service suggests that either there is inadequate or poor analysis or, as suggested by Pappas, DSTO assessments 'are not always paid the respect they should

55 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 82.

56 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 82. The audit recommended that technical scrutineers be involved in ongoing measurement and management of technical risk.

57 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 50.

58 *Supplementary Submission 21B*.

be'.⁵⁹ In fact, it is said they are often ignored and written down so as to be meaningless.

8.54 Also, it is important to consider whether DSTO is currently being asked to do more than it is capable of doing or whether it has the right people to do the assessments. For example, DSTO personnel do not have an operational background and may struggle to make a considered assessment on the impact that a particular technical issue may have on capability, training or certification.⁶⁰ Finally, there is another matter of concern with possible conflicts of interest or moral hazard in that the opportunities for collaborative activities and funding have in the past driven DSTO to recommend a course of action that may not be in Defence's best interest.

Industry

8.55 Many witnesses recognised that Defence's relationship with industry is critical to the success of an acquisition. The committee has already noted the importance of the early engagement of industry, even as early as the White Paper stage, so that Defence is fully informed to prevent it from closing off options prematurely or embarking on a project that is not feasible. But engagement is also necessary as the project moves through the needs into the acquisition phase.

8.56 The Australian Business Defence Industry Unit spoke of the importance of having 'real partnerships between Defence and industry early in the development of capability concepts' as well as throughout the lifecycle of systems'. In its view, such a good relationship can 'only lead to better capability, better technology and lower life-cycle cost'. According to the Unit:

Early industry involvement can lower Defence risk and can be done in ways that maintain Value for Money objectives and market-based competition. Defence should work together with industry to find ways to promote early engagement.⁶¹

8.57 One industry representative stated, however, that he was 'not convinced that the right discussions go on to get the right capability and minimise the risk we enter into'. In his view, there was a significant gap in the discussion—that is the risk that industrial capability and capacity to deliver a project on time and on budget was missing in the entirety of Defence's conversation with industry.⁶²

8.58 In chapter 2, the committee noted a number of instances where there had been a breakdown in the relationship between Defence and the contractor—Super Seasprite and the FFG Upgrade, and serious misunderstandings with the AWDs. The committee

59 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 82.

60 Evidence taken during private briefing with Defence.

61 *Submission 6*, p. 5.

62 *Committee Hansard*, in camera, p. 19 and information obtained during committee's visit to South Australia and Western Australia.

is firmly of the view that industry's relationship with Defence, particularly the DMO, must not only start early but remain on a firm and constructive footing throughout capability development, delivery and sustainment. The committee looks closely at the relationship with industry in Part VI of the report.⁶³

Conclusion

8.59 The committee has underlined the importance of Defence personnel being aware of their responsibility and accountable for the performance of projects under their purview. Ensuring that all engaged in procurement activities clearly understand their responsibilities and how they interact with those of others would be a firm step in the right direction. While on paper procedures such as MAAs and project initiation boards look promising, the committee remains to be convinced that in practice they would be effective. It has already raised concerns about non-compliance with policy and guidelines, disenfranchised capability managers and disempowered project managers.

8.60 Although groups may understand their responsibilities and be compelled to sign agreements, they cannot be made to work together harmoniously if there are structural, resource or skills impediments. In this regard, Defence needs to pay close attention to creating an environment, especially through its management structure, that is inclusive, counters the tendency for groups to work in silos and allows those with responsibility to exercise their authority. In doing so, Defence should also be intent on removing administrative layers not adding to them. As explained in chapter 15, there should be direct contractual agreements after second pass between clients (capability managers) and contracted providers without third party involvement. Without such a standard commercial approach, there will be no change, only more process, and more bureaucratic layers clogging up the system.

8.61 The committee also notes the establishment of the project initiation board but again reiterates its concern about such initiatives promoting form over substance. MAAs and new boards might be part of the answer but if not accompanied by deeper changes will only add another layer to an already complicated process without improving communication and strengthening the relations between the various groups.

8.62 The committee's recommendations look beyond process to the more important management matrix model.

Recommendation

8.63 The committee recommends that all matters concerning strategic planning, capability planning, industry policy, costing and all matters for the coordination of contestability from DMO, DSTO and industry should remain with the current Strategic Policy Group and CDG in combination.

63 See for example paragraphs 2.6–2.7; 2.19; 2.27–2.30; 2.46 (MRH-90 Helicopter); 2.49–2.51; and 2.76.

Recommendation

8.64 The committee recommends that accountability for all service specific procurement items should be exclusively transferred with budgets to Service Chiefs, who should be responsible for all procurement and sustainment of their materiel. This transfer of responsibility occurs after proposals have been thoroughly tested internally and externally and after government decisions are made at second pass.

Recommendation

8.65 The committee recommends that the capability manager should have expanded responsibility and importantly financial responsibility after second pass. Under the committee's recommended model, for all acquisition projects, the capability manager would be the sole client with the contracted suppliers; DMO's role being limited to tendering, contracting and project management specialities, strictly according to the terms of the second pass decision. All specification changes should be monitored by CDG and put to government for agreement, as currently the practice, with the capability manager to be fully accountable.

Recommendation

8.66 The committee recommends that all matters of coordination, overall budget management monitoring and reporting after second pass should remain in the current CDG, but without budgetary control.

Part IV

Contestability and independent advice

In his *Review of the Defence Accountability Framework*, Dr Rufus Black suggested that Defence can achieve stronger decision-making and strategic direction setting in a number of ways including:

Establishing mechanisms for increasing contestability of key decisions (e.g., red teams) in a nonadversarial way to improve the quality of decision-making by formalising and institutionalising contestability for key decisions.*

He was of the view that to ensure high quality decisions for large and complex projects there must be space for contestability. In the following two chapters, the committee looks at contestability and Defence's quality assurance framework for its acquisition programs. It is interested in the extent to which ideas, proposals and decisions related to defence procurement are informed by independent and impartial advice.

*Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 10.

Chapter 9

An informed organisation—contestability

9.1 In August 2009, the Minister for Defence identified a lack of contestability as a weakness in Defence's accountability and decision-making system. He indicated that measures would be taken to apply greater contestability and rigour, particularly in the pre-first pass phase of acquiring a capability.¹ In this chapter, the committee considers the role of contestability in the early stages of capability development.

Early stages—Defence White Paper

9.2 The Defence White Paper sets out the strategic approach that Australia will take to defend itself and protect its interests, and therefore provides the strategic structure upon which the DCP and other planning documents are developed. Given the importance of this document, it is essential that its contents are based on sound analysis and provides a coherent framework and process to ensure consistent compliance.

9.3 Professor Hugh White argued that the 2009 Defence White Paper recognised that defining strategic interests and objectives in a clear way was an important step in any rigorous process towards setting capability priorities. Even so, in his view, the White Paper failed to provide such clarity because its account was 'undermined both by conceptual muddles and by substantive strategic misjudgement'.² In chapter 3, the committee noted the call by a number of defence analysts for greater contestability to inform the capability decisions announced in the White Paper. Notably, the veracity of the decision-making process regarding the purchase of the 12 submarines was questioned.³ The underlying issue was why the capability was prescribed in the White Paper without any apparent robust contestability and before consideration of the procurement options, and the need for trade-off between cost, schedule and capability.

9.4 In regard to open and rigorous debate at the strategic level, the Black Review found 'insufficient contestability of decision-making' especially in respect of strategic decisions and 'big ticket' decisions related to the acquisition of capability. It continued:

1 Stephen Smith MP, Minister for Defence, 'Minister for Defence—Press Conference—Black Review', Transcript, 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 February 2012).

2 Hugh White, 'A Wobbly Bridge: Strategic Interests and Objectives in *Force 2030*', *Security Challenges*, vol. 5, no. 1, (Winter 2009), p. 29.

3 See paragraphs 3.2–3.13 and 3.18.

The theme emerging was a strong desire for internal mechanisms to produce more nuanced options around big strategic choices and to expose more frequently, well-argued alternative options around these choices.⁴

9.5 At the centre of these concerns is the issue of the quality of analysis that underpins the White Paper and the documentation derived from it. Whilst the committee accepts that much of the information that informs the White Paper process is a matter of national security, it takes the view that such analysis could be strengthened with the introduction of greater contestability within the process by way of independent review and analysis.

Former Force Development and Analysis Division

9.6 Some analysts and witnesses referred to the Force Development and Analysis (FDA) Division, which no longer exists, as a potential model for restoring contestability and independent advice back into the capability development process. For example, Dr Thomson noted that until the late 1990s, capital investment program and projects were subject to independent scrutiny and analysis by the FDA.⁵

9.7 The Australian Industry Group Defence Council explained that the FDA Division, including its Systems Analysis Branch, had its genesis in the 1960s McNamara model in the Pentagon. This model 'applied systems analysis as a basis for making sound decisions on complex weapons acquisitions'. McNamara also introduced Planning, Programming and Budgeting, including a Five Year Defence Plan (FYDP), which was 'the key policy document embraced by FDA'. The head of the FDA was responsible for developing the FYDP or 'Pink Book', now the DCP.⁶

9.8 Established as a central policy division in response to Sir Arthur Tange's 1973 report, the FDA was part of an effort to create an integrated system for study and debate around the Defence program. According to Dr Davies, the FDA was central to the concept of contestability and had two primary roles:

- to develop the paperwork on force development proposals for senior committee consideration; and
- to test the logic and quantify, through 'rigorous operational research and scientific inquiry', the effectiveness, costs and benefits of competing proposals.⁷

4 Rufus Black, *Review of the Defence Accountability Framework*, Department of Defence, January 2011, p. 51.

5 Andrew Davies and Mark Thomson, *Submission 8*.

6 Australian Industry Group Defence Council, *Submission 10*, pp. [15-16].

7 Andrew Davies, *Let's test that idea—contestability of advice in the Department of Defence*, Australian Strategic Policy Institute, 22 January 2010, p. 5.

9.9 Dr Davies held that there was an 'enduring need' to apply scientific method to evaluations of defence proposals. He explained that whereas the DSTO engages in scientific work, it 'sits almost at arm's length—they are engaged in the defence business'. In his assessment, the reinstatement of an organisation which engages people who have the 'political, the organisational nous and the technical skills' to analyse projects was required.⁸

9.10 Dr Brabin-Smith, former First Assistant Secretary of the FDA Division, noted in his submission that the FDA's responsibility was to 'rigorously examine each and every proposed acquisition well before it went from the Department to the Minister'.⁹ He explained that the division had an experienced civilian head and was answerable through a Deputy Secretary to the Defence Secretary. The Division had several responsibilities including the provision of impartial analysis of whether proposals for force structure development (i.e. new capability proposals) were:

- individually and collectively consistent with government-endorsed strategic priorities;
- affordable overall; and
- sufficiently well-developed to be fit for submission for consideration by government for approval and acquisition.¹⁰

1997 Defence Efficiency Review and the abolition of the FDA

9.11 In 1997, the Defence Efficiency Review (DER) report, 'Future Directions for the Management of Australia's Defence' noted the call for 'substantial changes' to capability development analysis within the department:

Our starting point for change is to delineate much more clearly who brings the various bits of information to the decision and who is to be held accountable for achieving the various outcomes.¹¹

9.12 According to a former senior Defence policy official, Mr Allan Behm, whilst the efficiency review streamlined the department organisationally by removing duplication, 'it failed to maintain a capacity for disciplined analysis':

FDA ran the heavy rollers of its considerable analytical capability over all substantial acquisition proposals and, in consequence, was loathed by the military. With no friends in high places, FDA morphed into a new

8 Andrew Davies, *Committee Hansard*, 12 June 2012, p. 43.

9 'Changing the Structure of Defence', *Asia-Pacific Defence Reporter*, 2 September 2011, <http://www.asiapacificdefencereporter.com/articles/177/Changing-the-structure-of-Defence> (accessed 2 April 2012).

10 Richard Brabin-Smith, *Submission 2*, Attachment 1.

11 Defence Efficiency Review, *'Future Directions for the Management of Australia's Defence'*, 10 March 2007, p. 24, <http://www.defence.gov.au/minister/der/report.pdf> (accessed 2 April 2012).

capability systems division that brought together the various ADF groups against which FDA had battled. It was placed under a two-star officer, then quarantined. The highly qualified and experienced analysts—many of them with defence science and advanced policy development backgrounds—dispersed within weeks. They have never returned.¹²

9.13 By 1998, the analytical capability of the FDA had diminished and ultimately disappeared entirely from Defence Headquarters. Dr Davies noted further that:

Similarly, the ability of senior committee secretariats to independently scrutinise costs and to provide frank assessments in agenda papers is now a shadow of its former self.¹³

9.14 A number of analysts including Dr Thomson and Dr Davies as well as Dr Brabin-Smith recommended that the FDA be reinstated.¹⁴ While recognising that the FDA 'caused a lot of rancour' and sometimes got it wrong, Dr Davies asserted that it was important to have a group of 'well-informed devil's advocates'.¹⁵ Dr Brabin-Smith recognised that some of the responsibilities of the former FDA were dispersed between the Strategic Policy Division and CDF and recognised the need:

...to establish a strong central policy area with a remit to improve the application of strategic guidance to capability development and the associated industry support, and to conduct rigorous and independent analysis of capability proposals.¹⁶

9.15 Mr O'Callaghan of the Australian Industry Group held that the advice of the FDA was valued by consecutive chiefs of the Defence Force 'because to some extent it was separate, independent advice they were getting'. While he did not have a view as to whether the FDA should be recreated, Mr O'Callaghan recognised that providing a function that played the devil's advocate role made sense.¹⁷

9.16 Mr Woolner noted that one of the reasons the FDA had 'clout in an adversarial environment' was because it served as the gatekeeper for the money and that merely reinstating a scientific analysis function might not be adequate as:

It was the power of managing the forward budget that gave what FDA decided the wherewithal to be heard and acted on by other people in the

12 Alan Behm, 'Defence lacks solutions', *The Australian*, 11 March 2008, <http://www.theaustralian.com.au/news/opinion/defence-lacks-solutions/story-e6frg7ef-111115762336> (accessed 2 April 2012).

13 Andrew Davies, *Let's test that idea—contestability of advice in the Department of Defence*, Australian Strategic Policy Institute, 22 January 2010, p. 6.

14 Andrew Davies and Mark Thomson, *Submission 8*, p. [2]. See also Richard Brabin-Smith, *Submission 2*, Attachment 1, p. 13.

15 Andrew Davies, *Committee Hansard*, 12 June 2012, p. 43.

16 Richard Brabin-Smith, *Committee Hansard*, 12 June 2012, p. 42.

17 John O'Callaghan, Australian Industry Group, *Committee Hansard*, 12 June 2012, p. 44.

organisation, because it foretold the problems that you would get into with your budget if you did not. So whether you could create it just for the third role and have it working effectively without some sort of organisation or political clout is a question you would have to think about very carefully.¹⁸

9.17 Another witness, however, was highly critical of the FDA. In his assessment the system produced:

...a series of project disasters on one or more of cost, capability or schedule. FFG Upgrade, original watercraft, Seasprite helicopters, Amphibious ships, F111 Armaments upgrade projects, the original bushmasters, Wedgetail, HF Modernisation, Vigilare etc. Some were rectified after much hard work, others were scrapped at large capability and financial cost.¹⁹

9.18 General Hurley, CDF, informed the committee that the FDA operated when the consideration of options for new capabilities was done 'in house'. At that time, there was limited transparency of the process and a 'single option was provided to government for each possible acquisition as a paragraph or two on each project as part of the budget submission—the old omnibus process'. According to the General, the FDA operated in a context in which government did not get the same rigour in terms of advice that it gets today. He noted further that the FDA was in place when the 'Super Seasprite, HF mod, FFG upgrade and purchase of the LPAs—*Kanimbla* and *Manoora* and *Vigilair* were established'.²⁰

9.19 Although Mr King indicated that there could be a role for an organisation such as an FDA, he was of the view that current arrangements for contesting ideas, assumptions and proposals were far more structured.²¹ The committee considers Mr King's viewpoint in the following chapter.

9.20 In his report, Dr Black acknowledged that there was concern that the 'levels of scrutiny and contestability had diminished' since the division's abolition. Highlighting the fact that contestability is a precursor to good decision-making, he recommended that:

Defence formalise and institutionalise a revised approach for Defence decision-making, based upon a more formal and auditable mechanism for decision-making across the full spectrum of Defence activities and increased contestability for key decisions.²²

18 Derek Woolner, *Committee Hansard*, 12 June 2012, pp. 44–45.

19 *Confidential Submission*, p. 48.

20 General David Hurley, CDF, *Committee Hansard*, 13 June 2012, p. 22. See also Defence's *Supplementary Submission, 21B*.

21 *Committee Hansard*, 7 October 2011, p. 21.

22 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 51.

9.21 In this regard, Dr Black suggested that Strategy Executive on behalf of Defence create a set of formal criteria for contestable decision-making that should 'proceed from an analysis of the potential political, strategic, financial and capability risk likely to accrue from a particular decision'.²³

Associate Secretary (Capability)

9.22 In August 2011, in response to Dr Black's recommendation, the Defence Minister announced the establishment of an Associate Secretary (Capability) position and that the Secretary of Defence would initiate filling the position 'immediately'.²⁴

9.23 As noted in chapter 8, the Associate Secretary (Capability) would have been responsible for strengthening the linkages between strategy and capability. The creation of the position was intended to ensure the 'more effective contestability and integration of advice at the early stages of the process, as well as for ensuring the performance and accountability of the overall capability development, acquisition and sustainment chain'.²⁵

9.24 While the proposal to appoint an Associate Secretary (Capability) was still alive, a number of commentators expressed doubts that a single position could introduce contestability and at the same time enable Defence to operate as a single, integrated enterprise. One of the central concerns was that such an appointment would only add to the complexity and bureaucracy of the capability decision-making process rather than provide for a rigorous, transparent and contested process. Indeed, the announcement that the position would not be established was supported by analysts such as Dr Andrew Davies and the Australian Defence Association whose executive director, Mr Neil James, said that the creation of another level of bureaucracy defied commonsense and the diarchic principle that underpins the running of Defence.²⁶

9.25 The committee's concern, however, is that the status quo will now prevail without addressing the issues raised by the Black Review and its recommendations regarding mechanisms to strengthen the decision-making process by way of contestability and embedding a culture of accountability.

23 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, p. 51.

24 Stephen Smith MP, Minister for Defence, 'Improving personal and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 1 February 2012).

25 Stephen Smith MP, Minister for Defence, 'Improving personnel and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 1 February 2012).

26 David Ellery, 'Position retreat a win for Defence leadership group', *Canberra Times*, 11 May 2012, <http://www.canberratimes.com.au/national/position-retreat-a-win-for-defence-leadership-group-20120510-1yfsk.html> (accessed 15 May 2012).

9.26 In its supplementary submission, Defence highlighted the important role of the CIR Division in providing contestability in the capability development process including during the early phases which concludes when a project enters the DCP. The committee discusses the Division in the following chapter.

Committee view

9.27 The committee acknowledges the views of several submitters supporting the reinstatement of the FDA, and singing its praises. The committee also notes, however, the record of failures during that period and therefore questions its efficacy in current times. The committee also accepts CDF's assessment of his preference for the current model, though the committee's qualifications about its effectiveness remain, as expressed throughout this report.

Chapter 10

Contest of ideas and independent advice

10.1 The various individuals and groups involved in the capability development process provide numerous opportunities for project assumptions and proposals to be reviewed and tested. Firstly, the authors of the White Paper draw on a range of skills and experience to identify the capabilities needed to protect the national interest. The group responsible for initiating capability proposals, generally the capability managers, are able to consider risk as part of their proposal at conception stage and, as the end-users, throughout the capability development cycle. There are many others in ideal positions to question and test the analysis and assumptions underpinning proposals. They include the CDG, the Stakeholders Group, the DSTO, DMO, the Capability Investment and Resources Division, the Central Agencies, the Options Review Committee (now the Project Initiation and Review Board), the Capability Gate Reviews, the Defence Capability Committee, the Defence Capability and Investment Committee, the Service Chiefs and Group Heads and finally the CDF and Secretary, who clear submissions in preparation for the government's consideration. Defence industry also has a critically important role in capability development and is discussed in chapters 13 and 14.

10.2 Only recently, however, the minister expressed concern about what he believed was a 'lack of contestability of view'.¹ In this chapter, the committee continues its consideration of how Defence manages contestability so that any submission to government on capability development reflects a robust and thorough consideration of recommended proposals.

Defence's quality assurance framework

10.3 In 2008, Mortimer was of the view that DMO needed 'an internal project review mechanism to identify and fix problems earlier than presently occurs'.² In response, Defence noted that DMO had a number of mechanisms in place designed to provide an independent review function and to assist project teams where necessary. For example, the organisation's Assurance Boards formed a key element of the DMO's corporate governance framework. They were intended to provide independent assurance and advice on the adequacy of governance frameworks for each equipment acquisition and through-life support activity; and on issues and risks involving schedule, cost, capability and sustainability. According to Defence, the composition of the board 'ensured that they were in a position to cast a 'fresh set of eyes' across a

1 Stephen Smith MP, Minister for Defence, 'Minister for Defence—Press Conference—Black Review', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 4 April 2012).

2 Defence Materiel Organisation, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, Commonwealth of Australia, 2008, p. 35.

project or sustainment activity'. DMO staff were encouraged to use the Assurance Boards as 'sounding boards' and to seek guidance and feedback from them on any aspect of concern involving a project or sustainment activity.

10.4 The Assurance Boards have since undergone change. In evidence, Defence referred to its new rigorous series of internal quality processes and committees, working groups, stakeholder groups and gate reviews. They examined each project's capability, cost, schedule and risks in detail to ensure that each project was positioned to deliver as required. Defence explained its procurement quality assurance processes:

To confirm options for Government consideration at First or Second pass, Defence projects must pass through a number of internal quality assurance processes. These processes, which include internal committees, assess and test advice from Capability Managers and Defence Groups. The quality assurance processes ensure that a robust and compelling case can be developed for capability proposals before they are put to Government for consideration at First and Second pass. In doing so, Defence stakeholder views are drawn together to ensure critical interdependencies are acknowledged and addressed.³

10.5 In its preliminary report, the committee described the process whereby stakeholders and committees review documents including those dealing with risk. The committee also noted that the Secretary and CDF approve the submission that goes to the minister or Cabinet for approval to move the project through to the next phase. An important aspect of this review process involves gate reviews, now under the purview of the Independent Project Performance Office (IPPO).

Independent Project Performance Office

10.6 In 2008, Mortimer recommended the establishment of an Independent Project Performance Office (IPPO). Defence agreed to the recommendation and established such an office, which commenced operation on 1 July 2011. Located within the DMO, its functions are to:

- implement a 'lessons learned' process as recommended by the Mortimer Review to improve the way projects are delivered by learning from past mistakes and successes; and

3 *Submission 21*, p. 17. Air Marshal Harvey informed the committee that Defence had established 'a comprehensive series of internal quality assurance processes through the committees, working groups, stakeholder groups and gate reviews'. They examine each project's capability, cost, schedule and risk. *Committee Hansard*, 7 October 2011, p. 2.

- assist project teams to develop more robust cost and schedule information to improve the accuracy of this information when it is provided to the government.⁴

10.7 The IPPO is also responsible for the conduct of the annual gate reviews of all major defence capital acquisition projects. In preparation for a gate review board meeting, the office conducts an evaluation of the project to ensure that issues have been identified and would be brought to the board's attention for investigation.⁵ The committee is not certain that the Independent Project Performance Office should be located in the DMO.

Gate reviews

10.8 The use of gate reviews is not new and the benefits to project delivery are well recognised.⁶ Gateway reviews are an important project assurance tool designed to improve the on-time and on-budget delivery of major projects. The Department of Finance and Administration's, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, suggests that gate reviews support 'project teams by providing them with an independent information resource that can add value to their project (for example, by the early identification of issues that may need to be addressed)'. They do so by 'providing an arm's length assessment of a project at critical stages of a project's life'.⁷ The guide stipulates that members of a review team should not have worked on the project under review, except in the capacity as a gate reviewer at previous gates.⁸ As experienced peer reviewers not associated with the project, they are intended to assess the project against its specified objectives at a particular stage in the project's lifecycle. They provide early

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- 4 Stephen Smith MP, Minister for Defence, 'Minister for Defence Stephen Smith and Minister for Defence Materiel Jason Clare—Independent Project Performance Office to oversee major Defence projects established', Media Release, 29 June 2011, <http://www.minister.defence.gov.au/2011/06/29/minister-for-defence-stephen-smith-and-minister-for-defence-materiel-jason-clare-independent-project-performance-office-to-oversee-major-defence-projects-established-2/> (accessed 3 April 2012). The boards also implement the new Early Indicator and Warning system and implement the reforms to the Project of Concern process and oversee the remediation of all Projects of Concern.
- 5 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, Part 2, DMO Major Projects Report, paragraph 1.56.
- 6 See Department of Finance and Administration, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, Financial Management Guidance FMG 20, August 2006, p. 4.
- 7 Department of Finance and Administration, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, Financial Management Guidance FMG 20, August 2006, pp. 4 and 13.
- 8 Department of Finance and Administration, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, Financial Management Guidance FMG 20, August 2006, p. 5.

identification of areas that may require corrective action and validation that a project is ready to progress successfully to the next stage.⁹

10.9 The guide notes that a gate review may take place at the needs phase of a project before its start up stage, which takes the form of a broad strategic review to inform decision-making to confirm the alignment with the intended outcomes.

Gate reviews in Defence's procurement processes

10.10 Gate reviews now form part of Defence's risk control framework designed to enable the early identification of potential problems. In 2008, Defence started to implement gate reviews to supplement the 'red team' and 'deep dive' reviews that had been operating previously.¹⁰ The key function of the gate reviews is to test, review and clear capability proposals and supporting documentation.¹¹ They are intended to ensure that the advice provided to Defence and government on the health and outlook of major projects is of high quality and reliable. Gate reviews may also be used as a diagnostic tool to assess potential projects of concern and projects that have triggered early warning signals.¹²

10.11 One witness noted that during 2011 much was made of 'new' management controls such as gate reviews and projects of concern. In his view these measures were 'all good' but not new: some were repackaging and improvement of previous work that did the same thing. He explained:

Gate Reviews are a new name for what had been called 'Deep-Dives'...The process is used at major firms to get to the truth of why a program is failing in some way.¹³

10.12 Mr King informed the committee that a team, within the IPPO, which is 'independent of the line management', would provide a brief to the gate review board. He cited contributions from teams from the land system division, the maritime system division and the aerospace division that collect 'a lot of background information'. They undertake field work but might talk to industry if it is involved in a problem.¹⁴

10.13 In the 2009-10 Major Projects Review, DMO indicated that:

9 Department of Finance and Administration, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, Financial Management Guidance FMG 20, August 2006, p. 12.

10 Defence Materiel Organisation, *Going to the Next Level, the report of the Defence Procurement and Sustainment Review*, Commonwealth of Australia, 2008, p. 35.

11 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.4.2.

12 ANAO Report No 20. 2011–12, *2010–11 Major Projects Report*, paragraph 44, p. 26 and Part 2, paragraph 1.54, p. 126.

13 *Confidential Submission*.

14 *Committee Hansard*, 7 October 2011, p. 29.

The GRAB [Gate Review Assurance Board] process is a proactive activity that has led to early identification, intervention and resolution of risks and issues across numerous projects in DMO. Given the success of this methodology, the GRAB process will be extended to all major projects.¹⁵

10.14 A year later, the Major Projects Review (MPR) recorded that the gate reviews were mandatory for major projects at six specified milestones—DCP entry; Options Review Committee consideration; first pass approval; second pass approval, contract solicitation and contract negotiation.¹⁶ The number of gate reviews undertaken currently indicates that these mandated reviews are still a work in progress.

10.15 Previously known as Capability Development Boards, the gate review boards normally comprise five people with a range of skills and experience to make sure that resourcing, budgeting and operational capability matters are covered.¹⁷ According to the ANAO, the chair, who is a general manager not in the line control of that project, may be assisted by the general manager who is in the line control. Board membership is tailored according to the specific issues confronting a project (business case, project management, commercial, engineering, stakeholder etc). Members include senior DMO 'line management, relevant people with key skill sets from other parts of the DMO, and at least two external independent members with extensive Defence or commercial experience'.¹⁸ The capability manager or representative is invited to each of the gate reviews.¹⁹ The inclusion of two external members was intended to strengthen the board. DMO explained:

Board meetings provide a forum for robust, pluralistic discussion that injects a strategic perspective, filters optimism, analyses issues, recommends actions and assists the project to resolve those issues.²⁰

10.16 In October 2011, Mr King informed the committee that there were somewhere between 18 and 24 independent members. He had been encouraged by 'the almost volunteer status' of the people coming forward who had been involved in big difficult projects.²¹

10.17 The gate review enables DMO 'senior executives to consider the readiness of a project to proceed to the next stage before they commit any further resources or

15 ANAO Report No. 17 2010–11, *2009–10 Major Projects Report*, paragraph 1.54, p. 93.

16 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 3.7.

17 *Committee Hansard*, 7 October 2011, p. 30.

18 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 3.5, p. 82. Mr King described the two independent members as 'people who have had a lot of industry experience or military experience, or whatever'. *Committee Hansard*, 7 October 2011, p. 12.

19 Mr Warren King, *Committee Hansard*, 7 October 2011, p. 30.

20 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 1.55, p. 126.

21 *Committee Hansard* 7 October 2011, p. 29.

enter into any new formal undertakings'.²² According to DMO, if the board is not convinced of a project's maturity or readiness to progress to the next stage of its lifecycle, the project must address those risks and issues before proceeding and a further board review may be required before progression to the next stage.²³ Air Marshal Harvey informed the committee that Defence call it a 'gate review' because unless all required documents are in place the project does not progress to the next stage.²⁴

10.18 An independent member of the gate reviews informed the committee that the boards report to the CEO DMO, but that the independent members have access to the CEO. He gave the example of where they may disagree with the chair of the board, in which case 'we have a right to put down our separate view'. To his mind, being able to do so underpinned their independence.²⁵

10.19 In May 2011, the minister directed that the gate review program be expanded to include all major projects at least annually.²⁶ The 2009–10 Major Projects Review recorded that 20 projects had been subjected to a gate review. A year later, approximately 50 projects had undergone gate reviews. According to Mr King:

Given the sheer volume of work involved in review of where the project is and where its risk register is and what risks it is mitigating, it would be impossible to do it more often than once a year.²⁷

10.20 He was satisfied with how the gate review program was progressing and gave the example of the reviews that happen prior to contract negotiation where 'we actually go through the negotiation strategy and the trade-offs and so on'.²⁸ Reviews, which often take three to four days, may also take place at other times, depending on the results of the project risk assessment.²⁹ He did not want the quality of the gate reviews to deteriorate, explaining:

What is critical is that they get to the heart of issues, whether they are technical, commercial or resource. We have to be able to see what the real

22 *Submission 22*, pp. 10–11.

23 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, Part 2, DMO Major Projects Report, Part 2, paragraph 1.57, p. 126.

24 *Committee Hansard*, 7 October 2011, p. 18.

25 *Committee Hansard*, 13 June 2012, p. 14.

26 Stephen Smith MP, Minister for Defence, 'Strategic Reform Program', 6 May 2011, <http://www.minister.defence.gov.au/2011/05/06/strategic-reform-program/> (accessed 3 April 2012) and ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, Part 2, DMO Major Projects Report, p. 101.

27 *Committee Hansard*, 7 October 2011, p. 26.

28 *Committee Hansard*, 7 October 2011, p. 12.

29 ANAO Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 3.7, p. 82 and Mr Warren King, *Committee Hansard*, 7 October 2011, p. 29.

issues are and address them. We must not allow it to fall into just a process.³⁰

10.21 The ANAO noted that it was expected to take a number of years for the results of gate reviews to flow through.

10.22 Dr Thomson commented on the gate reviews, noting that having people from the previous generation of project managers on the boards would undoubtedly add value to the process.³¹ The committee was also told during its site visit to South Australia and Western Australia that gate reviews were a positive activity: that they allowed for contestability and provided an opportunity to bring a wider corporate view.

10.23 On 13 June 2012, six independent members of the gate reviews appeared before the committee and were unanimous in their views that the boards were 'not a tick and flick' exercise. Based on their experience, the reviews do a lot more than form part of Defence's assurance framework. They also help to improve performance through the guidance and advice provided informally and formally and through 'the dissemination of better practice with the line management as well as within projects'.³² Mr Irving also referred to their mentoring role whereby project team members gain not only the skills but experience to help them better understand the business they are in.³³ The independent members warned, however, against unrealistic expectations—'gate reviews can help improve the prospects of success and help in formulating a workable project, but they cannot prevent things going wrong with projects'.³⁴

10.24 One witness closely involved in defence procurement argued that in order to ensure gate reviews are effective tools, three basic rules should be observed:

- Engage very experienced specialists who are independent of the project—those who have been there made mistakes and learned from their experience. These external members are rarely under the age of fifty and not part of the normal corporate population of company directors and the like, but 'hardened project people who have taken their knocks and successes on complex technological projects'.
- End-to-end thoroughness so that no rock is left unturned whether that be technological, contractual, people, supply chain, later support, documentation, intellectual property, occupational health and safety, budgets, approvals, schedules, etc.

30 *Committee Hansard*, 7 October 2011, p. 29.

31 *Committee Hansard*, 12 August 2011, p. 14.

32 *Committee Hansard*, 13 June 2012, p. 2.

33 *Committee Hansard*, 13 June 2012, p. 10.

34 *Committee Hansard*, 13 June 2012, p. 3.

- Confer 'amnesty', on program managers, purchasers, engineers, or logisticians so they can speak their mind without adverse personal input. Such a measure would go a long way toward bringing 'sunlight to problems, based on the maxim that an underlying problem can only be fixed if it is first identified, and that unidentified problems only get worse with age'.³⁵

10.25 According to the witness, the limitation on gate reviews as a system across all defence capital projects is 'finding and engaging enough expert greybeards'—'hardened project people'—who have developed from 'a culture of accumulating domain knowledge and ongoing practice of tradecraft'.³⁶ While he supported the new arrangements relating to gate reviews, he did not agree with insisting that they 'be performed regularly on every project (rather than just troublesome ones)'. The witness also cautioned against attempting to do too many new gate reviews which would likely 'take things backwards because there are insufficient deeply experienced people in Australia with the necessary time (and security clearances) to review 200 projects each year.' He took the view, that regular mandated gate reviews would go too far, add to bureaucracy and divert scarce resources from better use. It would increase DMO staff numbers to more than needed and without necessarily raising quality.³⁷ He explained that it would:

...be better to use those scarce resources on the in-difficulty projects only, after an initial 'cut' or 'scan' of all projects likely to be facing difficulty. If resources are smeared too broadly, it will affect depth and quality which would make Gate Reviews of every project a 'make work, tick-the-box' exercise under the control of an army of generalists.³⁸

10.26 The Australian Association for Maritime Affairs suggested having a 'Team B' approach to 'reduce the risk of project planning going off on politicians', senior officers' or even project team members individual "frolics". By a 'Team B', it meant having 'a small team of suitably qualified personnel administratively outside the main project structure and tasked with shadowing and checking the assumptions and decisions of the primary project team at key stages in the project's development'.³⁹ The committee believes that gate reviews, if properly constituted and resourced, would be similar in function to a 'Team B'.

10.27 It should be noted that the ANAO recently published an audit report on the gate reviews which found overall that they were making a positive contribution to improving Defence's performance in acquiring major defence capital equipment. The ANAO examined in detail three gate reviews, which revealed some weaknesses in this quality assurance framework.

35 *Confidential Submission.*

36 *Confidential Submission.*

37 *Confidential Submission.*

38 *Confidential Submission.*

39 *Submission 17*, p. 3.

10.28 For example, the August 2011 gate review of the M113 Upgrade exposed limitations to this quality assurance mechanism. The ANAO noted that the project office sought to narrow the scope of the review. It explained:

IPPO informed the project office that [that] was not appropriate but, in the event, the available documentation suggests that the Gate Review focused on the schedule-related aspects of a Contract Change Proposal.⁴⁰

10.29 This restriction on the focus of the gate review through documents prepared for it raises critical questions about the degree of influence that the project office is able to exert over the review board and the potential to weaken its independence.

10.30 Also, the committee notes that the Department of Finance and Administration's *Guidance on the Gateway Review Process* stipulates that members of a review team should not have worked on the project under review, except in the capacity as a gate reviewer at previous gates.⁴¹ In this context, the ANAO found that the M113 gate review was chaired by the Division Head responsible for the project, and comprised one external member and three other DMO officers internal to the division in which the project resided, two of whom delegated their attendance to more junior staff.⁴² Unfortunately this departure from accepted procedure was not an isolated incident. The ANAO referred to a significant number of gate reviews being chaired by individuals with line management responsibility for the project under review.⁴³

10.31 Indeed, a very worrying trend noted in the ANAO's audit of gate review boards was the growing tendency for gate reviews to be chaired by a manager with a strong connection to the project. According to the ANAO this trend had increased in recent times:

During the first year DMO conducted Gate Reviews (July 2009–June 2010), 33 per cent of Gate Reviews of ACAT I and II projects were chaired by a manager with some responsibility or accountability for the project under review. During the second year (July 2010–June 2011) this increased to 42 per cent. During the first six months of IPPO's management of all Gate Reviews this increased further to 50 per cent.⁴⁴

40 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 3.78.

41 Department of Finance and Administration, *Guidance on the Gateway Review Process—A Project Assurance Methodology for the Australian Government*, Financial Management Guidance FMG 20, August 2006, p. 5.

42 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 3.78.

43 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 3.86.

44 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 3.68.

10.32 This practice of the chair of a gate review having some responsibility or accountability for a project contravenes the very principle underpinning such reviews. It is also in breach of DMO policy. The ANAO's findings underscore the importance of Defence ensuring that policies and guidance provided in manuals are implemented properly. In its audit report, the ANAO noted that the latest policy amendment, approved on 3 May 2012, strengthened the requirement for the independence of the chair.⁴⁵ In light of the committee's findings on non-compliance, this new policy amendment is clearly not enough (see chapter 6).

10.33 Dr Neumann cited the ASLAV enhancement project as an example of a gate review that missed a critical aspect of the project. He informed the committee that the technical risk advice provided to the board did not refer to the solution they were reviewing. The engineering and scientific advice before them said the solution was not a high-risk when in fact the one they were reviewing was risky.⁴⁶ He explained that the ASLAV project evolved from quite a simple pragmatic solution 'to a further stretch, and neither management nor documentation actually caught up to get the cross-correlation'.⁴⁷ The ANAO found that the 2010 gate review of the ASLAV placed a heavy focus on one particular aspect—schedule—which may have inhibited attention being given to other potential risks—technical risk.⁴⁸

10.34 It is notable that the gate reviews for both the M113 and ASLAV focused on schedule and not technical risk. The two case studies not only highlight the limitations of gate reviews but underline the critical importance of having technical and subject matter experts involved and, importantly, listened to throughout an acquisition project. With regard to gate reviews, the ANAO also drew attention to:

...the absence of a mechanism to follow up action items, the risk of developing an over-optimistic perception that the Gate Review program will identify and address all problems, and the resource impact on project staff and senior management.⁴⁹

10.35 The committee has referred to comments about the resource intensive aspect of gate reviews, especially securing the services of independent members with the necessary project background and experience. It has also noted the danger of relying too heavily on gate reviews to fix problems and of devaluing the whole concept of gate reviews. With regard to ensuring that the recommendations of the review boards are implemented, the committee endorses the ANAO's recommendation that 'defence

45 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraphs 3.85–3.86.

46 *Committee Hansard*, 13 June 2012, p. 15.

47 *Committee Hansard*, 13 June 2012, p. 19.

48 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraphs 3.38–3.81.

49 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 31.

ensures that a control mechanism is deployed to monitor the status and completion of actions recommended by Gate Review Assurance Boards and agreed by the relevant executive'.⁵⁰

Committee view

10.36 In the committee's view, gate review boards have the potential to provide the robust review and contestability necessary to reveal deficiencies in the procurement process and to identify potential problems. To be effective, the boards must, however, have the time, resources, authority and skills to be able to reassess and re-evaluate the soundness of the analysis and the assumptions underpinning the project and its progress to date.

10.37 The committee supports the addition of two external independent members to each gate review board but would stress that they must have the authority to ensure that their findings and recommendations carry weight. It also recognises, as noted by a witness, that a major difficulty would be securing the services of hardened project people to be part of a gate review team. Even so, the committee believes that the benefits would more than compensate for the effort required to locate and entice these experienced experts to join the boards.

10.38 Conscious of overdoing gate reviews to the extent that they lose their potency, the committee urges Defence to ensure that gate reviews become and remain powerful quality assurance measures. Compliance with policy such as maintaining the independence of the chair is also critical to the credibility and ultimate success of the reviews. The committee is also aware of unrealistic expectations and of the potential for Defence to rely too heavily on gate reviews to identify problems and their solutions. In this regard the committee stresses that gate reviews are intended to be part of a quality assurance framework and should not be relied on to compensate for shortcomings in project management. Defence must ensure that project management teams take full responsibility for the performance of their project.

10.39 In this report, the committee has referred to numerous instances of non-compliance with policy or guidelines. The gate review examples cited by the ANAO throw into sharp relief, how genuine, sound initiatives can be rendered useless by a management structure that cannot or will not exert authority. Surely, this latest clear disregard of policy whereby the independence of gate review chairs was compromised justifies the committee's scepticism about the effectiveness of other recent initiatives such as project charters, MAAs, and the Project Initiation and Review Board.

10.40 The committee is aware, however, of the great value of gate reviews when used properly and, although disappointed in the shortcomings exposed in the ANAO report, believes that located within the appropriate management structure they have potential to become an effective quality assurance mechanism.

50 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 4.21.

Independent advice and contestability

10.41 On 7 October 2011, Mr King stated that the acquisition process was now 'far more structured'. He explained that a capability manager's focus (or the organisation's) was on capability, schedule and costs in that order. In his view, capability managers were 'not always as well informed as they might be about the various risks of the projects' they want undertaken. According to Mr King, these potential blind spots are offset by the advice of the CEO DMO on cost, schedule and risks associated with that project and the contribution of the DSTO on technical risk.⁵¹ Mr King stated that the DMO in a programmatic way, and the DSTO in a technical sense, 'play the role of devil's advocate'.⁵² Similarly, the scrutiny by the Capability Investment and Resources Division group is supposed to provide contestability by weighing up the risks to determine whether the project is the right one on which to spend that amount of money.⁵³ Mr King concluded:

In many ways, my experience is that the level of contestability, debate, analysis that goes on in project progression at the moment is greater than any time I know.⁵⁴

10.42 In the following section, the committee considers DMO, DSTO and Capability Investment and Resources Division's provision of independent advice and the contribution they make to minimising the risk of 'things going wrong'.

Defence Material Organisation

10.43 DMO is responsible and accountable for developing military equipment cost and schedule estimates (including the associated risk assessments), and for developing and implementing the Acquisition and Support Implementation Strategy. It is also responsible for:

- analysing industry's ability to deliver the required capability, and
- directly supporting CDG in developing the required project documentation (as appropriate).⁵⁵

10.44 According to Defence's procurement handbook, the CEO DMO provides independent advice to government on the cost, schedule, risk and commercial aspects of Major System acquisitions.⁵⁶ Mr King explained:

51 *Committee Hansard*, 7 October 2011, p. 21.

52 *Committee Hansard*, 7 October 2011, p. 23.

53 *Committee Hansard*, 7 October 2011, p. 21.

54 *Committee Hansard*, 7 October 2011, p. 21.

55 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.13.

Throughout the CDG management phase...DMO is inputting on cost, schedule, not technical risk but capability risk and programmatic risk. When we go to second pass, for example, I am still required by secretary, CDF and government to provide an independent assurance on cost, schedule and risk associated with the program.⁵⁷

10.45 It should be noted that the White Paper suggested that the DMO 'must strengthen its capacity to provide independent advice on the cost, risk, schedule and acquisition strategies for major capital equipment'.⁵⁸ This observation is particularly significant as Mortimer made a similar recommendation. In its response to Mortimer, Defence agreed that CEO DMO must be in a position to provide advice to government on the cost, schedule, risk and commercial aspects of all major capital equipment acquisitions. It stated, however, that 'it would not be appropriate for DMO to make coordination comments on Defence cabinet submissions because, for procurement matters, DMO is intimately involved in preparing these submissions'.⁵⁹

10.46 Defence's attitude contradicts the Mortimer principle and effectively negates the element of contestability which depends on independence for its effectiveness. The committee is uncertain about the meaning of DMO's independence in this context and how it can register any concerns it may have about an acquisition project.

Defence Science and Technology Organisation

10.47 One of DSTO's major responsibilities is to provide advice throughout the planning and development phases of defence acquisition programs including advice on all aspects of technical risk and risk mitigation strategies.⁶⁰ DSTO's Risk Assessment Handbook makes clear that the Chief Defence Scientist is responsible for providing independent advice to government on technical risk for all acquisition decisions.⁶¹ As discussed in chapter 12, the Chief Defence Scientist is required to

56 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.13 and *Defence Submission 21*, which stated that the CEO DMO 'provides independent advice to the Defence Ministers and the Cabinet on the cost, schedule and other commercial aspects of military equipment procurements in each capability development Cabinet submission', p. 14.

57 *Committee Hansard*, 7 October 2011, pp. 18–19.

58 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper, paragraph 16.6.

59 The Mortimer Review recommended (recommendation 2.10) that the CEO DMO should provide advice to government on the cost, schedule, risk and commercial aspects of all major equipment acquisitions, and be a permanently invited adviser to government committees considering defence procurement. Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, p. 25.

60 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence White Paper, paragraph 17.9.

61 DSTO, *Technical Risk Assessment Handbook*, Commonwealth of Australia, 2006, paragraph 1.1

provide 'an independent assessment of the level of technical risk presented by a project at each Government consideration'. This assessment occurs primarily at first and second pass approval, but also when a submission is made to government seeking an amended project approval, such as a Real Cost Increase for a change in scope.⁶²

10.48 Air Marshal Harvey stressed the importance of the independence of the Chief Defence Scientist's assessment. He informed the committee that DSTO's technical risk analysis and technical risk certification signed off by the Chief Defence Scientist is the independent advice to government.

10.49 In this regard, the committee recalls Pappas' observation about DSTO's advice not receiving the respect it deserves (see paragraphs 8.49–8.50). The committee also notes that many of the schedule delays in projects have not been due to underlying technology problems but integration and certification issues. In the light of DSTO evidence that its personnel have limited experience in these areas, the committee is concerned that CCDG does not appear to recognise this flaw in the process it has approved.

Capability Investment and Resources Division

10.50 The Capability Development Handbook states clearly that the Capability Investment and Resources Division (CIR Division) provides 'independent analysis and review of capability proposals and related costs, including the overall balance of investment in current and future capability, major investment proposals and priorities'. For example, the Cost Analysis Branch looks at the project's costings. Headed by the First Assistant Secretary Capability Investment and Resources, the division develops the draft ministerial and cabinet submission and presents it for DCC consideration.⁶³

10.51 On a number of occasions, Air Marshal Harvey referred to the independence of the CIR Division. He informed the committee that the division provides independent scrutiny—'a complete, independent look at what is required'.⁶⁴ It considers submissions from the perspective of what government requires in terms of level of evidence to progress the submission and considers whether there are any gaps in the argument. According to Air Marshal Harvey, those in the division:

62 DSTO, *Technical Risk Assessment Handbook*, Commonwealth of Australia, 2006, paragraph 2.6.

63 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraphs 1.5.8 and 3.6.6.

64 *Committee Hansard*, 7 October 2011, p. 21. The handbook states that the Division is responsible for ensuring that the DCP is appropriately programmed, for independently reviewing capital and operating costs for all projects going to the Defence committees, and for the management of Net Personnel and Operating Costs (NPOC) estimates for all DCP projects and those approved projects (i.e. post-Second Pass) for which NPOC has not been triggered. Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 1.5.8.

...are independent of the sponsor and of the capability manager, but their view is to make sure it is a sound case put forward to government and we have addressed all the issues that are required.⁶⁵

10.52 General Hurley reinforced this view. He stated that the CIR Division 'subjects capability proposals to rigorous independent scrutiny, covering capability, scope, schedule, risk and cost.'⁶⁶ Furthermore, its advice 'comes as a separate submission' to the DCIC:

So you have the CDG's submission and then we have a separate view that asks the hard questions about issues that are in that document.⁶⁷

10.53 It should be noted that Defence's supplementary submission stated that the Division 'does not contest for its own sake'. It is responsible for drafting initial, first and second pass cabinet submissions 'to support Government's consideration of a project'.⁶⁸

10.54 In the previous chapter, the committee referred to the FDA as a mechanism for injecting contestability in the capability development process and providing independent advice on proposed major defence acquisitions. According to Air Marshal Harvey, who previously worked in the FDA, the CIR Division, which resides in the CDG, performs broadly the same tasks as the FDA. He noted in particular that the division provides that independent scrutiny. He recognised that contestability 'is good' and said:

We try to do that in a non-confrontational way.⁶⁹

10.55 Air Marshal Harvey explained further that the CIR Division was 'actually larger now than when FDA finished', with about 73 people and has 'a very strong independent voice'.⁷⁰ General Hurley also noted that the division is 'considerably larger, more comprehensive and more penetrating in its advice' and has a cost-analysis and assessment branch.⁷¹ He emphasised that the CIR Division reports directly to the

65 *Committee Hansard*, 7 October 2011, p. 21. The Division comprises two branches: Investment Analysis (IA) Branch, which provides advice on capability proposals, and assigns capability analysts to each project; and the Cost Analysis Branch which provides cost analysis on capability proposals to support the development of MINSUBs and CABSUBs. According to the handbook, both branches provide their advice independent of CS Div.

66 *Committee Hansard*, 13 June 2012, p. 23.

67 *Committee Hansard*, 13 June 2012, p. 35.

68 *Supplementary Submission 21 on Capability Investment and Resources Division and the Project Initiation and Review Board*, p. [3].

69 *Committee Hansard*, 7 October 2011, p. 21.

70 *Committee Hansard*, 7 October 2011, p. 22.

71 *Committee Hansard*, 13 June 2012, p. 23.

positions of CDF and Secretary.⁷² Likewise, the Acting Secretary of Defence, Mr Simon Lewis informed the committee that:

CIR Division is larger than the old FDA with a higher work rate and output. It analyses the projects from their inception and provides objective critique at each capability development milestone. This advice is provided independently of the Chief of the Capability Development Group. What is clear is that the work of CIR in producing agendum for these milestones has repeatedly tested assumptions and materially improved the quality of submissions going forward for Government consideration.⁷³

10.56 Mr Lewis held that the CIR Division also performs a role in 'stewarding the proposal through Government consideration' which ensures that the 'contestability is grounded in the realities of obtaining central agency and Government approval'. He asserted that the level of central agency scrutiny of projects is 'far greater' than during the FDA days.⁷⁴

10.57 Dr Brabin-Smith acknowledged that the CIR Division did some of the former FDA's work but that it did not have the broad remit of the old FDA. A number of witnesses were especially concerned that the old FDA's role of bringing rigour, which comes with scientific method, to the evaluation of Defence proposals was missing.⁷⁵

10.58 It should also be noted that on 9 August 2011, the minister announced that the CIR Division's capacity to provide internal contestability would be strengthened by separating it from the CDG and having it report directly to the newly created position of Associate Secretary (Capability).⁷⁶ According to Air Marshal Harvey, the CIR Division would then sit parallel to CDG but underneath the Associate Secretary (Capability). He explained that the division's work 'would be in the same mode but to the associate secretary' rather than direct to the CCDG.⁷⁷

72 General Hurley, CDF, *Committee Hansard*, 13 June 2012, p. 35.

73 Acting Secretary of Defence, Mr Simon Lewis, Cover letter to DMO *Submission 41*, 7 June 2012.

74 Acting Secretary of Defence, Mr Simon Lewis, Cover letter to DMO *Submission 41*, 7 June 2012.

75 See for example, Dr Brabin-Smith and Dr Davies, *Committee Hansard*, 13 June 2012, pp. 43–44.

76 Stephen Smith MP, Minister for Defence, 'Improving personal and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 3 April 2012) and Stephen Smith MP, Minister for Defence, 'Minister for Defence—Press Conference—Black Review', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 April 2012). See also Air Marshal Harvey, who informed the committee that the Division would be broken away from the CDG. *Committee Hansard*, 7 October 2011, p. 22.

77 *Committee Hansard*, 7 October 2011, pp. 22–23.

10.59 Clearly, the minister saw the need to strengthen internal contestability by splitting the division from the CCDG and having it report to the Associate Secretary (Capability). As noted earlier, however, this appointment is no longer proceeding.⁷⁸ In this regard, it should be noted that Mr Simon Lewis informed the committee that refinements were underway to strengthen the CIR Division through processes including the Capability Development Improvement Program to further professionalise division staff.⁷⁹

Central agencies

10.60 The Department of the Prime Minister and Cabinet, the Department of Finance and Deregulation and Treasury are known collectively as the central agencies. They have an important part in the consideration and approval of the capability proposal and provide an additional level of scrutiny and advice on capability development proposals from a whole-of-government perspective.

10.61 For example, the Department of Finance and Deregulation must agree on the detailed acquisition and operating costs and financial risk assessment for each first and second pass submission.⁸⁰ The department noted, however, that, to form an opinion on the veracity of cost and risk estimates, its staff rely heavily on the technical risk assessment provided by DSTO; the evidence made available to support the Defence cost model; and other Defence capability development documentation.

10.62 In August 2011, the minister announced that Defence would work with the three central agencies:

...to ensure they play a greater role at earlier stages of significant projects and that their specialist advice on cost, risk and alignment with Government policy is an integral component of the recommendations made to Government.⁸¹

10.63 Air Marshal Harvey also referred to the role of the central agencies which, in his view, compared with the days of FDA, 'have a much stronger role as well in terms of contestability, in terms of looking at our proposals as they go through'.⁸² According

78 Prime Minister, Minister for Defence, Minister for Defence Materiel—Joint Media Release—Next stage of future submarine project announced, 3 May 2012, <http://www.minister.defence.gov.au/2012/05/03/prime-minister-minister-for-defence-minister-for-defence-materiel-joint-media-release-next-stage-of-future-submarine-project-announced/> (accessed 15 May 2012).

79 Acting Secretary of Defence, Mr Simon Lewis, Cover letter to DMO *Submission 41*, 7 June 2012.

80 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.7.6.

81 Stephen Smith MP, Minister for Defence, 'Improving personal and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 3 April 2012).

82 *Committee Hansard*, 7 October 2011, p. 22.

to Air Marshal Harvey, the organisations were brought together 'to achieve contestability' but also to avoid the barriers between them as proposals are developed.⁸³ The current CCDG told the committee that CDG 'probably need to engage central agencies better than we have up to this point';—in terms of when they scrutinise our cost models and so on—'that we can actually understand the risk and have factored in the risks'.⁸⁴

10.64 Dr Brabin-Smith argued that objective analysis and contestability are central to the processes of public sector decision-making and an integral part of the machinery of government. He noted that the Department of Finance and Deregulation provides such impartial analysis 'when it runs its not-always-friendly ruler over new policy proposals from other departments'. In his opinion, however, Finance's capacity to examine defence spending proposals was limited. He noted that 'the sheer volume of analysis would require a significant and specialised workforce', and besides 'the more important arguments for defence spending are strategic in nature, and cannot readily be reduced to an economic (or surrogate economic) basis or comparison'.⁸⁵ Accepting these limitations, the committee supports the independent scrutiny that Department of Finance and Deregulation provides.

Effectiveness of internal contestability

10.65 The committee notes the use of the word 'independent advice' or 'independent scrutiny' in respect of the DMO, DSTO, CIR Division and the central agencies. The committee, however, questions the extent to which they are able to play the role of 'devil's advocate'. The committee raised these concerns at its hearing in June 2012 with Defence officials and conducted a roundtable discussion with defence analysts to consider how to strengthen contestability within the procurement decision-making process. Apart from Defence's assurances that these organisations and agencies provide independent review and advice, there was no concrete evidence that they do in practice expose proposals to rigorous scrutiny and questioning.

10.66 For example, Dr Brabin-Smith stated that the mechanisms for internal debate and resolution of issues were inadequate—that there needed to be a better mechanism for contestability which has 'to be seen to be working'.⁸⁶ Dr Davies similarly argued that Defence needs greater levels of internal contestability to help ensure higher levels of confidence in decision-making. Air Commodore (retired) Bushell supported the

83 *Committee Hansard*, 7 October 20 11, p. 21.

84 *Committee Hansard*, 13 June 2012, p. 28.

85 *Submission 2*, Attachment, 'Defence and the Need for Independent Policy Analysis', *Security Challenges*, vol. 6, no. 2 (Winter 2010), p. 11.

86 *Committee Hansard*, 12 June 2012, p. 37. For further discussion, see pp. 36–47 of the transcript.

view that there is 'a real need for an independent review of capability development and acquisition decisions'.⁸⁷

10.67 The committee also notes the role of external defence analysts as another means of strengthening contestability, yet the engagement of the various think tanks and industry tends to follow a decision not inform it.

One Defence view

10.68 A number of various internal groups or committees also consider the progress of a project at key stages in its development—Capability Development Stakeholder Group, Options Review Committee (replaced by the Project Initiation and Review Board) and the Defence Capability Committee (DCC). The procurement handbook states that this system of higher level Defence committees 'is designed to provide a corporate view (i.e. 'One Defence') on capability proposals before they are submitted to government for approval'. The outcome of these committees is a 'One Defence' proposal for government approval.⁸⁸ It should be noted that the Defence Capability Development Handbook makes clear that the DCC reviews the draft ministerial or cabinet submission to provide assurance that the proposal recommends capability options that are consistent with strategic guidance and government direction, and are viable, cost effective, and within scope and budget. It also makes sure that the submission presents a 'One Defence' view.⁸⁹ While, government is entitled to, and indeed should receive, advice from the Secretary and CDF that is well considered, coherent and authoritative, it is important that their advice on procurement is complete and has been informed by all groups involved in developing the proposals, especially those with reservations.

10.69 One witness, however, questioned the management theme, 'One Defence', which was introduced in 2009. According to the witness, this approach:

...reduced diversity of views from senior leaders into just one view and advice to government...In such an environment, it is likely that risks may not always be identified or discussed and information can be inadequate. It certainly can affect the morale and commitment of many leaders.⁹⁰

10.70 In his assessment, the 'One Defence' voice reduces accountability because senior executives and Star ranked line managers are able to blur the lines of

87 *Supplementary Submission 3F*, p. [6].

88 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 1.4.15.

89 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 1.4.16.

90 *Confidential Submission*.

responsibility as they defer to the 'One Defence' party line view imposed upon them.⁹¹ He concluded:

'One Defence' is arguably the problem. A diversity of views would be of more value.⁹²

10.71 Dr Brabin-Smith was of the view that it was appropriate for Defence to speak with one voice, 'provided that what that one voice says has been arrived at via a process of thorough contestability and lots of frank and fearless advice, carefully listened to within Defence'.⁹³ Dr Davies agreed that a Defence one voice was 'fine' if that voice 'communicates the degree of uncertainty, the credible dissenting positions within the department that were put forward during the discussion and the degree of risk that has been assessed'.⁹⁴ For him, the communication of the rigour of the process and the areas of uncertainty was the really important matter.⁹⁵

10.72 As noted previously, Dr Black found that there were too many internal committees while contestability of advice within Defence had been diluted.⁹⁶ The committee understands that achieving the right balance between the integration and the contestability of views would make for a sound decision-making process. Evidence before the committee, however, suggests that the so-called independent role of DMO, DSTO and CIR Division does not provide the contestability required to ensure that the 'One Defence' view presented to government represents robust and thoroughly debated proposals.

Conclusion

10.73 There is no doubt that Defence needs greater levels of contestability to ensure that assumptions are thoroughly tested and decisions well informed. The committee acknowledges that Defence has a quality assurance framework that is designed to provide internal contestability and external scrutiny. Yet problems such as mistaking a developmental project for a genuine off-the-shelf product indicate that this internal filter and the gate reviews have not worked as well as they should. Surely a robust risk process would at some stage before second pass approval have corrected false assumptions. The check and review management process, if implemented properly, should test the veracity of assumptions underpinning assessments on costs, schedule, technology, capability, and workforce requirements. Clearly to date, there have been significant breakdowns in this area.

91 *Confidential Submission*.

92 *Confidential Submission*.

93 *Committee Hansard*, 12 June 2012, p. 36.

94 *Committee Hansard*, 12 June 2012, p. 38.

95 *Committee Hansard*, 12 June 2012, p. 38.

96 Department of Defence, *Review of the Defence Accountability Framework*, January 2011, pp. 35–36.

10.74 A number of witnesses strongly supported Defence's revamped gate reviews, which are an improvement on their predecessors, especially the inclusion of two independent experts. The committee, however, does not want to see the contribution of gate reviews rendered ineffective because of a fundamentally flawed management structure. The committee underlines the importance of Defence ensuring that the members of the gate review boards have the relevant skills, knowledge and competencies to scrutinise the proposals before them effectively. The committee would like to see the independence of the external members guaranteed and their ability to provide genuine contestability assured. It would also like to see concrete measures taken to ensure that the implementation of recommendations made by the review boards is monitored, recorded and reported to the relevant capability manager, CCDG and CEO DMO.

10.75 While the committee understands that, if used properly, gate reviews are an important project assurance tool, it recognises that they have their limitations and should not be regarded or relied on by Defence to compensate for failings in its management structure. Gate reviews should be retained as part of a tighter, more streamlined acquisition process and an important quality assurance tool but they must adhere to the principles of objectivity and impartiality and bring the required specialist knowledge and experience to the review.

10.76 In this regard, gate reviews should be overseen by an authority that can exert its independence and authority to ensure that the reviews remain at arm's length from the influence of those with a vested interest in the project under consideration. The contraventions identified by ANAO require Defence to look carefully at ways to safeguard the integrity of these reviews. A new policy amendment designed to strengthen the independence of the chair is not enough. The committee has demonstrated repeatedly that changes to policy and to manuals (process) do not always work.

Recommendation

10.77 The committee notes concern about the gate reviews losing their potency and simply becoming part of the process if overused. The committee believes an annual gate review for major projects would add value but recognises that the format and/or structure may need to be scaled to suit project scope/cost. The committee recommends that full gate reviews be:

- **mandatory for major projects at the following specified milestones—DCP entry; project initiation and review board consideration; first pass approval; second pass approval, contract solicitation and contract negotiation; and**
- **mandatory when a project starts to diverge from original cost or schedule or when significant changes to scope are proposed.**

Recommendation

10.78 In light of revelations about breaches of policy such as chairs of boards having line management responsibility and of misunderstandings stemming from the documentation provided to the gate review boards, the committee recommends further that the Independent Project Performance Office (IPPO):

- exert stronger compliance checks to guarantee the independence and impartiality of the gate review board particularly enforcing the requirement that the chair of the board must not have line management responsibility for the project under review; and
- exercise greater scrutiny of the documentation provided to the review board to ensure that it is relevant and complete including reports on technical risk.

To ensure that the IPPO has the authority and resources to discharge its functions, the committee further recommends that Defence consider carefully whether the functions of the Office should be located in CDG or another agency.

Recommendation

10.79 With regard to ensuring that the recommendations of the review boards are implemented, the committee endorses the ANAO's recommendation that 'Defence ensures that a control mechanism be deployed to monitor the status and completion of actions recommended by Gate Review Assurance Boards and agreed by the relevant executive'.⁹⁷

10.80 The committee also noted the important role of bodies such as the DMO, DSTO, CIR Division, and central agencies in providing independent advice. It was concerned, however, about Defence's interpretation of 'independent advice' and the ability of the various internal groups to probe behind the documentation presented to them and to test the underpinning analysis and assumptions. In light of the 'One Defence' view, the committee is concerned that the independence of their voices may not be heard. Considering that the gate reviews report to the CEO DMO, it is imperative that DMO's advice is contained in the submissions that go to cabinet. Otherwise, the benefit of both the gate reviews and DMO's advice and perspective may be lost.

10.81 In this regard, the committee is not convinced that the so-called independence of the DMO and DSTO is truly independent and would like to see measures taken to strengthen that independence and their ability to register concerns in submissions to the DCIC and government. Despite Defence's assurances that the CIR Division provides greater scrutiny than the FDA, such assurances were not supported by tangible evidence. Moreover, given the fact that a number of analysts were of a

97 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 4.21.

contrary view and supported the re-instatement of the FDA-type function, the committee is concerned that the concept of robust contestability and independent advice promoted by Defence has not been adequately demonstrated. The history of poor project performance suggests that DMO, DSTO, the CIR Division and the central agencies have not fulfilled the devil's advocate role effectively.

Recommendation

10.82 The committee recommends that the minister review, update and reinstate the Ministerial Directive to CEO DMO. The directive is intended to set boundaries and expectations and establish clear accountability for achievement of Defence capital acquisition programs. It should include the requirement that CEO DMO provides independent advice to the minister in DMO's specialist area of major capital projects.

Recommendation

10.83 The committee recommends that the government should again look carefully at making DMO a statutorily independent agency, as previously recommended by Kinnaird and Mortimer, but rejected by Defence and government. The CEO's salary should be set by the Remuneration Tribunal and, as stipulated in the previous recommendation, direct access to the minister should be restored pursuant to a re-instatement of a ministerial directive which has fallen into disuse. The intention behind this recommendation is to find a better way to: guarantee DMO's independence and assist it to provide frank advice to government, have its functions and responsibilities spelt out in legislation, and allow it more latitude to employ specialist personnel.

Recommendation

10.84 The committee recommends that the minister consider how best to ensure that DSTO's specialist advice on technical risk associated with Defence's major capability developments are conveyed to government in a clear and accurate way. The Ministerial Directive to CEO DMO may serve as a model.

Recommendation

10.85 The committee recommends that the Technical Risk Assessments and Technical Risk Certifications (currently presented to the Defence Capability Committee and the Defence Capability and Investment Committee) should be a joint activity overseen by the relevant Service T&E agency head and the Chief Defence Scientist. In light of past underestimation of technical risk, the intention would be to review past experiences and current documentation to determine how risk assessments could be better presented to non-technical experts to minimise the opportunity for risk assessments to be misinterpreted. The reporting structure also needs to be transparent such that assessments cannot be ignored without justification to the key decision-makers (e.g. minister).

10.86 Another important consideration is whether the capability managers, members of the gate review boards and the various committees, and the relevant personnel in

DMO, DSTO and CIR Division have the appropriate skills, experience, resources and corporate knowledge to conduct and interpret analysis and/or provide advice. The committee considers these matters in the following chapters.

Part V

Training, skills and experience

The committee has considered risk management, responsibility, accountability, contestability and independent advice. If people are to carry out their responsibilities of analysing, considering, reviewing and providing advice, they need the training, experience, skills and support to do so. This part of the report concerns Defence's skill base and level of competence in capability development and procurement. It is based on the premise that Defence can have all the correct manuals and guidelines, best practices and procedures in place, but if it does not have the personnel with the right skills, experience and appropriate level of authority, then its acquisition project will stumble at the first hurdle.

In this part of the report, the committee is concerned with Defence as a knowledge-based organisation. It examines:

- the extent to which Defence is an informed buyer and the factors that support or undermine Defence's ability to manage its procurement programs; and
- the quality of analysis that underpins decision-making, with a focus on the skills set required to obtain relevant information (eg: test and evaluation).

As part of this consideration, the committee looks at the resources that Defence allocates to the main agencies responsible for contributing to an acquisition project.

Chapter 11

Knowledge-based organisation

11.1 Defence relies on highly sophisticated technology to meet Australia's capability needs. This technology is expensive, complex and constantly undergoing improvements. In order to procure equipment that will meet Australia's strategic needs, Defence must be a knowledge-based organisation. It needs to have a deep understanding of the capability it intends to acquire—the costs involved, the time and technical challenges required to bring the capability into service and to sustain it for decades in many cases. In this chapter, the committee's main focus is on Defence as an informed buyer.

The right people

11.2 According to the GAO 'at the heart of a business case is a knowledge-based approach to product development that demonstrates high levels of knowledge before significant commitments are made.'¹ In 2010, it noted:

...no reform will be successful [in breaking the cycle of poor acquisition outcomes] without having the right people with the right skills to carry out and manage an acquisition program throughout the entire acquisition process.²

11.3 The RAND study, *Learning from Experience*, similarly turned its focus on people rather than process and noted:

Large complex design and construction programs demand personnel with unique skills and capabilities supplemented with practical experiences in their areas of expertise.³

11.4 The message coming out of experiences with major defence acquisition projects is clear—when defence organisations are seeking to improve their performance they must turn their attention to the suitability and quality of the groups or people who propose, evaluate, select and manage their acquisition programs. Consistent with this observation, evidence presented to the committee was concerned with the people involved in procurement, rather than the process itself: that is getting the right people into the right positions so they can drive necessary change or simply

1 See for example, Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 3.

2 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 1.

3 RAND National Defense Research Institute, *Learning from Experience*, vol. I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. iii.

implement existing process in an intelligent way.⁴ For example, Air Commodore (retired) Bushell argued that the addition of more process to an already 'process-bound organisation' is not the answer.⁵ In support of this view, one industry representative observed:

...Organisational structures only go part way towards solving performance issues...I could have any organisation structure I like that aids communication and interaction. If [we] do not have the right people with the right competencies and the right way of behaviours, then the organisational structure is worth nothing.⁶

11.5 In a similar vein, Dr Davies noted that when things go wrong there is a tendency to assume that if only there had been more process, more information, then better decisions would have been made. He argued, however, that:

...there is no substitute for improving the quality of analysis. And often, rather than adding to the amount of information by collecting more and having more processes and more committees and more paper circulated, actually getting the few right people in the room with the key information they need and the ability to think about it and make a clear recommendation is actually much better than layering over more processes.⁷

11.6 The Royal Institution of Naval Architects also noted that concentrating on trying to improve the situation by imposing more systems or procedures or changing these will not work by itself. In its view, 'systems are not going to overcome basic inabilities'. It suggested that the spotlight needs to be on having 'good-quality, appropriately qualified and current...staff in the correct positions to influence the procurement process'.⁸

Smart customer

11.7 A number of witnesses referred to the need for Defence to be an intelligent or smart customer. In particular, industry argued that Defence needs a very deep understanding of anything that it buys from offshore.⁹ This requires having both a research and development capability and a science and technology capability which can support the development of the skills and experience required to have the ability to question and analyse what is offered by a manufacturer. According to the ANAO, the key challenge for DMO and Defence is to improve the project management,

4 *Committee Hansard*, in camera.

5 *Submission 3*, Annex A, p. 1.

6 *Committee Hansard*, in camera.

7 *Committee Hansard*, 12 August 2011, p. 14.

8 Professor Martin Renilson, Royal Institution of Naval Architects, *Committee Hansard*, 12 August 2011, p. 23. See also comments by The Australian Association for Maritime Affairs, *Supplementary Submission 17*, p. 3.

9 *Committee Hansard*, in camera.

logistics, procurement and engineering services provided to the government, within current and future workforce constraints.¹⁰ It underscored the view that 'knowledgeable people need to be in a position at the right time, to give proper consideration to each system-under-development's functional, physical and regulatory requirements.' In this regard, Dr David Robinson, Engineers Australia, highlighted the central importance of having the expert knowledge to be able to specify requirements. He argued that if 'we have wrong decisions made at the beginning, inappropriate technical decisions, the best management may well deliver a lemon...'¹¹ Such informed people are also needed to verify and validate whether requirements have been met. The overall aim of having skilled and experienced people is 'to ensure that projects move smoothly forward in the clear knowledge of the risks and issues that need to be managed at each point in time'.¹²

11.8 During its site visit to South Australia and Western Australia, the committee also heard similar suggestions about the need for Defence to have the required body of knowledge and experience to manage large and complex acquisitions effectively. Both industry and Defence personnel noted that successful projects rely on understanding design and having personnel with high level expertise engaged, especially at the early phase to avoid serious mismatches and misunderstandings about what is expected.¹³ The committee notes the frequent concern expressed that the opportunities to grow such expertise is diminishing as the government and Defence favour an increasing number of OTS acquisitions and global support arrangements.

11.9 The committee understands some of the concern that OTS and associated outsourcing of design and maintenance has for the development and retention of skills in some areas. At the same time, however, it cannot be expected that as a small buyer in a large international market, Australia can either efficiently or effectively build and retain those very technical skills across the whole gamut of capability. The committee believes this judgement is an important part of initial risk assessment and should be managed on a case by case basis. Regardless of the means of purchase, whether OTS or otherwise, the need for Defence to have far better technical skill at the initial capability assessment phase of the highest possible calibre than is currently the case, goes without saying.

11.10 Indeed, a number of officers emphasised the diligence that Defence must exercise when acquiring a capability. This care extended to OTS purchases, where it is assumed that risk is reduced. They stressed the need for Defence to be in a position where it can, with justification, be confident in the results of the tests and evaluation carried out overseas. To their mind, it was imperative for Defence to know and

10 *Submission 22*, p. 6.

11 *Committee Hansard*, 5 October 2011, p. 6.

12 ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, paragraph 29.

13 Information obtained during site visit to South Australia and Western Australia.

understand what it was accepting, particularly with regard to the regulatory and certification regime of overseas countries and its applicability to Australian standards and conditions. In their view, Defence must be aware of the different approaches taken, or standards applied, when purchasing from overseas. For example, another country or organisation may have a different appetite for risk, or a less stringent regulatory and certification regime.

11.11 In this regard, Dr Davies was similarly concerned about Defence's ability to assess dispassionately the veracity of the information provided by potential suppliers. In his view, one of the ways to filter out over optimistic assurances was to have 'a level of expertise within the Commonwealth to be able to evaluate those promises.' He argued that Defence needs to look at what is realistic and to know from experience what could or could not be done. He recalled from his own project management experience within the Defence intelligence world that:

If Defence does not have the engineering capability to make that assessment then it is very hard to be a smart buyer.¹⁴

11.12 This implies that while Defence may not have to conduct design engineering or developmental T&E in support of any given project, it must have experienced people competent to witness or review what is being done on behalf of the Commonwealth to be able to make informed recommendations to CDG, DMO or the capability manager. The committee has been presented with numerous examples where this has not held true, especially for projects that have been presented to government as OTS.

11.13 Finally, Defence needs informed experts strong on industry knowhow to protect Defence's interests when contracting.¹⁵ One witness suggested that being a knowledgeable buyer demands 'a mix of experienced commercial and contracting staff with a sufficiently large cadre of domain experts'.¹⁶ Thus, the procurement of major defence capital equipment draws on a range of specialist activities and clearly requires the correct level of skills and expertise to match the complexity of the acquisition including scientific, engineering, test and evaluation, contracting and project management. Highly specialised knowledge is required across all these activities.

11.14 For many years, however, there has been much criticism about the inadequacies of Defence as a buyer of major capital equipment. These include: under-estimation of cost and scheduling, the failure to have the required technical personnel in place to execute Defence's policies and procedures, poor specifications in contracts, and lack of industry, business and engineering expertise.¹⁷ For example, it was

14 *Committee Hansard*, 12 August 2011, p. 11.

15 *Confidential Submission*.

16 *Confidential Submission*.

17 See for example, Mr Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 3. Also see chapter 2 of the report.

apparent to Kinnaird that the failures in the purchase of major defence equipment were due to poor analysis and planning before tenders were sought.¹⁸

11.15 In 2008, the Mortimer Review similarly raised concerns about the quality of analysis and poor capability definition. The Pappas Report also referred to the need to provide a more informed basis by which government could choose where and when to spend money to provide the most effective capability to defend Australia. It observed that there was 'often little critical analysis presented with the sponsor's paper' and it was unclear whether committee documentation was sufficient for high quality decisions.¹⁹

11.16 Witnesses to the inquiry gave added force to these observations about poor decision-making or performance, suggesting that some people engaged in major acquisition projects may not be suitable for their tasks—too junior, inexperienced, unskilled or poorly trained. For example, Air Commodore (retired) Bushell noted that analyses of Defence's major projects 'show that the vast majority of project difficulties stem from an inadequate understanding of the operational and technical requirements of the capability, and poor project management. He argued:

CDG is the focal point, but despite drawing heavily upon the Services for the specialist knowledge required, it is unable to get capability requirements properly identified, scoped, costed and risk assessed as they pass through. This is because the Services no longer possess the operational or technical skills and competencies that existed before DRP [Defence Reform Program] and CSP [the Commercial Support Program] 'reforms' and so cannot analyse and provide the baseline capability requirements information required.²⁰

11.17 A sound indication of the level of understanding of a capability requirement is reflected in the quality of product specification and the ability to verify tenderers' claims. As an example of Defence's weakness in the area, Mr Matt Cahill, ANAO cited the Lightweight Torpedo, which was 'originally presented as an in-service solution'.²¹ Likewise, the committee was told during its visit to South Australia that Defence needs a more robust and questioning approach, so that if someone comes to the market with bullish assertions, its personnel can assess the assertions confidently and properly. One officer pointed out that Australia needs to ensure that it is provided with all the facts, citing cases where it has purchased an 'export version' from another country and then needed to minimise the gap between the export version and the capability that the Service wanted.

18 *Defence Procurement Review 2003*, August 2003, pp. 2 and 9–10.

19 Department of Defence, *2008 Audit of the Defence Budget*, 3 April 2009, p. 51.

20 *Supplementary Submission 3C*, p. 12.

21 *Committee Hansard*, 11 August 2011, p. 38.

11.18 According to some officers, Defence has not always fully appreciated the differences in certification requirements in such cases, and has been 'a victim of its own decision'. The message was clear—with procurement 'you get what you ask for and not necessarily what you want'. The Association of Professional Engineers, Scientists and Managers Australia issued the following caution:

There is a fear amongst our broader membership that Defence is either losing, or in some cases has lost, the capacity to ask the right questions through a combination of a lack of appropriate resources and skills and that the consequences for the appropriate management of risk are potentially catastrophic.²²

11.19 Other witnesses have referred to Defence's difficulties coming to grips with the commercial and contractual complexities of major projects.²³ In essence, the evidence underscored the importance of having personnel with the necessary skills, experience and continuity of engagement to ensure that Defence is a smart customer. In their view, there was a clear need to build skills—technical, engineering and business. Submissions to the inquiry, however, highlighted Defence's difficulties in maintaining the currently required skilled workforce.²⁴

Specialist skills in Defence

11.20 Air Marshal Harvey explained that capability managers 'will give advice on what they basically need to deliver capability' and the CDG work largely with DMO and contractors 'often to turn those into formal specifications that go out to industry'. He noted that:

A capability manager will say, 'This is what we need the thing to do, but it is not their job to write the legalistic specification of that.'²⁵

11.21 Thus, capability managers need to be certain and explicit about what they want, CDG needs to be accurate in defining the requirements and DMO able to ensure that the contractors deliver to specifications. Even so, the committee gained the strong impression that at the moment this is not always done well.²⁶ In the following section, the committee looks at the steps Defence is taking to build the required skill base in CDG, DMO and through the capability managers—Chief of Navy, Chief of Army and Chief of Air Force.

22 *Submission 36*, paragraph 13.

23 Dr Thomson, *Committee Hansard*, 12 August 2011, p. 9.

24 See for example, Association of Professional Engineers, Scientists and Managers Australia, *Submission 36*, p. 2.

25 *Committee Hansard*, 5 October 2011, p. 51.

26 See for example, Mr Bond, *Committee Hansard*, 11 August 2011, p. 34.

Capability Development Group and Defence Materiel Organisation

11.22 CDG is responsible for developing and gaining government approval for future defence capabilities and, as noted earlier, works closely on drawing up product specifications.²⁷ CDG, along with DMO, is made up partly of military personnel on short-term postings from their Service. ANAO found that military personnel in CDG bring their military experience and expertise to the technical aspects of the proposals. It noted, however, that the bulk of their day-to-day work comprised general project management and administrative tasks. It found:

This lack of training and management support particularly hampered their ability to undertake complex cost and schedule estimations for the capability proposals.²⁸

11.23 For example, based on the findings of a previous audit, Ms Holbert, ANAO, informed the committee that project managers felt under-trained because they were doing a lot of work in the costing of proposals, and on the project management for the capability projects as they went through first-pass and second-pass. She explained:

They felt that in those areas they had gaps in their training and knowledge, yet they had been brought into Capability Development Group for their war-fighters skills and knowledge to inform the identification of options for consideration by government. So, some of it will be how they are being used...Some of it is about how you choose to organise the structure to use the skills of the people you have to get the outcomes that you want.²⁹

11.24 The contribution of highly-performing ADF personnel with operational expertise is undoubtedly helpful to the capability development and procurement processes. Dr Thomson suggested, however, that this needs to be balanced 'by people who have enough experience in the field to understand the commercial realities of the people they are dealing with'.³⁰ ADF people may also lack the qualifications and experience with regard to identifying and quantifying risk—technical, integration, capability and certification. The committee notes that the majority of the Service personnel in CDG and DMO are operators, maintenance engineers or technicians who work predominantly with mature systems. They are drawn from a culture that requires compliance with a manufacturer's instructions rather than one that is experienced in questioning and verifying in a quantifiable manner risks or deficiencies in what the manufacturer is presenting. Thus, a key issue for both CDG and DMO is building and retaining the skilled workforce that will be needed in coming decades. Air Marshal Harvey outlined the challenges for Defence:

27 Department of Defence, Capability Development Group, 'Welcome to CDG', http://defence.gov.au/capability/_home/Default.asp (accessed 4 January 2012).

28 *Submission 22*, paragraph 21.

29 *Committee Hansard*, 11 August 2011, pp. 30–31.

30 Mark Thomson, private capacity, *Committee Hansard*, 12 August 2011, p. 13.

Like many other organisations, Defence and DMO face the challenge of attracting and retaining qualified and skilled staff to progress this large number of projects throughout the capability life cycle.³¹

11.25 Another complication for CDG is that many of their personnel do not spend enough time in the group to develop expertise and experience.

Staff turnover

11.26 While the ADF posting policy aims to achieve minimum three-year postings, the length of a standard posting can often be shorter than three years, after which some military personnel posted to CDG or DMO may return to their Service. The Mortimer Review found that many of the core staff in CDG were military personnel on short-term postings to CDG, and that the average length of tenure in CDG was only 18 months.³²

11.27 In their submission, Dr Davies and Dr Thomson supported this finding, suggesting that employing junior military officers on short-term postings contributes to poor outcomes for CDG.³³ In its submission, Sonartech Atlas also highlighted CDG staff tenure as a potential issue, noting that projects can take up to ten years to reach second pass from the time of inclusion in the DCP. As a result, the ability for an ADF officer on an 18 month posting in CDG to have any significant effect on the outcome of a project is limited, and may be further diminished as a result of an officer's limited experience.³⁴ Defence informed the committee that the current average tenure of Service personnel in CDG was above three years.³⁵

11.28 The length of tenure for the CCDG was specified in the Kinnaird Review recommendation that led to the creation of the position—the Review recommended a defined tenure of at least five years.³⁶ In the eight years since the creation of the position, there have been four different individuals appointed to the position, all of whom have been ADF officers. No appointee has yet held the position for the minimum five years recommended by the Kinnaird Review. Indeed, the length of tenure has decreased with each subsequent appointment, with Air Marshal Harvey's recent tenure as CCDG lasting only 13 months.

11.29 The minister has recognised that skilling remained a major challenge for the CDG. In August 2011, he noted that there was 'a very heavy emphasis on improving project management skills' and announced that Defence would embark on a program

31 Air Marshal John Harvey, Department of Defence, *Committee Hansard*, 7 October 2011, p. 3.

32 David Mortimer, *Going to the next level: the report of the Defence Procurement and Sustainment Review*, 2008, p. 24.

33 Andrew Davies and Mark Thomson, *Submission 8*, p. 2.

34 Sonartech Atlas, *Submission 13*, pp. 3–4.

35 Answer to written question on notice no. 1.

36 *Defence Procurement Review 2003*, August 2003, p. v.

to ensure that members of the ADF posted to the capability section would, in general, 'have three year terms of office'. He conceded that the proposal could not be 'an absolute rule, because people will come up for command postings and command positions'. Even so, he stated that a three-year tenure for personnel appointed to the capability area would help instil greater expertise, experience and capacity in those appointed to that area.³⁷

11.30 The constant rotation of Service personnel also seriously compromises the need for strong internal contestability. This is especially so between the technical and operational arms of the Services, and the central and strategic planning groups, where despite the obvious and necessary tension, all proposals should be tested for their consistency with the Defence White Paper, as well as for practicability and cost.

11.31 The committee is not convinced that bringing uniformed people into CDG to assist in project management is the most appropriate use of their skills and operational experience. They may be better suited to the role of sponsor rather than manager. Also, the committee has referred to the timeframe involved in procuring a major capital asset and although a three-year tenure is an improvement it still means a high turnover in a job that requires continuity. Moreover, the posting cycle of a uniformed officer and operational imperatives adds further to tenure insecurity. This means that the organisation does not have the opportunity to build up the intrinsic skills it needs, to retain knowledge and to develop long-term maturity to be able to use that knowledge effectively.

11.32 The minister also indicated that Defence would give priority to developing career streams for both ADF and civilian staff in capability development and acquisition and develop employment incentives to retain key civilian staff.³⁸ In October 2011, Air Marshal Harvey explained that shortfalls in capability and capacity of personnel in the CDG and DMO were being progressively addressed through the implementation of a range of professionalisation and collaborative specialisation. Several skilling and professionalisation strategies have been implemented including:

- a structured CDG desk officer skilling program to address core capability development skilling—provides an annual induction course and then a flexible, progressive skilling program to address project and individual needs;
- targeted recruitment and employment schemes;
- above-the-line contractor support, when necessary; and

37 Stephen Smith MP, Minister for Defence, 'Minister for Defence—Press Conference—Black Review', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/minister-for-defence-press-conference-black-review-9-august-2011/> (accessed 24 April 2012).

38 Stephen Smith MP, Minister for Defence, 'Improving personal and institutional accountability in Defence', 9 August 2011, <http://www.minister.defence.gov.au/2011/08/09/improving-personal-and-institutional-accountability-in-defence/> (accessed 24 April 2012).

- the delivery of structured overview and detail-level training courses for CDG desk officers to address skills shortages in cost estimation.³⁹

11.33 Overall, he suggested that CDG managers 'currently deem 90 per cent of the desk officers to be sufficiently skilled to perform the full range of assigned duties without additional support'.⁴⁰ Finally, Air Marshal Harvey told the committee that the CDG had been allocated additional resources to address the high workload and has expanded its skilling program. CDG is also investigating an industry partnership arrangement where Defence skills are boosted by industry.⁴¹ On retaining critical staff in CDG, Air Marshal Harvey noted that currently Defence was looking at higher pay for 'specific individuals who are particularly valued by the organisation'.⁴² The committee notes that none of these measures such as certification frameworks or even higher pay will compensate for the diminishing opportunities to provide hands-on experience for future specialists such as design engineers.

Defence Materiel Organisation

11.34 DMO is responsible for acquiring and sustaining equipment for the ADF. DMO currently has approximately 5,500 civilian staff and, according to Defence, 528 military personnel working in DMO on projects—Navy, 74; Army, 229; and Air Force 225.⁴³ The average length of tenure for military personnel in DMO estimated in 2008 was under two years—lower than the average for all DMO staff.⁴⁴

11.35 As one of DMO's primary functions is procurement and contracting, it is important for the organisation to deal effectively with industry and negotiate value for money for the Commonwealth. Additionally, DMO's Systems Program Offices (SPOs), responsible for sustainment of major platforms, require a mixture of engineering, logistics, and contract management expertise. As a result, skills development in DMO includes the need for skilled negotiators, commercial, project management and logistics expertise and also skilled engineers.

Commercial and contracting competence

11.36 Industry representatives expressed frustration regarding a perceived lack of commercial awareness on the part of DMO and Defence. One witness recognised the

39 *Committee Hansard*, 7 October 2011, pp. 2–3.

40 *Committee Hansard*, 7 October 2011, p. 3.

41 *Committee Hansard*, 7 October 2011, p. 4.

42 *Committee Hansard*, 7 October 2011, p. 35.

43 *Defence Annual Report 2010–2011*, vol. 1, p. 44, records that DMO had 5,526 APS staff for 2009–10. Defence indicated that DMO's staffing level stood at 7,200.

44 David Mortimer, *Going to the next level: the report of the Defence Procurement and Sustainment Review*, 2008, p. 48. Defence informed the committee that 'the expected posting tenure for military personnel in DMO was three years.' See Defence's answer to written question on notice no. 1.

need for DMO to be 'a very high performing commercial execution and implementation Agency...concentrating on program management, engineering, contractual excellence, logistics and productive engagement with industry'. In his view it 'must be able to manage its resources to recruit and retain the skilled, experienced staff it needs'.⁴⁵ Mr Tonkin, Australian Industry and Defence Network, made clear, however, that from their perspective:

...when we talk about having a commercially aware and commercially sensitive DMO, we are not talking about a commercial structure; we are talking about...an awareness and understanding of the pressures, demands, costs et cetera that relate to industry's engagement with government in these activities.⁴⁶

11.37 Due to fluctuating periods of downturns and upturns, maintaining a skilled workforce able to meet Defence's demands in periods of high workloads can be difficult for industry. Mr Willox stated that while showing some improvement, those in DMO do not have a commercial background or commercial experience or commercial awareness of how the business world operates. He said:

There is a perception or a belief by some within DMO and the defence establishment that a switch can be flicked, skilled workers can be found, projects can be delivered miraculously on time and on budget from a very low starting point. The time pressures get compressed or you have changes made to specifications which are sometimes questionable and sometimes leave industry waiting for months or years for projects to be delivered from the time they were first announced. In the meantime, industry has had to pick up and operate project management teams to run this, then let them go and pick them up again. So it is that awareness of how business operates.⁴⁷

11.38 Dr Davies and Dr Thomson argued that the DMO, in particular, needs to attract and retain individuals with commercial acumen and technical knowledge, including by paying private sector salaries where necessary.⁴⁸

11.39 The need for experienced and skilled personnel was also evident in the field of contracting and commercial negotiations. For example, the author of a confidential submission who has had extensive involvement as a senior legal adviser on DMO projects was highly critical of the institutional lack of competence in contracting. In his experience, most of the people in Defence were not adequately trained to be, and many did not want to be, procurement and contracting experts. According to the lawyer, the people were:

45 *Confidential submission.*

46 *Committee Hansard*, 11 August 2011, p. 6.

47 *Committee Hansard*, 11 August 2011, pp. 4–5.

48 *Submission 8*, p. 2.

...generally well-meaning, hard working and trustworthy people who were, nonetheless dangerously naïve and inexperienced when it came to matters commercial.⁴⁹

11.40 He contrasted their commercial skills with those of negotiators from industry:

The people whom Defence faces across the negotiation and contract progress meeting tables are almost invariably procurement and contracting experts, and are almost invariably good at pretending not to be.⁵⁰

11.41 With respect to the actual procurement of a major capital asset, Mr King told the committee that it was DMO's negotiating skills that 'let them down'—business acumen. He explained that he would like to develop 'an acquisition community' whereby military people, public servants and external people in DMO were exposed very early to how business operates:

We do run these courses at the moment, but we need more of it—business acumen, how business operates, what you can negotiate and what you cannot.⁵¹

Project management

11.42 A number of witnesses were concerned about Defence's ability to manage the acquisition of major defence capital assets. The Defence Teaming Centre told the committee of a perception that DMO 'lacks and is unlikely to ever be able to secure appropriately qualified personnel to adequately project manage every project in the CDP'.⁵² It stated:

Rather than personnel shortages, industry suggests a skills shortage within the current DMO personnel.⁵³

11.43 Air Commodore (retired) Bushell argued that until the DMO returns 'to sound project/system and engineering management methodologies, and is manned with the required skills and competencies, it will continue to fail to deliver'.⁵⁴ Dr Davies stressed the importance of professional expertise in managing major projects, suggesting that Defence should be contracting in the necessary expertise to manage

49 *Confidential Submission*.

50 *Confidential Submission*.

51 *Committee Hansard*, 7 October 2011, pp. 9–10. Mr King explained further, 'as both public servants and as military folk, we do not really understand the drivers of industry as well as we might—cash flow; indeed, the need to make a profit. Too often, I think our interactions with industry oscillate between being in love with them or being at combat with them instead of just engaging in business with them.'

52 *Submission 16*, p. 2.

53 *Submission 16*, p. 4.

54 *Submission 3*, p. 14.

projects if it did not have the in-house capability rather than using personnel with insufficient expertise.⁵⁵

11.44 One industry representative told the committee that DMO's project teams must be managed by people with real experience in the field of the products of which they are managing. In his opinion, it was 'nonsense to claim that because someone has a formal project management qualification that they can suddenly manage the acquisition of a product in a field in which they have no experience'. From his experience, quite a few of the DMO project managers he had worked with were 'no doubt good people but way out of their depth trying to manage a project of which they have little experience and this is a recipe for failure'.⁵⁶

11.45 The six independent members of the gate review boards also drew attention to inexperienced and inadequately skilled project managers. Dr Neumann observed that there are 'quite inexperienced people who are managing what in other organisations would be really big things, but in DMO are the minnows'. The ANAO also noted that compared to the rest of the APS, Defence has relatively junior people running very large complex projects.⁵⁷ While highlighting the importance of project management experience, Mr Gallacher observed that DMO probably do not have enough of the right people 'in the right slot' with the teams to support them.⁵⁸ His colleague, Mr Irving noted further that people need not just the skills but the experience as well.⁵⁹ He mentioned the work that the independent members of the gate reviews were doing to mentor people in DMO.

11.46 Other submissions to this inquiry also cited DMO's 'generalist' approach as insufficient for the complexities of capability development and acquisition.⁶⁰

Skilling initiatives

11.47 Defence has acknowledged the need to address shortfalls in both the quantity of available staff, and the skills and expertise of staff. Mr King indicated that he would like to see DMO well staffed, well trained, well resourced and for business acumen to become part of its core skilling. He wants to develop an acquisition community that provides for military people, public servants and external people to be exposed early to how business operates. According to Mr King, DMO is very engaged

55 Dr Andrew Davies, *Committee Hansard*, 12 August 2011, p. 15.

56 *Confidential, Submission*.

57 *Committee Hansard*, 12 June 2012, p. 12.

58 *Committee Hansard*, 13 June 2012, p. 10.

59 *Committee Hansard*, 13 June 2012, p. 10.

60 Air Commodore (Retired) Bushell, *Submission 3*, p. 14; Attachment, 'The Decline in the Management of Defence and Defence Capability Development, Acquisition, Preparedness, and Sustainment', Air Power Australia Analysis 2009–05, 5 September, 2009, pp. 2–3; *Supplementary Submission 3A*, Annex A, pp. 5–6 and Australian National Audit Office, *Submission 22*, p. 6.

on the issue of business thinking and practice and upskilling its people in understanding how to deal with industry.⁶¹

11.48 The committee remains concerned at the viability of this aspiration in practice. The poor standard of contract negotiation, for example, was highlighted by a number of witnesses. Given that a defence project may run for many years, most uniformed or civilian members in DMO may be involved in one or perhaps two significant contract negotiations. The industry participant will generally be a specialist in this area and have experience on a number of contract negotiations in any given year. Industry has expressed the view that both the Commonwealth and industry would benefit from having better matched contract negotiation skills.

11.49 Defence should consider a small team, highly skilled in these key areas, that could work across all projects when required. These skillsets could be contracted from an industry panel. The committee understands that the DMO already use a panel of legal practitioners skilled in this area and recommends the increased use of this arrangement.

11.50 According to Air Marshal Harvey, over recent years DMO has maintained a strong focus on professionalisation and upskilling of both its staff and those of industry and is working towards an integrated professional workforce with vocational, university and professional accreditation. He also noted that as part of Defence's commitment to improve its acquisition performance, Defence and the DMO had introduced a professional industry standards certification framework for procurement and contracting staff. The Directorate of Professionalisation and Staff Development has been developing certification programs focused on DMO-specific competencies and gaining professional qualifications for various technical and management streams.⁶² As a result of these initiatives, over 1400 staff have now been certified or are enrolled in a certification program—previously only 153 staff were certified in areas of project management, engineering and accounting in 2005.⁶³ DMO has also completed work with Government Skills Australia and other government agencies on the redevelopment of Australian vocational procurement and contracting competencies and qualifications.⁶⁴

11.51 While recognising that DMO had serious deficiencies in some areas in particular skillsets, the Commonwealth Auditor-General referred to the work that DMO has put in to improve their project management skills. In its submission, the ANAO again mentioned that in recent years, DMO had aimed to professionalise and upskill its workforce.⁶⁵ Mr Michael White, ANAO, noted that Dr Gumley was

61 *Committee Hansard*, 7 October 2011, p. 9.

62 ANAO, *Submission 22*, p. 6.

63 ANAO Audit Report No. 20 2011–12, *2010–11 Major Projects Report*, paragraph 3.38, p. 90.

64 *Committee Hansard*, 7 October 2011, p. 3.

65 *Submission 22*, p. 6.

convinced that certification measures were 'showing improvement'.⁶⁶ Dr Thomson mentioned the good things that DMO has done, such as pursuing professionalisation of its workforce, and requiring people to become members of professional organisations. He suggested that DMO should be encouraged to 'push harder to improve the skills and the commercial, business and technical acumen' of its people.⁶⁷

Turnover

11.52 DMO relies significantly on short-term military appointments to bolster its skill base. As Dr Thomson explained, an ADF officer with an engineering degree and some operational experience is often the best person DMO can get for the job, even if they only have the person for a short period of time.⁶⁸ However, postings into DMO or CDG for ADF officers are not necessarily beneficial for their careers: such postings can take the officer out of the operational field and temporarily off their career track,⁶⁹ which reduces the appeal of DMO and CDG to potential candidates. Dr Davies and Dr Thomson suggested that reliance on short-term military appointments to DMO projects should be minimised.⁷⁰ With regard to Navy, industry representatives expressed the view that it is up to Navy to promote procurement and ship building postings as advantageous to an officer's career; the current understanding was that these postings were not seen to be advantageous.⁷¹

11.53 In relation to its civilian staff, DMO is taking measures to retain some of these skilled personnel who are seen to be critical to the organisation. Mr King explained some of the incentives being offered to public service staff in the executive levels 1–2 range:

...we have introduced a building defence capability plan, which allows some flexibility to add increased base salary payments and retention payments for a commitment to stay three years or something like that. They are proving quite successful in retaining skills.⁷²

11.54 However, the Rizzo Review found that the provisions in the Defence Enterprise Collective Agreement to allow DMO flexibility to pay market salaries

66 *Committee Hansard*, 11 August 2011, p. 31.

67 *Committee Hansard*, 12 August 2011, p. 8.

68 Dr Mark Thomson, *Committee Hansard*, 12 August 2011, p. 18.

69 Richard Griffiths, Australian Association for Maritime Affairs, *Committee Hansard*, 12 August 2011, p. 23.

70 Andrew Davies and Mark Thomson, *Submission 8*, p. 2.

71 Richard Griffiths, Australian Association for Maritime Affairs, *Committee Hansard*, 12 August 2011, p. 26.

72 *Committee Hansard*, 7 October 2011, p. 35.

where necessary—particularly for staff at SPOs in major capital cities—were 'not well known and the current approval mechanisms seem overly bureaucratic'.⁷³

Skilled people not more people

11.55 Industry representatives suggested that DMO has attempted to compensate for a lack of skills through additional personnel. One industry representative was of the view that there were 'way too many people in DMO'. He surmised that DMO had generated this number to 'compensate for some of the shortfalls in competencies and expertise'—it was throwing more people at the problem rather than getting the right people with the right levels of expertise and retaining them.⁷⁴ In evidence, industry representatives referred to the tendency in DMO, as well as CDG, to look to process to improve performance and not outcomes.⁷⁵ Similarly, during its visit to Western Australia, industry representatives told the committee that less focus should be on process and more attention given to having appropriately qualified, experienced and senior people engaged up front to sign off on risk.

11.56 Clearly, the need is not for more staff but for people with the appropriate skills, experience and authority. An industry representative in Perth cited the FFG upgrade project as an example of where higher-level personnel from both Thales and DMO were applied to the project once it ran into problems—having the right people in place with decision-making powers helped the project recover.

11.57 The committee notes Defence's use of professional service providers as a means to obtain support for projects where there are no available APS or uniformed members qualified and experienced to fulfil the role. The committee supports this approach and is concerned that due to financial considerations, Defence appears to be under pressure to replace such expert contracted support with APS staff regardless of their suitability for the role.

Engineering and high technical skills

11.58 This report has commented on the need for Defence to be able to identify and assess project risk accurately during the early stages of a project, and to manage risk throughout the process, especially technical risk. Again the committee notes that the need is for knowledgeable and experienced people. For example, the Royal Institute of Naval Architects noted that it was essential for Defence to have an adequate number of appropriately qualified and trained engineers, with up-to-date experience who are in the correct position to influence the procurement process.⁷⁶ It noted further that mechanisms must be in place to ensure that those at the procurement end of the

73 Paul Rizzo, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 63.

74 *Committee Hansard*, in camera.

75 *Committee Hansard*, in camera.

76 *Submission 18*, pp. 2 and 3–4.

process are able to benefit from those with experience at the operational end.⁷⁷ The Association of Professional Engineers, Scientists and Managers Australia argued, however, that Defence is in danger of losing its ability to weigh up and manage risk adequately due to a lack of technical competence.⁷⁸ It argued:

To be blunt the Defence organisation is struggling to maintain the technical professional workforce it requires for current materiel let alone address the skill requirements demanded by the forward agenda to meet Force 2030.⁷⁹

11.59 For example, at the time ANAO published its audit report on acceptance into Service of Navy Capability, the ANAO found that Navy had filled only two-thirds of its own engineering positions, 72 per cent of the Navy engineer positions in DMO and only about one-third of Navy engineer positions in CDG.⁸⁰ In its view:

This limits the availability of Navy engineers to perform the vitally important role of bringing their knowledge of the operating environment into the capability definition and acquisition stages of the capability life-cycle.⁸¹

11.60 DSTO and industry representatives who briefed the committee in Perth and Adelaide highlighted the difficulties faced by Defence in retaining and growing its engineering skills base. While integration and interoperability are recognised as central to Defence's capability development, attracting and retaining systems engineers able to master these tasks will continue to present difficulties for both Defence and industry. DSTO explained that there was a critical shortage of systems engineers and long-term planning was required to 'grow' them. Noting that a systems engineer requires a technical degree and up to ten years experience, DSTO indicated that Defence needs time to build its skilled workforce. Again, the committee notes that such rebuilding requires both time and opportunity which the current procurement and sustainment approach expected by government (and many commentators) does not appear to encourage.

11.61 As repeated throughout this report, the emphasis is on having the right people working in their field of expertise and not on more process.

Incentives

11.62 In terms of attracting recently-graduated engineers, DMO faces significant barriers in a highly competitive market. The work that DMO is able to offer graduate

77 *Submission 18*, p. 3.

78 *Submission 36*, p. 3.

79 *Submission 36*, paragraph 8.

80 ANAO Audit Report No. 57 2010-11, *Acceptance into Service of Navy Capability*, paragraph 71.

81 ANAO Audit Report No. 57 2010-11, *Acceptance into Service of Navy Capability*, paragraph 71.

engineers—contract management, project management and personnel management—is often not the engineering experience that young engineers seek to advance their careers. Instead, young engineers are more likely to pursue careers at the big engineering companies where they are able to do core engineering roles. Dr David Robinson of Engineers Australia suggested that the problem is due to DMO and Defence having outsourced much of the core engineering functions:

The reputation there at the moment and the opportunities in Defence and a lot of government departments where a lot of the engineering has been outsourced are not there. They would tend to go to the big engineering houses—the GHGs, the Sinclair Knights, Thales or people like that—where they can get real engineering, but to have them actually in defence it is going to be very difficult to attract them with limited career opportunities.⁸²

11.63 The support arrangements for MOTS projects, such as the Super Hornet and C17, where much of the design engineering remains off-shore in the US, is an example of the lack of opportunities in Defence to grow engineering and allied technical skills. Even so, as noted previously, OTS is required only as a benchmark with regard to capability and cost comparability and each acquisition should be assessed on a case by case basis taking into account the importance of sustaining skilled workforce in areas deemed to be of critical need for Australia's national security.

11.64 Air Marshal Harvey told the committee that DMO uses the materiel TAFE employment scheme, materiel graduate scheme, materiel undergraduate scheme and the engineering undergraduate scholarships at the Australian Defence Force Academy to attract and retain engineers and technical staff. DMO has also entered into memoranda of agreement with Engineers Australia and the Australian Maritime College in an effort to secure high-quality engineers and technical staff.⁸³ Successfully putting young people through training courses is only the first step. The real challenge is providing them with a career path that allows them to use and build on their qualifications in such a way that they develop engineering competence across a range of activities from design through to certification.

The Services

11.65 As the users of the equipment procured by DMO, the Services require a level of technical competence in order to understand the feasibility and suitability of proposed capabilities and to specify their requirements accurately. This includes knowing what is required to satisfy the capability manager that the product is fit-for-purpose, and what is needed to operate and maintain complex equipment.

82 Dr David Robinson, Engineers Australia, *Committee Hansard*, 5 October 2011, p. 7.

83 DMO is also continuing to support the Australasian Procurement and Construction Council initiative to develop strategic procurement courses at Australian Technology Network universities and the University of Canberra. *Committee Hansard*, 7 October 2011, p. 3.

11.66 Reforms initiated in the 1990s have had significant effects on the ability of the Services to sustain complex military systems as their level of technical expertise has eroded over time. Under the Tange Review, the Defence Reform Program (DRP) and the Commercial Support Program (CSP), the technical and engineering capabilities of the Services were downsized and many of their functions were outsourced to industry. The resultant gap in technical expertise and experience in the Services has reduced their ability to define their operational requirements for future capability. The effects of the reforms are now coming under increasing criticism as the need for technologically competent workers in both Defence and the Services becomes apparent. Air Commodore (retired) Bushell outlined an issue with the original reforms:

...the premise that technologically skilled engineering professionals may be replaced with technologically unskilled generalists, and that process takes precedence over management, have been shown not to work, and indeed cannot be made to work.⁸⁴

11.67 The transfer of some resources from the Services—particularly Navy—to DMO, CDG, or the private sector has potentially limited the ability of the Service Chiefs to obtain guidance and assistance about requirements determination and developing new capability.⁸⁵ According to Mr Bond from ANAO, these transfers can also disrupt the development of specialisations within the Services as key personnel move around inside the Defence organisation.⁸⁶ Changes in the procurement process that have resulted in personnel moving from Defence into the private sector have further reduced the skills and expertise available within all areas of Defence.

11.68 Notably, this shift is important for Air Force and Navy, the two high-technology Services operating equipment such as fighter jets and submarines. The Air Force in particular has a long history as a maintenance-based Service, stemming from the need to maintain its aircraft with varying amounts of industry support. Because of the relatively small size of the Air Force's fleet, an unserviceable aircraft represented a significant loss to capability, leading to the establishment of higher maintenance standards than larger forces such as the US Air Force.⁸⁷ Air Marshal Geoff Brown, Chief of Air Force, cited the retention of some of Air Force's engineering and logistics expertise as the critical factor to the successful operation of the Air Force.⁸⁸ Similarly, Dr Davies informed the committee that while Air Force had done a very good job of dealing with the situation post the 1990s reforms, Navy had suffered from the downsizing of their engineering capacity.⁸⁹ Nonetheless, the committee notes that Air

84 Air Commodore (retired) Bushell, *Submission 3*, Annex A, p. 4.

85 Fran Holbert, ANAO, *Committee Hansard*, 11 August 2011, p. 27.

86 *Committee Hansard*, 11 August 2011, p. 28.

87 Air Commodore (retired) Bushell, *Supplementary Submission 3C*, p. 21.

88 *Committee Hansard*, 5 October 2011, p. 32.

89 *Committee Hansard*, 12 August 2011, p. 6.

Force, as with the other Services, is also under stress as evidenced by difficulty in filling all design engineering appointments within SPOs.

11.69 The Rizzo Report referred to, among other things, a 'hollowed-out' Navy engineering function and made several recommendations in relation to Navy's workforce requirements, including the need for adequate resourcing, building engineering talent, and the need for workforce planning.⁹⁰ As Dr Thomson informed the committee, the Rizzo Report suggested that 'if Navy is going to operate complex vessels, it needs to have engineers that can advise it about how to operate' them.⁹¹

11.70 According to Air Commodore (retired) Bushell, Defence is 'now working from the lowest base of technical skills that any of the three Services have ever faced since their formation'. He described the skills base as 'brittle'.⁹² Indeed, as noted above, the dearth of skilled and experienced engineers is evident most markedly in Navy. The committee and various recent reviews such as the Rizzo Review and ANAO audit report, *Acceptance into Service of Navy Capability*, have identified the decision to outsource much of Navy's engineering expertise some time ago as problematic. The decisions to outsource key enabling functions, such as training, logistics and maintenance, were in large measure caused by government directives stemming from the Wrigley Review (1990) and the Force Structure Review (1991). While well intended, they have had serious long term deleterious effects on the Services technical capability.

11.71 For example, Air Commodore (retired) Bushell cited a November 2009 Strategic Review of Naval Engineering, which was conducted by Chief of Navy, leaked to the *Australian*. It highlighted:

- a critical shortage of engineers;
- 'cancerous' morale problems, including a negative attitude;
- a massive shortfall in Navy numbers;
- a broken management system; and
- a poor state of engineering policy.⁹³

11.72 In his view, two decades of multiple reforms and efficiency and cost-savings initiatives imposed by government have 'diluted and fragmented Navy engineering resources'.⁹⁴ Indeed, the recent problems in naval sustainment have been partly

90 Paul Rizzo, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 9 and recommendations 9, 10, 17, 19, 20, 23. Rizzo stated 'In addition to being fragmented, it [Navy engineering workforce] has been "hollowed-out" over many years as a result of change upon change in Defence and an undue focus on short-term operational demands'.

91 *Committee Hansard*, 12 August 2011, p. 3.

92 *Committee Hansard*, 12 June 2012, p. 21.

93 *Submission 3*, p. 2.

94 *Submission 3*, p. 2.

attributed to the outsourcing of Navy's engineering expertise. This has also placed more pressure on DMO as many of the Services' sustainment responsibilities have been shifted across to that organisation.⁹⁵ According to Air Commodore (retired) Bushell, capability managers no longer possess 'the organisation or the skills and competencies base required to discharge their responsibilities'. In his view, they 'can be organised, manned and skilled to do it, but until then the function cannot be done satisfactorily'.⁹⁶

11.73 In regards to the shift of some engineering functions from Navy to DMO, the Rizzo Review found that the DMO SPO responsible for Amphibious and Afloat sustainment activities—four classes of vessels—was significantly underresourced.⁹⁷ It also highlighted the recruitment difficulties facing some SPOs, particularly those situated in competitive labour markets. As noted earlier, despite this shift of skills to DMO, it also has difficulties retaining personnel with technical expertise.

11.74 Indeed, respondents to a survey of defence industry capabilities had formed a strong view that Defence had been 'de-engineered over the last 15 years or so' and that SPOs were often run by generalist project managers with limited systems engineering and systems integration skills. According to the respondents, the Australian Defence sector values systems engineering and systems integration expertise 'far less than general management skills resulting in a skills re-profiling to the latter'. The authors of the survey surmised that one reason industry does not regard DMO as a mature client in the systems engineering and systems integration sense was that this expertise 'does not feature as prominently as might be expected from international practice in the early stages of projects'.⁹⁸

Rebuilding Defence's engineering base

11.75 Industry representatives pointed out that the recent problems encountered by Navy were similar to many other problems within Australia. Dr Robinson defined the problem as a loss of institutional knowledge, where there is now an absence of experienced workers with an understanding of the systems:

The people who understand the aircraft, ships, the tanks or whatever defence equipment there was are not there. They do not understand. People who come in and do a job having not been familiar with this before are a real problem.⁹⁹

95 Air Commodore (retired) Bushell, *Supplementary Submission 3C*, p. 10 and Ian McPhee, Australian National Audit Office, *Committee Hansard*, 11 August 2011, p. 25.

96 *Supplementary Submission 3C*, p. 10.

97 Paul Rizzo, *Plan to Reform Support Ship Repair and Management Practices*, July 2011, p. 63.

98 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

99 *Committee Hansard*, 5 October, p. 5.

11.76 Many witnesses also highlighted the importance of continuous work to keep Navy, Defence and industry's technical staff skilled, regardless of whether they are employed by Defence or by contractors. Professor Martin Renilson, Royal Institution of Naval Architects, noted:

...not only do you need to have these staff but also they need to be kept current by continually doing things, a little bit like how the military staff are kept current by continually exercising. If you stop having these people doing the exercises then you are in the position where, even if they were well qualified in the initial state, they will still become non-current and therefore unable to advise in that manner.¹⁰⁰

11.77 Speaking as an engineer in project management, Mr King stated that in a broader sense, he was 'absolutely certain that development enhancement of engineering skills has to take place'.¹⁰¹ He noted that it was not simply a matter of recruiting people and training people but about 'making sure that the input of the engineering community is taken seriously and treated with due regard'. His view about the undervaluing of engineering advice is consistent with that expressed by respondents to the survey of defence capability cited above. Mr King explained:

So part of the rebuilding of the engineering base, both in Navy and in DMO, is making sure that the inputs from engineers are well considered, well structured and well regarded by the community in which we operate.¹⁰²

11.78 Rear Admiral Jones told the committee that Navy leadership was 'fully seized of the outcomes of the Rizzo report' and of Navy's need to improve its technical skills base, particularly its engineering strength. He suggested that the Chief of Navy was working actively to implement Mr Rizzo's recommendations quickly and that Navy was also looking to see where it 'might be able to get supplementation' to improve its engineering base.¹⁰³

Solutions

11.79 The skills shortage in Defence's acquisition program is not new. Indeed, in its 2006 report on Naval shipbuilding, the committee noted the observations of a number of witnesses who were concerned that the deterioration in Defence's design and engineering skills meant that the organisation was no longer an intelligent customer. One referred to over 15 years of outsourcing which had placed Defence in a 'fairly precarious position with regard to its ability to operate as an informed customer'.¹⁰⁴

100 *Committee Hansard*, 12 August 2011, p. 24.

101 *Committee Hansard*, 7 October 2011, p. 5.

102 *Committee Hansard*, 7 October 2011, p. 5.

103 *Committee Hansard*, 5 October 2011, p. 46.

104 Standing Committee on Foreign Affairs, Defence and Trade, *Blue water ships: consolidating past achievements*, December 2006, paragraphs 16.7–16.18.

Another feared that Defence was coming close to a time when it could 'not warrant the safety' of its own ships.¹⁰⁵

11.80 Six years on the problem remains. Many witnesses indicated this shortage must be addressed as a priority: that 'the work on retaining and attracting key personnel cannot wait until tomorrow'.¹⁰⁶ In the committee's view, Defence requires a far more targeted and concerted effort to build up a core of critical skills within its major acquisition groups and agencies. This also requires the creation of opportunities to gain and maintain relevant experience. Defence must be allowed to have a sustainable base of development engineering and test capability. This will require commitment from government.

11.81 One witness recommended the establishment of a 'specialist tri-service ADF Acquisition Core' comprising officers and experienced non-commissioned officers. He stated:

Suitably degree qualified professionals and specialists in engineering, communications, information technology, logistics, test and evaluation, and program and fleet management will stream into the Core at the appropriate time in their career...and undertake further professional post-graduate studies with return of service obligations.

They will then accept longer term assignments (typically four or five years) in CDG, DMO or perhaps DSTO, CIO, or DSG (who also need a cadre of experienced project managers) they might rotate into Sustainment roles so they understand the whole-of-life effects their acquisition decisions can make. And they would staff the crucial Capability management and monitoring function for each of the three Service Chiefs, thereby putting experienced uniformed people on longer term assignments into these critical areas.¹⁰⁷

In his view the continuity of experience would 'increase corporate memory, make Defence a more informed customer, and raise the quality of project planning and delivery'.

11.82 Looking specifically at DMO, Mr King, CEO DMO, would like to be able to attract, and pay more for, people with business and commercial skills, but accepted that he had to be realistic. Mr King noted that it would be difficult 'to isolate out DMO to be able to offer significantly higher salaries or significantly greater benefits than the rest of the Public Service or the rest of the military enjoy, to deliver those outcomes'. To his mind, the best thing DMO could do was aim to be 'a very attractive organisation'—'an organisation that attracts people from industry'.

105 Standing Committee on Foreign Affairs, Defence and Trade, *Blue water ships: consolidating past achievements*, December 2006, paragraph 16.8.

106 The Association of Professional Engineers, Scientists and Managers Australia, *Submission 36*, paragraph 8.

107 *Confidential Submission*.

11.83 The committee also notes that it is important when seconding military people to DMO, that they are placed where their skills and experience can be best utilised. A three-year posting, or less, in a managerial position for uniformed personnel is an inefficient use of otherwise very skilled and experienced people. The emphasis must be on finding the right people and placing them in the right position.

11.84 There is also the concern that the various agencies involved in procurement and sustainment activities are competing for the same skilled personnel. In considering the restructuring of the organisation, Defence must look closely at the skills required by the respective agencies and while maintaining strong contestability, ensure that specialists are located where they are most needed and not unnecessarily duplicated or spread too thinly throughout the organisation.

Conclusion

11.85 Having adequately skilled personnel is critical to enabling Defence to define capability requirements accurately, achieve value for money and to manage complex projects. Based on the evidence, however, the committee finds that currently the ability of Defence to mount a successful major defence equipment acquisition is thwarted by a shortfall in essential technical, engineering, project management and commercial capability. Indeed, the committee keeps returning to the view that, to ensure the success of an acquisition project, the right people are needed to be in the right place at the right time. This observation applies particularly to capability managers who need highly trained and experienced personnel who can: clearly articulate the requirements to be included in tender and contract documents; verify contractors' technical claims; and determine the necessary technical and regulatory requirements for accepting an asset into service.

11.86 The critical shortage of engineers and allied technical skills is a matter that requires immediate and serious attention. While there are many external forces undermining Defence's efforts to attract and retain skilled engineers and technicians, the committee is of the view that it is imperative for Defence to grow its engineering and allied skills base. Otherwise, its in-house knowledge will struggle to identify thoroughly future capability needs, to test and evaluate it against all other options, and advise government fully, accurately and objectively. The inadequacy of in-house knowledge will also make it difficult for Defence to oversee the project management once decisions are made, let alone operate it successfully and sustain it through life. This level of expertise is needed regardless of whether it is OTS or outsourced in any aspect.

11.87 As is explained in chapter 15, and suggested right throughout this report, the committee does not believe that the matrix management model currently in place for Defence can be supported any longer. As discussed above, one of the key reasons for that is the sheer waste of highly skilled technical resources engaged by each of the services, the DMO, DSG and CDG, often on the same project. Further, as also referred to, it not just dilutes the skill base, but undermines any concept of the internal separateness needed for genuine contestability.

11.88 The committee has heard extensive evidence from defence officials in both the Services, CDG and DMO, about their increased investments in skills, individual efforts to raise skill levels and better recruitment. It has heard of the lack of continuity and waste of skills from rotation of staff whereby their skills are not properly utilised as they are more consumed by clerical process. All this in the face of competing demands for the same skill sets in industry and right across the economy where technical skill is generally in chronically short supply. However, the committee does not believe the situation has changed one bit from its last substantial report in 2006 where skill shortages were also considered by the committee to be the critical flaw in the system.

11.89 Hence the committee's proposal for the consolidation of technical skills into each of the Services in a new organisational arrangement. Under this model, detailed in chapter 15, capability managers will be responsible for the primary technical input to all capability proposals, test and evaluation, in line with central policy, and all operational and sustainment management, especially with respect to large and complex single service capability, most notably in Air Force and Navy. Through this new management structure, the committee also seeks to strengthen contestability. The committee believes that through its proposed restructure it should be possible to :

- minimise the wastage caused by intra-organisational rotations;
- enable capability managers to rebuild their former technical skill base from the most sophisticated levels of modern defence technology through to operational and sustainment management;
- provide meaningful and rewarding skill paths for technically skilled personnel whether they be uniform or civilian, adding that stability and continuity of skill may be more available from the latter;
- provide complementarity of skills rather than the current internal competition;
- retain skilled staff on long term projects from conceptual development through to sustainment and disposal from within one organisation, fully and singly accountable;
- provide a stronger technical counter to industry in contract negotiations and management; and
- establish greater permanence to Defence's capacity to follow rapidly escalating technical complexity of defence capabilities around the world.

11.90 Equally, DMO with its reduced size and changed role should be better able to concentrate on becoming a centre of excellence for the high level skills needed in the processes of tendering, contracting and project management. Rather than capability managers posting people to DMO to conduct acquisition on their behalf, the DMO will post (or contract in) suitably qualified and experienced people to conduct relevant aspects of each acquisition project undertaken by the capability manager.

11.91 Accepting DMO's reduced and changed role and also the need to strictly sustain DMO and DSTO's independence, the committee also recognises the

implications this model has for the more civilian side of capability planning in DSG and CDG. The committee believes that DSG and CDG should have more strategic analytical skills to test the capability managers' development of Defence White Paper capability elements rigorously and independently, restoring the creative tension but free of competition for skills.

11.92 The committee is of the view that in considering the restructuring of the organisation, Defence must look closely at the skills required by the respective agencies and while maintaining strong contestability, ensure that specialists are located where they are most needed. As explained in chapter 15, the committee's main recommendations are intended to

- return responsibility to capability managers and make them accountable for decision-making and performance under their areas of authority;
- make DMO a streamlined and specialist acquisition agency;
- ensure that Defence's focus is on obtaining the right people with the right skills and experience and matching their skills with the right job; and
- ensure that Defence manages its skills base in such a way that agencies complement their skill requirements and do not compete for skills from the same pool of specialists.

Under the preferred model, capability managers are to be largely responsible for technical input before and after contract—that is at the heart of the new accountability the committee seeks to achieve.

Recommendation

11.93 The committee recommends that Strategic Policy Group and CDG should have more strategic analytical skills to test rigorously and independently the capability managers' development of the Defence White Paper capability elements, restoring the creative tension but free of competition for skills.

Recommendation

11.94 The committee recommends that, after second pass, capability managers have sole responsibility for acquisition projects, supported by staff seconded through the DMO, as well as maintaining relationships with contractor and sub-contractors.

Recommendation

11.95 The committee recommends that the government ensure that the DMO has the funds, means and government support necessary to consolidate and build on the efforts already underway to develop its multidiscipline skills base with the ultimate goal of achieving a world-class acquisition community.

Recommendation

11.96 The committee recommends most strongly that the organisational changes specified in the recommendations dealing with skills be adopted, and that the streamlining and consolidation of skills identified be the primary focus and outcome in securing that change.

Chapter 12

Technical analysis and test and evaluation

12.1 Proponents of OTS acquisition have highlighted that the selection of developmental products is a source of added complexity and greater uncertainty to an acquisition project, thereby increasing the risk of problems emerging during the procurement process. The committee observes that not only has this view led to the current preference for OTS acquisition expressed by many in government, Defence and the media, it may well have given rise to the increasing practice of manufacturers claiming that products are OTS when in fact they turn out to be developmental. Witnesses have presented numerous cases whereby the expectation that a procurement activity is OTS has led Defence to believe that a product is more mature or an outcome more predictable than experience (or an experienced review) would indicate. The conspiracy of optimism, referred to by a number of witnesses, appears to have led Defence to undervalue the role that developmental test and evaluation can play in the early stages of the acquisition cycle to identify and analyse risk in a quantifiable and defensible manner.

12.2 The committee also notes observations made by the Helmsman Institute suggesting that the complexity of some Defence projects was so high that they were 'placed at risk of never delivering the required capability, and failing to work'.¹ This has proven to be true even for some projects that were presented to be OTS, such as the MU90 where integration across a number of platforms was compounded even further by a decision to constrain phasing to line up with other projects (for example JASSM on AP3). It has also proven to be the case where other purchasers withdrew, leaving Australia holding more of the risk. There is a moral hazard faced by industry and CDG in that both parties have an incentive to support the view that a particular technological reach or level of integration with other weapons systems is achievable.

12.3 The committee notes that this conspiracy of optimism may have tended to crowd out or ignore dissenting voices that could alert Defence to the true extent of capability, technology, integration and certification (hence cost and schedule) risk represented by a proposed project.

12.4 In the previous chapter, the committee referred to the importance of Defence being a knowledge-based organisation: of having a deep understanding of the products it intends to purchase; and of the critical importance of having the right people able to ask the right questions. It is particularly important to note that the problems experienced by some projects were due to an underestimation of the amount of developmental work required. This lack of knowledge about the technical maturity of a capability raises the question about the analysis undertaken of the proposed project,

1 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [10].

and highlights to the committee the absence of early test and evaluation conducted by qualified ADF T&E practitioners as part of a structured risk identification process. In this chapter, the committee uses test and evaluation as a means of assessing the quality of analysis underpinning Defence's capability development process.

Off-the-shelf purchase

12.5 According to Pappas, technical risk accounts for more than 50 per cent of post approval slippage in projects approved after the Kinnaird review.² Many analysts, advisers and Defence and industry personnel familiar with defence procurement recognise that purchasing off-the-shelf can reduce the risk of things going wrong. Usually, the costs are known and the performance is proven.³ The government endorses these views. The 2009 White Paper and Defence's procurement manual make clear that off-the-shelf solutions to Defence's capability requirements 'will be the benchmark against which a rigorous cost-benefit analysis of the military effects and schedule aspects of all proposals will be undertaken'.⁴ As noted, in the previous chapter, this discipline while necessary to limit the developmental risks of service wish lists, restricts the need for industry locally to grow engineers through developmental activities. It has also unfortunately been used as a rationale to limit the same development of skills with Defence, both at the high tech end of capability assessment, and for operational and sustainment activities. The longer term effect is that Defence has fewer qualified people able to test and evaluate thoroughly information provided by industry early in the procurement process, especially where it is not all that it is marketed to be (i.e. the system is still really developmental or that the level of integration sought with other platforms may in fact be difficult to achieve).

12.6 It does not automatically follow that MOTS requires sustainment to be outsourced either domestically or overseas. Such decisions should depend on the normal costs and benefits, local industry capacity, and any strategic needs for self-reliance. Regardless, there must be in place within Defence a cadre of technical skill to manage properly both procurement and sustainment with assured continuity, integrated organisationally under single line accountability, drawing on a superior skill base supported with career paths, and without the risk of complete dependency on suppliers.

2 Department of Defence, *2008 Audit of the Defence Budget*, April 2009, p. 76.

3 See for example, Mr Bruce Green, *Submission 20*, p. 3, *Defence Procurement Review 2003*, August 2003, p. 15 and Department of Defence, *2008 Audit of the Defence Budget*, April 2009, p. 9.

4 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, paragraph 16.17.

Possible secondary risks

12.7 Although recognised as an effective way to reduce risk, purchasing OTS may introduce secondary risks that need to be assessed, treated, monitored and reviewed. Miller Costello and Co noted that a MOTS procurement can be 'either a model for risk management or it can disguise risk and lead government into painfully bad decisions'.⁵ So while OTS may initially be the preferred option, it may also pose significant risks that involve:

- modifications that may be necessary to meet Australian standards and operational conditions (yet perversely the emphasis on OTS, and therefore funding and involvement of agencies, may preclude adequate planning for this to occur);
- the integration of an OTS purchase into the ADF's existing and anticipated future capability;
- issues related to the sustainment and upgrading of the asset throughout its anticipated life and decommissioning and the associated costs; and
- medium to long term degradation of ADF's capacity to be a smart customer.

12.8 With regard to the last dot point, the committee notes that OTS may be purchased under terms that preclude any ADF unique modifications which may further reduce the opportunities where Defence can grow and sustain skill sets such as engineering, certification, T&E and R&D, and increase dependency on overseas suppliers.

12.9 Other witnesses similarly underscored the caution Defence needs to exercise when purchasing an OTS product.⁶

12.10 Defence also noted the limitations of an OTS purchase. It acknowledged that while OTS equipment minimises procurement risk, such equipment would 'not always meet the needed long-term capability requirement'. It stated further an OTS may not readily integrate with other capabilities in service; may not always be available; may not suit Australia's geographic and strategic circumstances; and/or may not be available in a timeframe that allows Australia to avoid gaps in its defence capability.⁷

12.11 Despite this awareness of possible technical complications associated with OTS, decisions have been taken on such purchases that clearly indicate no robust consideration was applied to such risks. Indeed, one of the identified causes of

5 *Submission 30*, p. 3.

6 For example, the Royal Institution of Naval Architects highlighted the importance of taking into account Australian conditions when it comes to ship design. *Submission 18*, p. [6].

7 *Submission 21*, p. 6. Also, in its response to the Mortimer Review, Defence accepted that there would be 'many occasions where modifications would be required in order to for example, meet Australian regulations and to make the equipment interoperable with the rest of the ADF and with allies'.

problems in defence procurement has been the underlining assumptions about products purchased off-the-shelf. The Helmsman Institute noted:

A number of projects started with the assumption that as a product was being offered as an existing design by a supplier, that the product was 'Off the Shelf'. The approach that was then applied assumed that the product could move into mass production immediately. Helmsman believes that true 'Off the Shelf' approaches can only be used if the products have achieved a high volume production rate and are in service in significant numbers in military service, and will only have limited customisation to fit local regulatory requirements.

All other projects need to assume that high levels of testing and evaluation will be required for testing and acceptance given the ADF regulatory environment. Helmsman believes that some of the highest complexity added to projects was that created by 'First of Type' or 'Early in Type' products being treated as 'Off the Shelf'. The unplanned need for substantial certification, systems integration, design and modification created addition complexity in stakeholder management, cultural clashes and journey complexity.⁸

12.12 Accordingly, even an apparently straightforward purchase requires a deep knowledge of the product.⁹ Thus, with OTS products, Defence needs the capability to exercise a rigorous test and evaluation regime in order to understand fully the maturity of the capability it intends to acquire. Clearly then, for customised purchases and developmental projects the need for sound and comprehensive analysis is even greater. For example, the committee has referred to the conspiracy of optimism where both industry and the customer are drawn toward the leading edge technology. The danger is that 'an ambitious set of specifications' could be locked in before the associated risks are properly identified and understood.¹⁰ Mr Bruce Green noted that going beyond the 'leading edge to the bleeding edge of technology is a recipe for disaster as these types of projects just bleed money'.¹¹

Analysis—test and evaluation

12.13 Kinnaird fully appreciated the central role of analysis in defence procurement practices. In his view, there must be:

- detailed analysis of the options to achieve a required military effect before adopting a platform-based solution;

8 The Helmsman Institute, *A Comparison of Project Complexity between Defence and other Sectors*, public release version, p. [11].

9 See for example, ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 28 and *Submission 20*, p. 3.

10 Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 10.

11 *Submission 20*, p. 2.

- a higher proportion of project funds spent on early analysis to improve project outcomes, which would represent an investment that can return dividends in terms of greater certainty in regard to costs and a better understanding of project risks; and
- rigorous analysis of technology, cost and schedule risks, backed by external verification, which is essential before any project is put to tender.¹²

12.14 Mortimer also recommended that 'any decisions to move beyond the requirements of an off-the-shelf solution must be based on a rigorous cost-benefit analysis of the additional capability sought against the cost and risk of doing so'. He stated that this analysis must be clearly communicated to government so that it is informed for decision-making purposes.¹³ For projects that are not genuine MOTS, Pappas similarly recommended that 'improving technical risk management practices would help reduce schedule and cost escalation'. Specifically, this would involve:

- greater investment of project expenditure in de-risking projects;
- not progressing projects until they reach the required level of technical maturity;
- separating technology development from product development; and
- greater involvement of technical scrutineers (who need developmental activities if the ADF is to grow this skill) and better use of a risk register.¹⁴

12.15 Many witnesses underscored the importance of good quality and 'systematic independent analysis'.¹⁵ In this regard, the ANAO noted that 'International experience shows that adopting a systems engineering approach in concert with program management of a high order offers the greatest likelihood of success for the delivery of complex and large scale projects, including Defence major capital acquisitions'.¹⁶ It explained:

Systems engineering involves the orderly process of bringing complicated systems into being through an integrated set of phased processes covering

12 *Defence Procurement Review 2003*, August 2003, p. 48.

13 Defence Materiel Organisation, *Going to the Next Level*, the report of the Defence Procurement Sustainment Review, 2008, p. 20.

14 Department of Defence, *2008 Audit of the Defence Budget*, April 2009, p. 80.

15 See for example, *Submission 2*. Dr Brabin-Smith argued that Defence should be subject to more impartial and informed analysis, not less. Dr Davies stated that a developmental capability requires 'a structured approach that allows dispassionate assessments to be made at each critical step of the process' in Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 9.

16 *Submission 22*, p. 2.

user requirements definition, system design, development and production, and operational system support.¹⁷

12.16 People familiar with the complexity of defence acquisitions appreciate the critical role of test and evaluation (T&E) activities in providing information about risk and empirical data to validate models and simulations.¹⁸ Defence similarly recognises T&E as an integral part of the systems engineering process for identifying and reducing technical risk in the acquisition of defence equipment, though this recognition is on paper and not necessarily in practice.¹⁹ The focus on OTS however has led many to believe that Defence only requires a T&E capability at the end of the process: i.e. operational T&E as part of introduction into service. What numerous Defence projects have shown however is that Defence must sustain, develop and employ personnel with experience in developmental T&E in order to conduct pre-contract analysis with rigour.

Early testing

12.17 T&E is a process that can be applied at the initial feasibility stage of a project and continues through to its delivery into service. Clearly, T&E at the feasibility stage helps ensure that a capability will operate as intended and can be produced in line with cost, schedule, and quality targets.²⁰ This observation about the importance of early analysis is based on wide project experience.²¹ For example, with regard to technology risk, the GAO noted:

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- 17 See ANAO Audit Report No. 57 2010–11, *Acceptance into Service of Navy Capability*, 2011, paragraph 10.
- 18 Before the Senate Armed Services Committee, Mr Carter pointed to the importance of 'rigorous developmental and independent operational test and evaluation to provide accurate and objective information on the capabilities and limitations of defense systems...' Quoted in J. Michael Gilmore, Director, Operational Test and Evaluation, Office of the Secretary of Defense, 'Key Issues Causing Program Delays in Defense Acquisition', *ITEA Journal*, vol. 32(4), December 2011, p. 391. See also, *Defence Procurement Review 2003*, August 2003, p. 20.
- 19 Department of Defence, *Defence Test and Evaluation Roadmap, 2008*, Canberra ACT, p. 6.
- 20 See for example, GAO, 'Observations on Weapon Program Performance and Acquisition Reforms', Statement of Michael J. Sullivan Director, Acquisition and Sourcing Management, before the Subcommittee on National Security and Foreign Affairs, Committee on Oversight and Government Reform, House of Representatives, 19 May 2010, p. 9.
- 21 J. Michael Gilmore, Director, Operational Test and Evaluation, Office of the Secretary of Defense, 'Key Issues Causing Program Delays in Defense Acquisition', *ITEA Journal*, vol. 32(4), December 2011, p. 391. He indicated that earlier and more robust T&E may reveal problems and solutions at a time when they would be less costly to fix, or allow decision makers to cancel or restructure the project'. He stated: 'The operational test should not be a time for problem discovery, nor should it be a time for resolution of lingering problems left over from developmental test and evaluation'. Director Operational Test and Evaluation, *Financial Year 2011, Annual Report*.

When technology risks are not managed early, an acquisition program can run into difficulties in later phases. Having a feasible, stable preliminary design for a weapons program early in the acquisition process is also important in lessening risk...by demonstrating that a product's design can meet customer requirements, as well as cost, schedule, and reliability targets.²²

12.18 Supporting this contention that the customer cannot leave all design activities to the manufacturer, the GAO found that in recent years programs that have held critical design reviews reported higher levels of design knowledge. The committee notes the Haddon-Cave Review (UK) which found that a critical design review is only of value if the stakeholders involved (including the customer) have the necessary qualifications and design/certification experience to understand and challenge the information presented to them.

12.19 Witnesses similarly referred to the value of early research and development.²³ The Australian Business Defence Industry Unit noted that in order to avoid problems, a project must be set on the right course from the start. It suggested that 80 per cent of problems occur in the first 20 per cent of a project's life.²⁴

12.20 Air Marshal Harvey agreed with the proposition that there is a case for conducting detailed technical risk analysis of a proposed capability at an earlier stage. He indicated that Defence do so, though not initially, in a formal technical risk analysis sense. According to Air Marshal Harvey technical risk analysis supports both first pass and second pass and forms part of the capability gate review board.²⁵ He made clear that DSTO follows 'a very rigorous process' for its technical assessments for first and second pass.²⁶

12.21 The committee notes that the Air Marshal was referring to the process and not the capacity to analyse relevant risks (technology, integration, capability and certification). The committee has already noted the difference between process and

22 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 3.

23 See for example, Australian Industry Group Defence Council, *Submission 10*, p. [2]; *Submission 20*, pp. 1–3; *Submission 22*, paragraphs 18–19 and Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, pp. 11–12. During the committee's visit to South Australia and Western Australia, officials told the committee that early test and evaluation minimises the likelihood of problems emerging later in the process. They also emphasised the importance of understanding and stipulating the level of testing required during production and trials in order for the capability to be accepted into service and being clear in specifications and the testing requirements.

24 *Submission 6*, p. 5.

25 *Committee Hansard*, 7 October 2011, p. 18.

26 *Committee Hansard*, 7 October 2011, p. 18.

application: i.e. what the manuals prescribe and what actually happens, as noted on many occasions by ANAO. Also, Air Marshal Harvey referred only to DSTO advice. The visit to the Aerospace Operational Support Group at RAAF Edinburgh highlighted to the committee that Defence has other centres of expertise that should be more effectively utilized early in the procurement process to identify the full range of risks presented by a particular solution.

12.22 The committee notes that a capacity to conduct developmental T&E is the same skill set as that needed to conduct effective risk identification and analysis. Proponents of OTS acquisition rightly point out that the original equipment manufacturer does not require ADF to have a developmental T&E capability—that it is industry's job to provide people to run that part of the process. But without a developmental T&E capability, Defence cannot assess the veracity of what they are being told or shown, either in absolute terms or within the certification and training frameworks required by Australia. The number of products accepted as OTS when they were in fact developmental has a strong correlation to situations where T&E expertise was not available, not engaged or not listened to.

Implementation

12.23 Ultimately, under the current process, the Chief Defence Scientist is responsible for the provision of technical risk assessments, technical risk certifications, the development of project S&T plans and for providing other S&T support as required.²⁷ As one of the fundamental documents that support the first pass approval, the TRA forms part of the Capability Proposal First Pass and needs to be in place.²⁸

12.24 The Project Science and Technology Advisor, a DSTO officer, prepares the TRA for second pass approval. It is intended to allow Defence to advise government on the areas and levels of technical risk of the options being proposed for acquisition. The Chief Defence Scientist signs off on the Technical Risk Certification which is included in the ministerial or cabinet submission.

12.25 There is no doubt that the procurement system should be sufficiently robust to ensure that information on the readiness of a platform for operational service is known. But as noted in chapter 5, one of the problems with risk management is the lack of awareness or the unresponsiveness of some personnel to emerging risk. Evidence suggested that despite Defence's recognition of the importance of test and evaluation, Defence does not pay sufficient attention to this most important aspect of risk management.

27 Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.2.13(i).

28 Air Marshal Harvey, *Committee Hansard*, 7 October 2011, p. 18.

12.26 For example, notwithstanding Kinnaird's recommendation for small amounts of early up-front investment to quantify and minimise risk in complex projects, some witnesses were concerned that that was not happening.²⁹ In his review of the latest Major Projects Review, Air Commodore (retired) Bushell stated:

...the primary cause of project risk lies in the operational and technical areas of the project, and that these (largely potential and manageable) risks demand a very different approach, an approach requiring skills and competencies different from commercial (contract terms and conditions) management. Effective capability management requires that all capability functions—operational, systems and equipment engineering, test and acceptance functions and support requirements, including their associated risks, must come under tight Project and Systems Engineering management, and that commercial management must be constrained to contract management that supports project management objectives.³⁰

12.27 In his view, the difficulties that are endemic throughout Defence's major projects indicate that 'the DSTO's capability development, test and acceptance and technical risk assessment and management input have not been adequate'. According to Air Commodore Bushell, such tasks 'were historically, and still are, a natural extension of the fundamental responsibility of the Capability Managers for raising, training and sustaining force'. He argued that DSTO has a role to play, but 'it is one that supports the Capability Managers, not replacing or double-guessing them'.³¹

12.28 In the previous chapter, the committee highlighted the overall shortage of skilled engineers in the area of defence procurement, especially in the Services, and most notably the hollowing out of such skills in the Navy. This shortage has serious implications for test and evaluation.

12.29 Air Marshal Brown gave the AEW&C as 'a classic example' of where there was inadequate T&E. He named two core things that were not done correctly on that project. The first was the contractor's decision to use emulators instead of real equipment on the systems integration lab. He explained that this decision meant that 'a lot of the integrations problems, instead of occurring inside the lab, occurred when we built the aeroplane'. According to Air Marshal Brown:

That decision was objected to by the Commonwealth quite strenuously at the time, but it was taken on a cost basis by the contractor. He decided that that was one way to save money, and they were confident in their design.³²

29 Dr Andrew Davies and Dr Mark Thomson, *Submission 8*, p. [2]; Submarine Institute of Australia, *Submission 9*, pp. 1–3; and Mr Bruce Green, *Submission 20*, pp. 1–2.

30 *Supplementary Submission 3D*, E.J.Bushell, Review of Defence Materiel Organisation (DMO) Major Projects Report (Major Projects Review) 2010–11, 2 February 2012, p. [9].

31 *Supplementary Submission 3C*, p. 12.

32 *Committee Hansard*, 5 October 2011, p. 34.

12.30 He then referred to the AEW&C program's six-month development, test and evaluation program. He informed the committee that:

If you benchmark that against any other similar sort of highly developmental program, you will find that most people allow about three years. Guess what? That is about the time that it has taken us to do...My view of that program is that we have lost time but we are going to end up with the capability we contracted for.³³

12.31 During its visit to South Australia, the committee learnt of another example of inadequate T&E. The committee was told that Defence believed the MRTT to be effectively an OTS purchase, with all indications in the tender process pointing to a purchase with a proven performance record for each of the major systems involved. Late in the program, however, the Australian test team needed to be boosted in numbers in order to get the data it needed to have the aircraft accepted into service. The committee also heard that Defence did not articulate clearly enough the Air Force's certification requirements in the contract. Finally, Defence did not manage its observation of the overseas tests at all well, resulting in a gap in its understanding of the tests. Defence did not make early investment in developmental T&E qualified staff on the resident project team a sufficient priority.

12.32 The committee's findings on T&E in defence acquisition projects are consistent with those of the broader issue of risk management in Defence's procurement of major capital equipment. Defence believes that its procedures are appropriate and should ensure that up front analysis followed by systematic test and evaluation activities would prevent unexpected major technical difficulties surfacing later in a product's build. The type of problems that emerged with the Super Seasprite, Landing Watercraft, Wedgetail, Tiger, the MRTT and the MRH-90 Helicopter suggest otherwise.³⁴

12.33 If in fact DSTO is solely responsible for technical risk analysis as has been asserted, then the committee suggests that Defence fails to understand the full gamut of technical risk analysis and management from project inception to completion. If in fact CDG is no longer required to fund a preview evaluation by a qualified developmental test team, the committee's concern is amplified. The difference in quality of risk analysis from a CDG officer without relevant experience who is following a 'more thorough checklist of questions' as compared to that provided by a subject matter expert drawing on experience seems to be lost on Defence.

12.34 The committee has considered the underlying causes for the discrepancy between written guidelines and procedures and the implementation of sound risk management practices. The same causes are evident with Defence's T&E regime—

33 *Committee Hansard*, 5 October 2011, p. 34.

34 See chapter 2 which provides details on these projects. See also Mark Thomson, Andrew Davies and Chris Jenkins, 'Three views of risk: Selecting and acquiring military equipment', ASPI Special Report, November 2011, issue 42, p. 12.

non-compliance with policy and guidelines and unawareness or unresponsiveness to risk. As an example, the ANAO found that in a number of cases, the description of technical risk for project proposals did not provide sufficient guidance for decision-makers, or provide confidence that an adequate risk assessment had been conducted.³⁵ The committee has already referred to the observation made by Pappas that DSTO's technical risk assessments were not always paid the respect they warranted.³⁶ As the examples in chapter 2 clearly attest, the same observation can be applied to risk assessed by other Defence T&E personnel.

12.35 The lessons to be learned from recent projects underscore the need for improvement in test and evaluation. Such observations have particular relevance for defence projects still in the early stages of their capability development especially the need for up-front investment in research and analysis.

Resourcing test and evaluation

12.36 The committee notes that Kinnaird found that greater resources needed to be allocated to conduct comprehensive and rigorous T&E programs as part of project funding.³⁷ In this regard, the committee highlights a stark message that came out of the committee's site visits to South Australia:

An organisation cannot support high technical capability without the ability to test it. If it does complex things, it should set requirements but importantly it must understand the skills set it needs to validate requirements.

12.37 Dr Davies stressed a recurring theme throughout this inquiry that improving the quality of analysis is needed rather than improving the quantity of process and of information.³⁸ He also acknowledged that it takes a long time to grow that analytical capability. In his view, Defence, in the first instance, might have to rely on external contractors with expertise such as the RAND Corporation and Access Economics and use this expertise at least until in-house analytic capability can be built up.³⁹

12.38 In this regard, the committee notes the challenges facing the capability managers in developing this level of expertise which to date, only exists in a formal sense for the aerospace domain. For example, Service chiefs are responsible for the initial officer training and specialist training (engineer, pilot etc) and for the 2–3 years of operational experience. Each individual T&E practitioner requires a further year of

35 ANAO Audit Report No. 48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, paragraphs 5.24, 5.35 and 5.52.

36 See also references to the results of a survey of Defence industry systems engineering and systems integration capability and Mr King's statement on pp. 185–6.

37 *Defence Procurement Review 2003*, August 2003, p. 48.

38 *Committee Hansard*, 12 August 2011, p. 14.

39 *Committee Hansard*, 12 August 2011, p. 14.

masters level full time training at a cost of around \$1 million. After training, there is normally a period of 1–2 years of supervised T&E conduct and involvement in the ADF airworthiness and certification systems before an individual would be deemed competent to support DMO in a project role away from the test centre. Thus T&E personnel would need to enter the training pipeline several years well in advance of a project's need. This capacity therefore has to exist ahead of the project but given the high cost of training, should be an integral part of a consolidation capability procurement and sustainment team under the direct control of the capability manager, in line with the committee's preferred organisational model.

Long-standing concern

12.39 In its report on materiel acquisition and management in Defence, tabled in March 2003, the committee expressed a lack of confidence in Defence's 'capacity or will to address T&E concerns seriously'. At that time, Defence was preparing a revised T&E policy. The committee was particularly keen to ensure that the policy would be fully integrated (planned and funded) with the capability development process; provide for T&E to be carried out in an independent fashion; and embed a 'cradle to grave' philosophy.⁴⁰

12.40 Five years later, in its 2008 T&E Roadmap, Defence highlighted a raft of shortcomings in Defence's T&E pointing to a need for greater funding, improved training and attracting and retaining skilled and experienced personnel. They included:

- many existing Defence T&E facilities were approaching (or had reached) the end of their useful life and without significant upgrade and investment, they would be unable to adequately meet future weapon system or joint capability T&E requirements;
- there was no coordinated approach at a Defence level to identify T&E facilities necessary to support the DCP;
- spending needed to be prioritised to ensure that the appropriate T&E facilities exist or are accessible...;
- Defence would need to develop a T&E approach that enables the application and coordination of T&E across platforms and environments;
- inadequate funding—there are constant pressures on projects to under-resource T&E activities and funding for reworking and regression testing, which appears to be inadequate in many current projects;
- significant gaps in competency recognition, which potentially made T&E less attractive than other career paths;
- no formalised career management of personnel with T&E expertise and experience;

40 Senate Foreign Affairs, Defence and Trade References Committee, *Material acquisition and management in Defence*, March 2003, paragraphs 6.18 and 6.34.

- most training was 'on the job' and there was high staff turnover as well as difficulty recruiting and retaining technical officers and engineers;
- limited, and in some instances, a complete lack of T&E expertise in some specialist capabilities within Defence or Australian industry;
- while Maritime and Aerospace T&E was generally well conducted, the Land environment did not have an organisation responsible for undertaking OT&E and acceptance into service;
- at the combat environment and Joint Force Operating levels, Defence lacked both organisations and resources to manage, coordinate and undertake T&E to ensure the integration of capabilities through a common methodology that was based on, and aligned with, relevant standards and procedures;
- information to assist in the development and conduct of T&E activities was often difficult to obtain; this was often the case when the equipment was procured from foreign organisations;
- current approach to the T&E during the acquisition phase often appeared to have industry performing T&E activities in isolation from the Commonwealth. (The committee understands that sometimes because of cost pressures and limits on overseas led projects choosing not to fund the posting of T&E practitioners to the resident team location (often overseas) contract negotiations do not provide for Defence T&E staff participation);
- project schedules were tight, placing pressure on all aspects of the project including the conduct of effective T&E, particularly the critical elements such as testing of key FIC related elements pertaining to the measures of suitability; and
- it would be more efficient if Defence adopted a model where T&E subject matter experts were engaged during the concept and requirements development stage for each project to assist with the specification of project T&E requirements (for example, Air 87).⁴¹

12.41 The Roadmap indicated that steps would be taken to address these findings.

12.42 Vice Admiral Jones, the sponsor for T&E, recognised that the Roadmap was 'quite a significant document' though he noted that there were 'a lot of utopian views in it and a bit of nirvana'.⁴² This observation appears to be at odds with the clear articulation of the need for a robust T&E capability in Defence from previous reviews, reports and witness statements which lend weight to the recommendations of the 2008 T&E Roadmap. Vice Admiral Jones referred to work done since the publication of the Roadmap which has resulted in:

41 Department of Defence, *Defence Test and Evaluation Roadmap 2008*, pp. 30, 31, 33, 35, 37, 39.

42 *Committee Hansard*, 13 June 2012, p. 43.

- a much more coordinated approach to T&E within Defence and the creation of an Australian Defence Test and Evaluation Office (ADTEO) within the Capability Development Stakeholder Group (CDSG);
- issuing unifying policies on T&E, acceptance into operational service amongst the Services and the conduct of trials;
- the formation of a T&E community within Defence with annual meetings of T&E principals; and
- a 'big increase' in pre first and pre second pass trials.⁴³

12.43 In particular, he referred to the early test planning directorate, a group of six individuals, who specialise in writing test concept documents which they write in conjunction with the relevant T&E organisations. Group Captain Keith Joiner, Director General Test and Evaluation, explained further:

We are tightening that journey of discovery process there, so we have introduced a large number of additional questions into the test concept document writing guide as a result of some of the experiences we have had bringing into service military off-the-shelf and commercial off-the-shelf. That is delivered annually to the T&E principals, so it gets input from all domains, not just land and joint.⁴⁴

12.44 The committee notes with concern that there appears to be a significant investment in form and process but not necessarily in the professional qualifications and work opportunities to gain relevant experience that will—over time—lead to real capacity to identify and analyse risk prior to contract signature.

12.45 Mr King accepted that at one time Defence 'did too much trusting and not enough verification' but was also of the view that Defence had 'moved on quite a distance from there'. Even so, he thought there was a role 'for improved analysis and testing of claims of maturity'.⁴⁵ Based on the committee's 2003 report, the 2008 Roadmap and more recent evidence, the committee is not convinced that Defence is moving quickly or decisively enough to address the matters raised in 2003 and 2008.

12.46 For example, the committee understands that ADTEO largely coordinates or conducts operational T&E for the land domain and coordinates some joint OT&E activities. However, the committee is also advised that its staff have no capacity for developmental T&E and the organisation plays no role in the management of the ADF's only developmental T&E agencies— Aircraft Research and Development Unit and Aircraft Maintenance and Flight Trials Unit. Their regulations are contained in ADF airworthiness regulations maintained by Air Force. If this is the case then the

43 *Committee Hansard*, 13 June 2012, p. 36.

44 *Committee Hansard*, 13 June 2012, p. 37.

45 *Committee Hansard*, 13 June 2012, p. 29.

committee believes that significant rationalisation of both T&E policy and practice is required.

12.47 Moreover, looking ahead to where Defence needed to go, Vice Admiral Jones indicated that there would be a defence manual 'which all the services and DMO and DSTO and CDG have to sign up to'. He explained that in the manual 'we actually have to start to chart where we are going to go with the workforce and how we are actually going to grow and sustain the workforce'.⁴⁶ According to the Vice Admiral, standardisation and professionalisation remains an area where 'there is a lot of work that we have to do'. He stated:

At the moment we are in this situation where we have started to really get a much greater appreciation across the board of the importance of T&E, so that has been a big change probably in the last five years and we are seeing the value of that objective data for our decision making. But what we have to...have is a sustainable path for our workforce, and we see this next iteration and development of a manual as an opportunity whereby we can tease some of those issues out and then actually have some goals to set for ourselves to get to where we need to be.⁴⁷

12.48 The committee notes that Defence was reviewing and developing a T&E concept paper and policy in 2003 and that its T&E Roadmap was produced in 2008. Now, Defence is still talking about producing a manual—that is about process. In this regard, the Haddon-Cave Review into the loss of the RAF Nimrod aircraft has some salutary advice for Defence:

The instinctive reaction of many governmental organisations to problems is the creation of more complexity, not less, and the 'bolting on' of more process, procedures, boards, committees, working parties, etc rather than stripping away the excess and getting down to the essential elements. The net result for the MOD was, unfortunately, an increasingly complicated safety and airworthiness system which was accompanied by a significant weakening of airworthiness oversight and culture during the period leading up to the loss of XV230 in September 2006. Over the past decade, responsibility for risk and risk management has been divided, dissipated and dispersed. Risk has effectively been 'orphaned' by being made part of an extended family, with everyone involved but no-one responsible.⁴⁸

12.49 In the committee's view, while the people who own the process are talking about manuals, those with the responsibility and competence are not being heard.

46 *Committee Hansard*, 13 June 2012, p. 43.

47 *Committee Hansard*, 13 June 2012, p. 43.

48 Charles Haddon-Cave QC, *The Nimrod Review*, an independent review into the broader issues surrounding the loss of the RAF Nimrod MR2 Aircraft XV230 in Afghanistan in 2006, 28 October 2009, paragraph 3.139.

Conclusion

12.50 Defence would have the committee believe that the organisation has an integrated and effective T&E regime operating throughout the capability life cycle to minimise the chance of unexpected technical difficulties arising. The T&E activities are meant to ensure the delivery of a fully functioning platform with safety-critical systems meeting all requirements. In practice, however, the failings identified in some major projects stem from poor quality or inadequate analysis. The committee reinforces the message that early investment in analysis is an indispensable component of an acquisition. The Service Chiefs, in particular, as the ultimate users of an acquisition, must have the personnel with the skills and experience to stipulate from the early stages of a capability development cycle the test and evaluation activities required before they will accept an asset into service. Hence the committee's concern in principle about the real responsibility of the capability manager.

Recommendation

12.51 The committee recommends that the government make a long-term commitment to building technical competence in the ADF by requiring Defence to create the opportunities for the development of relevant experience.

Recommendation

12.52 The committee recommends that capability managers should require their developmental T&E practitioners to be an equal stakeholder with DSTO in the pre-first pass risk analysis and specifically to conduct the pre-contract evaluation so they are aware of risks before committing to the project.

12.53 Given that the capability to conduct this T&E and analysis needs to be extant prior to the commencement of any given project, the committee is concerned that cost pressures will lead individual services and projects to degrade this capability over time.

Recommendation

12.54 The committee recommends:

- **the immediate finalisation of central defence policy on T&E to be implemented by capability managers in line with the committee's recommended shift of full accountability for capability managers for all technical assessment of capability procurement and sustainment (independently assessed in conjunction with DSTO);**
- **full responsibility for the implementation of prescribed T&E processes be assigned to capability managers for all procurement activity from inception through to acquisition and sustainment; and**
- **each capability manager should ensure adequate skilled resources to oversee all T&E activity in line with central policy, as part of all acquisitions, including MOTS, as part of the capability managers' total responsibility for procurement, but prior to as well as after second pass.**

Recommendation

12.55 The committee recommends that Defence build on the capability already extant in aerospace to identify training and experience requirements for operators and engineers in the land and maritime domains and apply these to ADTEO. Capability managers will need to invest in a comparable level of training to enable their personnel to conduct (or at least participate in) developmental testing. The intention is to provide a base of expertise from which Defence can draw on as a smart customer during the first pass stage and to assist in the acceptance testing of capability.

Recommendation

12.56 The committee recommends that Defence mandate a default position of engaging specialist T&E personnel pre-first pass during the project and on acceptance in order to stay abreast of potential or realised risk and subsequent management. This requirement to apply also to MOTS/COTS acquisition.

Part VI

Defence industry

The Australian Government recognises that Australia's defence industry has an important role in delivering and sustaining the ADF's capability. The White Paper makes clear that procurement, sustainment and industry support are 'critical to defence capability and operational effectiveness'. It stated:

The ADF requires a deep, diverse and secure supply chain to acquire and maintain the capabilities it needs, and Defence's procurement and sustainment systems must continue to be flexible and responsive as possible.*

In the following chapters, the committee considers the partnership between Defence and defence industries. It looks at industry's skill base, its access to information on Defence planning and scheduling for major projects, the workflows generated by defence projects, and the relationship between Defence and industry including industry's early engagement.

*Department of Defence, *Defending Australia in the Pacific Century: Force 2030*, Defence White Paper 2009, Commonwealth of Australia, 2009, paragraph 16.1.

Chapter 13

Sustaining and building Australia's defence industry

13.1 Released in July 2010, the Defence Industry Policy Statement noted that a strong, successful and skilled Australian defence industry would be needed for Defence to deliver the future capability needed for the ADF.¹ The ambitious acquisition program set out in the White Paper will require Australia's defence industry to increase both its capacity—the size of its workforce—and also its technical expertise, particularly for projects such as the Future Submarine Project. This places increasing importance on how Defence's procurement decisions affect Australia's defence industry and Defence's role in helping industry to grow the capability and capacity to deliver *Force 2030*.

13.2 Australia's defence industry comprises a small number of Australian subsidiaries of global prime contractors, such as BAE Systems, Thales and Raytheon; ASC, a Government Business Enterprise;² and Australian SMEs. In this chapter, the committee considers the relationship between Defence and defence industries and the ways in which Defence assists industry in Australia to contribute to ADF capability.

Assisting Australian defence industry

13.3 In its submission, Defence noted that industrial capacity 'needs to be planned, built, managed and continually re-shaped—and industry must plan to ensure it can play its part'.³ As the sole purchaser of major defence capital equipment in Australia, Defence exerts considerable influence on the performance and viability of the domestic defence industry. Consequently, Defence cannot be a disinterested bystander of the national defence industry and should have 'a strong and enduring interest in the industry's success'. In the following section, the committee considers the ways in which Defence supports industry with an emphasis on industry's skills base, industry's access to information and workflows.

Skills in industry

13.4 According to Defence, Australia's defence industry currently employs approximately 29,000 people and supplies over \$5 billion worth of materiel and services to Defence each year.⁴ Defence has estimated that the defence industry workforce will need to grow to about 34,000 workers to meet the requirements of the

1 Department of Defence, *Submission 21*, p. 6.

2 All the shares issued in the capital of ASC are owned by the Minister for Finance and Deregulation.

3 *Submission 21*, p. 6.

4 Department of Defence, *Submission 21*, p. 6.

White Paper, with most of the growth required from 2020.⁵ Growing Australia's defence industry workforce, particularly its engineers, presents significant difficulties in light of the demands for engineers in the resource sector and the availability of skilled engineers within Australia.⁶ For example, a recent survey of Australian defence industry capability suggested that, given the projected staffing levels planned for five years' time, an impending problem loomed with the expected size and skill profile of the systems integrations and systems engineering workforce.⁷ The Future Submarine Project in particular will require significant increases in the defence industry workforce in both engineers and draftsmen over the next two decades.

13.5 The committee is aware of some of the difficulties faced by Australia's defence industry in attracting and retaining skilled engineers in the face of competing demands for those engineers from higher-paying resource companies. Additionally, as Mr Brent Jackson of Engineers Australia pointed out, the defence industry is also subject to further constraints with regard to their ability to attract engineers from overseas:

Where other companies, resource companies for example, can draw from migrant engineers quite freely, Defence is constrained somewhat by citizenship requirements and, of course, security clearances and such, which means that they largely have to rely on domestic growth to fuel their demand, which is of course a lot slower than just getting somebody in from overseas who is suitably qualified.⁸

13.6 Industry made the point forcefully that a skilled workforce takes time to build: that you cannot simply flick a switch and skilled workers can be found.⁹ Australia's naval shipbuilding industry demonstrates the difficulty for industry to acquire and maintain its skilled workforce.

Shipbuilding projects

13.7 Currently, the Air Warfare Destroyer (AWD) Program illustrates the challenges that industry faces in having the necessary capacity and skilled workforce ready to deliver complex projects on schedule.¹⁰ In this case, the BAE Systems

5 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 3.

6 Australian Industry Group Defence Council, *Submission 10*, p. 12. See also Engineers Australia, *Submission 32*, pp. 2–3.

7 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

8 Brent Jackson, Engineers Australia, *Committee Hansard*, 5 October 2011, p. 4.

9 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, pp. 4–5.

10 Innes Willox, Australian Industry Group Defence Council, *Committee Hansard*, 11 August 2011, p. 3.

shipyard in Melbourne could not cope with the construction work on the AWDs and building steel blocks for the Landing Helicopter Dock (LHD) ships. The first of the two Canberra-class LHD ships is expected to arrive in Melbourne in 2012 for further construction and internal fitout, with the second ship expected to arrive in 2013.

13.8 One of the challenges for the contractor was starting production for the AWDs from a cold start and with a reduced workforce. Following difficulties in engineering and construction of some of the first hull blocks, the Minister for Defence announced that the AWD Alliance had reallocated the construction of some blocks to other shipyards in Adelaide, Melbourne, Newcastle and Ferrol, Spain.¹¹

13.9 The Future Submarine Project will also test industry's capacity to deliver. The Project aims to replace the Collins Class submarines with 12 new submarines capable of travelling further, longer, more frequently and providing more capabilities than the Collins Class. The process of acquiring these submarines will be Australia's most complex defence procurement in history. According to the RAND Corporation, Australia will need a workforce of approximately 1,000 skilled draftsmen and engineers across industry and government for the Future Submarine Project.¹² The study suggested that while Australia has the requisite number of skilled engineers and draftsmen, many of them are currently employed on other commercial or naval programs, and few have experience in submarine design.¹³

13.10 The RAND study found that while it would be possible for Australia to grow its submarine-building workforce to levels required for the Future Submarine Project, the duration and cost of the program would be significantly increased if Australia did not bring in some submarine-experienced personnel from overseas.¹⁴ When factoring the demands from other programs, the data in the RAND study shows significant shortfalls in several key skill categories including naval architecture and combat systems.¹⁵

Defence Materiel Organisation and government initiatives

13.11 DMO has established several programs to increase the availability of skilled workers to the defence industry. These include training programs, such as the Skilling Australia's Defence Industry (SADI) program, the Defence and Industry Study Course, the Industry Skilling Program Enhancement Package, the Priority Industry

11 The Hon. Stephen Smith MP, Minister for Defence, Media Release, 'Changes to Air Warfare Destroyer Construction Program', MIN663/11, 26 May 2011, <http://www.defence.gov.au/minister/Smithtpl.cfm?CurrentId=11862> (accessed 2 January 2012).

12 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxiii.

13 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxvi.

14 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxvi.

15 RAND Corporation, *Australia's Submarine Design Capabilities and Capacities*, 2011, p. xxxix.

Capability Innovation Program, and internships and other programs targeted at students.

13.12 The SADI program was established in 2005 and is designed to assist the defence industry to address the shortage of skilled workers. It seeks to up-skill existing employees, to improve the quality and quantity of skills training in defence industry; and to generate additional skilled positions.¹⁶ The program provides funding for training to industry where training is linked to a defence capability need, and since its inception over 24,000 training places have been funded.¹⁷ The Minister for Defence Materiel announced in September 2011 that the government would provide \$14 million to 109 companies for over 4,000 training places in 2011–12.¹⁸

13.13 A number of submissions cited the SADI program as an important measure to help tackle the problem of securing skilled workers for the defence industry.¹⁹ The Australian Industry Group Defence Council suggested that funding for the SADI program be increased, as currently many companies that apply for assistance under the scheme miss out.²⁰

13.14 Defence's fluctuating demand for work affects industry's ability to contemplate future investment. In its submission, Sonartech Atlas argued that despite significant government initiatives in the form of programs such as the SADI program, 'extended and delayed procurement timelines can still have a negative impact on suppliers beyond recovering or offsetting cost'.²¹ It also noted that programs such as SADI need to be complemented by actual work experience that allows newly trained staff to consolidate and practise their skills.²²

13.15 In addition to the various DMO initiatives, in September 2011, the Minister for Defence Materiel announced the Defence Industry Workforce Strategy, which involves Skills Australia working with the DMO to prepare a comprehensive workforce strategy for the defence materiel supply industries by June 2012.²³ The strategy is intended to include an assessment of the preparedness of Australia's

16 Defence Materiel Organisation, 'Skilling Australia's Defence Industry (SADI) Program', <http://www.defence.gov.au/dmo/id/sadi/index.cfm> (accessed 9 January 2012).

17 Minister for Defence Materiel, the Hon. Jason Clare MP, 'Industry Feedback on Defence Skills Program', 20 September 2011.

18 Minister for Defence Materiel, the Hon. Jason Clare MP, 'Industry Feedback on Defence Skills Program', 20 September 2011.

19 Australian Industry Group Defence Council, *Submission 10*, pp. 5 and 12.

20 Australian Industry Group Defence Council, *Submission 10*, p. 13. See also Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

21 Sonartech Atlas, *Submission 13*, p. 3.

22 Sonartech Atlas, *Submission 13*, p. 3.

23 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, p. 1.

defence industry to compete for major defence projects. It is also to include recommendations on building and supporting the skills required in the defence industry with an aim to assist:

...better positioning Australia's Defence materiel supply industries to fully participate in emerging opportunities for Australian Government Defence procurements through ensuring the availability of a more skilled workforce.²⁴

13.16 Skills Australia's January 2012 discussion paper makes several important points, some of which have also been raised in submissions or witness testimony. These include:

- the need for better data to assess fully current capacity; and future needs in the defence industry;²⁵ and
- the likelihood that skill shortages for upcoming major defence projects are likely to occur as the defence industry competes for skilled workers with the resource and infrastructure sectors.²⁶

13.17 Consistent with evidence before the committee, the paper raises questions on how Defence and industry can best address skill shortages in the future.

Committee view

13.18 The committee understands that the defence industry workforce is suffering from skill shortages, a shortfall in capacity, and limited experience in some areas such as submarines. It especially recognises the difficulties faced by industry in attracting and maintaining the skilled personnel—particularly engineers—required for defence procurement. For industry to deliver the major capital projects set out in the White Paper, the industry workforce will have to grow by approximately 5,000 workers over the next two decades while competing against the resource sector for the limited numbers of skilled workers available. Even if this growth is achieved, the lack of experience of the Australian workforce in some critical areas may still impose significant delays on some projects—such as the Future Submarine Project—unless additional industry expertise and capacity is obtained from overseas.

Access to information

13.19 Due to Defence's dominance in the domestic defence market, Australian firms are largely dependent on Defence's decisions for business. Clearly, public information

24 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, p. 5.

25 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, pp. 8 and 10.

26 Skills Australia, *Defence Industry Workforce Strategy: Discussion Paper*, January 2012, pp. 12–13.

is essential for industry planning particularly around resourcing and investment.²⁷ By providing clear and timely information to industry, Defence can assist these firms to undertake more informed planning, investment and innovation, and as a result, offer better value for money and greater capacity to Defence.

13.20 The main public information tools that the government uses to convey its priorities to industry are the Defence White Paper and the DCP. The 2009 White Paper set out the long-term capability goals that the government intended to achieve. According to Air Marshal Harvey, the White Paper and the DCP generally provide a very high level description of the required outcome but not necessarily the materiel solution.²⁸ Descriptions of outcomes required (for example, a submarine capability), however, can provide industry with valuable information about future acquisition projects.

13.21 The White Paper also announced the government's undertaking to ensure that certain strategically important industry capabilities would continue to be available from within Australia. In July 2009, following the publication of the White Paper, the government released a fact sheet outlining 12 Priority Industry Capabilities (PICs).²⁹ The PICs are defined as:

...those capabilities that confer an essential strategic advantage by being available from within Australia and which, if not available, would significantly undermine defence self reliance and Australian Defence Force (ADF) operational capability.³⁰

13.22 The DCP, which provides the defence industry with insight into defence procurement, is a practical document and one of the fundamental sources of inputs to the strategic planning processes. The 2011 DCP contained an account of major capital initiatives that were currently planned for government consideration in the period to 2021.³¹ An ASPI paper, described the DCP as a key document:

Without doubt, the DCP is the single most important source of defence capability planning information available to industry, the media, academe and the public at large—not to mention the Parliament of Australia and the men and women of our defence force.³²

27 See BAE Systems Australia, *Submission 12*, p. 4.

28 *Committee Hansard*, 7 October 2011, p. 27.

29 Department of Defence, Fact Sheet, *Priority Industry Capabilities*, July 2009.

30 Department of Defence, Fact Sheet, *Priority Industry Capabilities*, July 2009, p. 1.

31 See for example, Sonartech ATLAS Pty Ltd, *Submission 13*, p. 1 and Department of Defence, *Defence Capability Plan*, 2011, p. 1.

32 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 1.

13.23 The public version of the DCP 2009 was updated twice in 2010, further revised in 2011 and the latest version published in July 2012.³³ The current DCP contains 111 priority projects, or phases of projects, worth approximately \$153 billion and planned for either first or second pass approval over the four year Forward Estimates period.³⁴

13.24 Defence also releases defence industry policy statements. The 2010 statement set out the government's vision for how Defence and industry would work together to achieve a combination of outcomes—the ADF receives the equipment that it needs, Australian taxpayers receive value for money, and local businesses obtain opportunities to win business domestically and internationally.³⁵ It cited four key principles underpinning the policy:

- setting clear investment priorities;
- establishing a stronger Defence-industry relationship;
- seeking opportunities for growth; and
- building skills, innovation and productivity.³⁶

13.25 The policy statement cited the PICs as an aspect of the first principle, noting that 'Government may take into account factors such as Australian industry impacts, the national interest, broader strategic factors, and other whole-of-government considerations' when making decisions based on value-for-money in PIC-related procurements.³⁷

13.26 Defence has also created the Defence+Industry ePortal, a website that provides links to key planning documents, media releases and tender announcements.³⁸ According to Defence, 'the ePortal is designed to provide industry with a tool to access a wide and comprehensive range of Defence information

33 Stephen Smith MP, Minister for Defence, 'Minister for Defence and Minister for Defence Materiel—Joint media release—Defence Capability Plan', 10 July 2012, <http://www.minister.defence.gov.au/2012/07/10/minister-for-defence-and-minister-for-defence-materiel-joint-media-release-defence-capability-plan/> (accessed 29 July 2012).

34 Stephen Smith MP, Minister for Defence, 'Minister for Defence and Minister for Defence Materiel—Joint media release—Defence Capability Plan', 10 July 2012, <http://www.minister.defence.gov.au/2012/07/10/minister-for-defence-and-minister-for-defence-materiel-joint-media-release-defence-capability-plan/> (accessed 29 July 2012).

35 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, p. 8.

36 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, pp. 9–11.

37 Department of Defence, *Building Defence Capability: A Policy for a Smarter and More Agile Defence Industry Base*, 2010, pp. 9–10.

38 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 24.

including opportunities for companies, including SMEs, to participate in Defence acquisition and sustainment programs'.³⁹ Additionally, the Defence+Industry conference is an annual conference bringing together defence personnel and industry representatives.⁴⁰ Industry values the conference highly as an opportunity to meet defence officials and show products.⁴¹

Industry's perspective

13.27 A number of analysts and witnesses were critical of the quality and reliability of information available and drew particular attention to the Defence Capability Plan (DCP).⁴² The Australian Business Defence Industry Unit and Sonartech Atlas urged the government to provide industry with clear messages to increase the industry's confidence in Defence.⁴³ According to Sonartech Atlas (STA), the DCP funding brackets in their current form are interpreted by STA as a less than perfect predictive tool to glean the intent of the Commonwealth in relation to a particular project. It argued that a 'greater level of detail regarding the Commonwealth's expectations on the outcomes or deliveries would help to minimise ambiguity with potential benefits for both defence and industry'.⁴⁴ In its view, there was scope for the DCP to be of greater benefit to industry by providing more detail of the Commonwealth's expectations on delivery, better fidelity in project timelines and allocation of priorities for listed projects. It stated:

As it stands, it is not possible for a business to determine the priority order of the projects within the DCP, ie the risk a project could be progressed or slipped dependent on other higher priority projects. This can be a significant issue if the project a potential supplier is pursuing and investing for is a lower priority project with less likelihood of advancement.⁴⁵

13.28 Dr Thomson described the DCP as 'unhelpful'. He stated that 'while specific years used to be provided for the planned approval of projects, there are now only multiyear brackets that obscure what's going on with individual projects'. The

39 Defence Materiel Organisation, 'Defence Industry ePortal', <http://www.dplusi.defence.gov.au/> (accessed 16 January 2012).

40 See <http://australia.gov.au/topics/defence-and-international/defence-industry> (accessed 15 June 2012).

41 Leigh Purnell and Mark Thomson, 'How much information is enough? The disclosure of defence capability planning information', Australian Strategic Policy Institute under contract to the Australian Department of Defence, December 2009, p. 68.

42 For example, in its submission, the Australian Industry Group Defence Council supported ASPI's recommendation that Defence move to a 10-year DCP timeframe but with regular, six-monthly online updates. *Submission 10*, p. [11].

43 Australian Business Defence Industry Unit *Submission 6* p. 4; Australian Industry Group Defence Council, *Submission 10* p. [5] and Sonartech, *Submission 13*, p. 1.

44 *Submission 13*, p. 1.

45 *Submission 13*, p. 1.

Submarine Institute of Australia Inc informed the committee that in recent years the former clarity of the DCP had been undermined. In its opinion, this tendency 'runs counter to the increasing demands for accuracy and detail in plans and schedules from industry'.⁴⁶ One industry representative questioned the reliability of both the White Paper and DCP with regard to projects being on time and on track.

The reality...is that there is a delay process in that front end on these things. Obviously the strategic requirements can change. We all acknowledge that, but when it comes to the defence capability planning cycle...these things become quite critical to companies' investments in facilities, training, staffing, retention of staff and so on. So there is almost a loss of credibility around the significance of a white paper, the significance of a DCP and the underlying actions that will achieve the dates of those plans.⁴⁷

13.29 The Defence Council noted that in December 2010 when the updated public DCP was released, Ministers Smith and Clare 'announced the cancellation or postponement of 21 major projects or phases of projects' without explaining adequately these changes to the DCP.⁴⁸

13.30 It should be noted that both experts and commentators as well as representatives of defence industry have been critical of the information made available through the DCP for many years. For example one of the loudest messages coming out of the committee's 2006 inquiry into naval shipbuilding was that industry 'wants clearer guidance from government on its long term plan and objectives for the industry'. The report also found that the plan 'currently seems to bring industry into the discussion about capability development too late'. It concluded that:

...the DCP should provide the opportunity for Australian industry, and indeed, the wider community, to engage with Defence in the earlier stages of analysing and identifying Australia's strategic priorities and the capabilities needed to meet them.⁴⁹

13.31 With regard to the information available on priority industries, some industry representatives welcomed the government's commitment to sustain PICs and Strategic Industry Capabilities (SICs) within Australia. The 2012 DCP listed the following as PICs:

- Acoustic Technologies and Systems
- Anti-Tampering Capabilities
- Combat Uniform and Personal Equipment
- Electronic Warfare

46 *Submission 9*, p. 2.

47 *Committee Hansard*, in camera.

48 Australian Industry Group Defence Council, *Submission 10*, p. [11].

49 Senate Foreign Affairs, Defence and Trade References Committee, *Blue water ships: consolidating past achievements*, December 2006, paragraph 15.65.

- 'High-end' System and 'system of systems' integration
- High Frequency and Phased Array Radars
- Infantry Weapons and Remote Weapons Stations
- In-Service Support of Collins Class Submarine Combat Systems
- Selected Ballistic Munitions and Explosives
- Ship Dry Docking Facilities and Common User Facilities
- Signature Management, and
- Through-life and Real-Time Support of Mission Critical and Safety Critical Software.

13.32 While industry representatives welcomed the publication of PICs, they regarded them as 'too narrow, not well defined or limited to one stage of the lifecycle'. According to the Australian Industry Group Defence Council, the information provided by government and Defence has not been sufficient for some businesses and industry groups to make informed longer-term investment decisions.⁵⁰ Additionally, BAE Systems also argued that at present the PIC and SIC do not provide 'sufficient information for industry to make longer-term investment decisions'.⁵¹ Other industry representatives also noted that Defence should provide clearer guidance to industry.⁵² Similarly, a 2009 ASPI's report found that industry considered the list of PICs too limited and focused only on 'high profile' capabilities, and lacking the required level of detail.⁵³ A survey of defence industry capability supported this view and suggested further that PICs are 'not yet accompanied by a clear implementation strategy or evidence of action resulting from their publication'.⁵⁴

Committee view

13.33 Defence's approach to its dealings with industry—planning, acquisition and sustainment for defence projects—is essential for the successful delivery of *Force 2030*. Industry's ability to plan for, and invest in, people and facilities to deliver future defence projects is significantly dependent on the information Defence provides about its intentions. The DCP and Defence White Papers are the main public information tools and key planning documents for industry. Clearly, from industry's perspective, they fall short in providing the level of certainty and confidence that industry requires

50 Australian Industry Group Defence Council, *Submission 10*, p. 10.

51 BAE Systems, *Submission 12*, p. 1.

52 *Committee Hansard*, in camera.

53 Australian Strategic Policy Institute, 'How much information is enough? The disclosure of defence capability planning information', 2009, p. 64.

54 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

to be an effective partner in capability development. Furthermore, the committee believes that the involvement of industry at the earliest stage of capability planning is inadequate, including Defence White Paper preparation (see paragraphs 3.20, 3.24–3.30).

Off-the-shelf

13.34 In the previous chapter, the committee noted the consequences for skills development in Defence caused by purchasing OTS. The very strong collective view of respondents to a survey of defence industry capability was that the continuing Defence preference for the inclusion of off-the-shelf solutions was 'reducing the amount of engineering design work at the sub-system level and below'. The respondents regarded government's emphasis on MOTS/COTS as 'somewhat misguided' because they believed that to be competent in systems integration, engineers required a deep understanding in a domain (i.e. software, hardware, electronics, etc) and then broader experience in systems engineering. According to the results of the survey:

This consequently means that there will be fewer engineers in the future that have had the benefit of having been involved in the detailed design and interfacing of hardware and software. The concern from industry was that 'People that study SI [systems engineering] only, without practical technology experience, are often the ones who make mistakes on complex SI [System integration] projects as they are only 'book smart' system with little real subsystem and equipment experience.'⁵⁵

13.35 Industry's concerns about the need to provide opportunities for those in defence industries to gain practical technology experience in detailed design and hardware and software interfacing is another consideration that should be factored into decisions about, and arrangements for, purchasing OTS.

Workflows

13.36 As noted earlier, Defence is the sole customer for Australia's domestic defence industry and its procurement decisions directly affect the industry, including the viability of some companies. In particular, uneven demands on defence industry can reduce its ability to support Australia's capability needs. Australian SMEs that rely on work generated from major Defence capital equipment projects are particularly vulnerable to Defence's procurement decisions and are dependent on Defence to provide them with an even flow of work.

13.37 In this regard, a dominant theme among industry submissions to this inquiry has been the need for Defence to commit to more regular flow of new projects and

55 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

sustainment work to encourage investment in the defence industry.⁵⁶ Industry representatives, both primes and SMEs, supported each other in their call for Defence to smooth out fluctuations in the workload.

13.38 Defence's cyclical demands—for example, periods of heavy shipbuilding followed by a drop-off in demand—can create difficulties for industry in maintaining a workforce through periods of low demand. Prolonged gaps between projects can force the prime contractors to lay off workers and SMEs to leave the defence sector altogether. The Royal Institution of Naval Architects referred to the provision of a steady stream of work at whatever level Defence feels is an appropriate level as very important to defence industry:

Peaks and troughs should be avoided wherever possible, and as much notice given to industry when these are unavoidable, to help companies to plan.⁵⁷

13.39 The Australian Business Defence Industry Unit argued that to deliver new platforms and systems beyond the next decade, industry will 'need to build and grow skills in capability development, design engineering, project management, assembly and systems integration'. Workforces with these skills, however, 'can only be maintained and grown through regular tranches of new defence projects between 2011-2019'.⁵⁸

13.40 BAE Systems Australia similarly noted that a robust indigenous industry requires a smooth and consistent demand to maintain capability. It argued that fluctuations in demand would 'invariably lead to degradation in industry capability.' It cited the four year gap from 2014 to 2018 in ship building requirements of the present DCP, which will result in deterioration in workforce skills and expertise in the maritime sector.⁵⁹ Mr Innes Willox of the Australian Industry Group Defence Council described the situation:

...what bedevils all the companies we represent here is that projects start and stop and then there are gaps; then they start and stop and then there are gaps; and then there are ramp-ups and ramp-downs all through this. So the pipeline does not flow; it either gushes or dribbles. It is that feast or famine scenario which bedevils the entire industry, because you do lose that skills base. They go off...and then they do not come back...So we lose all the great technological and technical expertise that we developed through the Collins class submarines and the Anzac frigates, or it disappears or we

56 Australian Business Defence Industry Unit, *Submission 6*, p. 3; Sonartech ATLAS, *Submission 13*, p. 2; BAE Systems Australia, *Submission 12*, p. 3; Australian Association for Maritime Affairs, *Submission 17*, pp. 5–6; Royal Institution of Naval Architects, *Submission 18*, p. 5; and Innes Willox, *Committee Hansard*, 11 August 2011, p. 2.

57 *Submission 18*, p. 5.

58 *Submission 6*, p. 3.

59 *Submission 12*, pp. 2–3.

cannot find it again. We cannot rummage around in the bottom drawer and just pick it up and start again.⁶⁰

13.41 According to Mr Tonkin, Australian Industry and Defence Network, the government's policy has failed to maintain a sustainable workload in the defence shipbuilding space to enable industry to maintain its skills. He referred to the importance of spreading acquisitions over time and concluded that 'If you were to deliver ships in a succession, as they do in some other countries, you would find that we would have the capability to adequately undertake that task'.⁶¹ Along the same lines, BAE noted:

Consistent and sustained demand is necessary for industry to develop and maintain both capability and capacity. This requires longer term contracts for sustainment that provide incentives for industry for investment, particularly in skilled people. In addition to the issue of industry capability, there is the equally important factor of capacity that requires a baseline level of work to maintain or alternatively sufficient notice and certainty for industry to ramp-up to the required level.⁶²

13.42 Dr Davies explained the problem in terms of naval shipbuilding where there is a surge while one class of ship is being built, followed by a hiatus, and 'then a lot of those skills need to be relearned'. As noted earlier, the AWD stands out an example of where peaks and troughs created problems for the industry. He noted:

We have just seen that play out in the air warfare destroyer project. The BAE shipyards did a fine job building the Anzac frigates. Fast forward 10 years and all sorts of problems emerge when they start to construct the first modules for the air warfare destroyers.⁶³

13.43 Looking forward, the Victorian Government registered concerns about another significant gap in demand before the next tranche of shipbuilding commences following the completion of the AWDs and LHDs.⁶⁴

Slowdown in approvals

13.44 On a related matter, a number of companies cited the rate of project approvals as a worrying trend. In chapter 3, the committee referred to the slippage in the approval rate in the context of the need for sound planning for future capability development based on early and robust analysis. The following consideration of the slow rate of approvals is concerned with the effect of delays on industry.

60 *Committee Hansard*, 11 August 2011, p. 17.

61 *Committee Hansard*, 11 August 2011, p. 17.

62 *Submission 12*, p. 3.

63 Andrew Davies, *Committee Hansard*, 12 August 2011, p. 6.

64 *Submission 27*, p. 8.

13.45 In recent years, project approvals have slowed which, in industry's experience, is having a negative impact on companies, particularly on prime contractors, SMEs and professional service providers.⁶⁵ A number of submissions cited the Defence Incoming Government Brief 'Red Book' released by the government on 28 October 2010, which revealed that the two-pass process had stalled. According to Dr Davies and Dr Thomson, it was clear that things were slipping behind schedule as early as May 2010. Since then, the situation has deteriorated further. In their view, 'given the mounting delays, it looks increasingly unlikely that the program of modernisation can be achieved on schedule'. More recently in ASPI's 2011 Defence Budget Brief, Dr Thomson stated:

They can change the goalposts all they want, but the fact remains that implementation of Force 2030 has fallen steadily behind schedule over the past two years...over the past 24 months, a mere ten projects have been given the nod, whereas more than three times that number was planned. And it is set to get worse.⁶⁶

13.46 He suggested that 'the unambiguous lesson of the past decade was that while planning for new capability is easy, delivering it can be very difficult'. To his mind, it 'is already clear that the new capabilities envisaged in the White Paper will not enter service as planned'.⁶⁷ According to BAE Systems, the NSC would need to approve approximately 50 projects per year to meet the present DCP timeline.⁶⁸ The present average, however, is less than ten per year. In his most recent Defence Budget Brief, Dr Thomson stated that the lead indicator of future work, first-pass approvals, was still 'badly behind schedule'.⁶⁹

13.47 One consequence of this delay is increased cost to industry as project teams are formed and disbanded. BAE Systems stated that the time the NSC takes to consider and approve projects affects the flow of work to industry. A slowdown in the rate of project approvals can create a lower and less predictable workload for industry,⁷⁰ and as a result, can also impose significant costs on industry. In its view, the slow rate of approval aggravates the already severe problem of uneven workload.⁷¹ The Australian Industry Group Defence Council similarly observed that

65 Graham Priestnall, Australian Industry and Defence Network Inc., *Committee Hansard*, 11 August 2011, p. 3.

66 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2011–2012*, May 2011, p. vii.

67 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2011–2012*, May 2011, p. 103.

68 *Submission 12*, p. 3.

69 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013*, May 2012, p. 119.

70 *Submission 12*, p. 3.

71 *Submission 12*, p. 3.

the delay in approvals undermines 'industry's investment in infrastructure and skilling, including causing cash-flow and staffing problems for SME companies'.⁷²

13.48 The Australian Industry Defence Network supported the contention that the slowdown in the approval rates had adversely affected the defence industry. In its view, this interruption had the potential to delay capability needed by the ADF and, through the delay, increase the cost of providing that capability.⁷³ Numerous other witnesses cited the detrimental effect that Defence's general slow-down in decision-making was having 'on the ability of defence industry companies to make the necessary business and investment decisions to ensure the ongoing viability of the sector'.⁷⁴

13.49 Industry representatives noted that current delays in decisions were causing particular problems for the smaller companies and stressed the need for Defence to maintain a consistent flow of work to keep the industry going.⁷⁵ In December 2011, *Jane's Defence Weekly* reported that at least ten defence-related SMEs 'operating in niche capability areas' had ceased trading or withdrawn from the defence industry. Delayed program approvals were cited as a decisive factor forcing companies to withdraw from the defence sector.⁷⁶ A recent survey of defence industry capability also indicated that 'many significant job losses had occurred in some companies over 2009–10 and more were 'expected as many projects were delayed by the White Paper preparation in 2009 and had not gone to contract'.⁷⁷

13.50 While a slowdown in approvals of new projects may result in an increase in sustainment spending, as existing systems must be maintained for longer, the Northern Territory (NT) Government argued that this had not occurred in recent years.⁷⁸ The slowdown in the volume of work going to both prime contractors and SMEs has had significant impacts in the NT, with SMEs in particular suffering from the reduced workload and being forced to sustain operations in other industry sectors instead of

72 *Submission 10*, p. [3].

73 *Submission 19*, p. 1.

74 See for example, *Submission 12*, p. 3; *Submission 10*, p. [3]; *Submission 19*, p. 1 and Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

75 Christopher Burns, Defence Teaming Centre, *Committee Hansard*, 11 August 2011, p. 4.

76 Jon Grevatt, *Jane's Defence Weekly*, 'Challenges lie ahead for Australian defence', 21 December 2011.

77 Professor Stephen Cook and Dr Mark Unewisse, 'A Survey of Defence Industry Systems Engineering and Systems Integration Capability: Part 2: Qualitative Results and Survey Findings', Paper prepared for Systems Engineering and T&E in the Next Decade, May 2011.

78 Northern Territory Government, *Submission 4*, p. 3.

defence. The NT Government warned that industry capability in NT would soon be lost if current delays were not resolved.⁷⁹

13.51 Defence acknowledged that it faced challenges in delivering the number of project approvals for government consideration.⁸⁰ In October 2011, in response to a question about the rate of project approvals by the NSC, Air Marshal Harvey, then CCDG, stated that first and second pass approval rates were increasing.⁸¹ As noted earlier, however, Dr Thomson indicated that first pass approvals were 'badly behind schedule'⁸² He observed further:

It is worrying, that the usual surge in approvals following a White Paper simply did not occur in 2009. Moreover, the election in 2013 (which historically reduces the number of approvals) and a White Paper in the same year (which on past experience will be preceded by a substantial hiatus in approvals), will probably see a reduced throughput of approvals over the next eighteen months.⁸³

Time lapse to contract signature and commencement

13.52 Industry also raised concerns about the time lapse from the bidding phase for a project to contract award and contract commencement. The Australian Association for Maritime Affairs stated that current processes 'take so long, delay the expenditure of money; and diffuse personal responsibility for the eventual outcome'.⁸⁴ According to the Australian Industry Defence Network, the delays around decision-making to contract result in higher costs, due to the effects of inflation, the increased cost of later technology and of government and defence industry resources 'treading water' while waiting for a decision.⁸⁵ The Defence Teaming Centre believed that this process 'requires reform and tighter timelines, especially for contract award'. It argued that 'the delayed time frame, sometimes years, eventually creates an unrealistic timeline in which industry must then deliver'.⁸⁶ In addition, according to the centre, 'the company may lose vital intellectual capability within their staff if not utilised within the original time frame proposed'.⁸⁷ The Australian Industry Group Defence Council urged Defence to 'embrace speedier tendering and contracting processes and outcomes

79 Northern Territory Government, *Submission 4*, p. 4.

80 *Supplementary Submission 21A*, p. 3.

81 *Committee Hansard*, 7 October 2011, p. 31.

82 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013*, May 2012, p. 119.

83 Mark Thomson, *The Cost of Defence ASPI Defence Budget Brief 2012–2013*, May 2012, p. 121.

84 *Submission 17*, p. 4.

85 *Submission 19*, p. 3.

86 *Submission 16*, p. 4.

87 *Submission 16*, p. 4.

which incorporate proven cost-effective commercial practices and processes'.⁸⁸ DMO's tendering and contract practices are considered in the following chapter.

Committee view

13.53 Many witnesses voiced their concerns about delays in the procurement processes and the lack of attention given to ensuring that the work generated by defence procurement was steady. As Australia has only a finite amount of industry capacity in terms of engineers, shipyards and other resources, Defence needs to consider carefully how it could better manage its flow of work in order to assist industry to remain productive.⁸⁹ This does not mean that government resources should be used to give industry work to do in between projects to keep the workforce stood up and the skills base intact. As industry emphasised a more consistent workflow is needed to enable industry to invest and increase its capability and capacity to the levels that will be needed in the coming decades.⁹⁰

13.54 As a relatively small force, it can be difficult for Defence to moderate its acquisition projects so that demand for work from industry is even and constant. Even so, it is clear that Defence must do its utmost to develop a DCP that provides an even flow of work that would encourage industry 'to invest wisely in infrastructure, skills and staffing'.⁹¹

Recommendation

13.55 The committee recommends that Defence make their DCP a document that provides industry with greater certainty about its plans and intentions for future capability development to enable industry to invest with confidence in capability development. In particular, the committee recommends that the next DCP include:

- **a schedule that provides anticipated timelines for the construction and delivery of all DCP items, with continuity the key feature; and**
- **a detailed explanation on this acquisition schedule indicating the reasoning and analysis behind it and how Defence has taken into account demand flows; and**
- **reliable cost estimates.**

88 *Submission 10*, Recommendation 13, p. 5.

89 Mark Thomson, *Committee Hansard*, 12 August 2011, p. 11.

90 BAE Systems, *Submission 12*, p. 3, Sonartech Atlas, *Submission 13*, p. 2.

91 Australian Industry Group Defence Council, *Submission 10*, p. [5].

Chapter 14

Defence's relationship with defence industry

14.1 The committee's main focus has been on the shortcomings in Defence's performance in its major acquisition projects. Industry, however, is not without fault. Both industry and Defence have not always fulfilled 'all their obligations and commitments on delivering projects on time and often to budget'.¹ Thus, there is scope for Defence to work more effectively with industry and to assist industry to improve its performance. Breakdowns in the relationships between Defence and industry on several major projects in recent years have highlighted the tension that can exist between the parties and its potential to derail a project. In this chapter, the committee considers the relationship between Defence and industry as partners in Australia's capability development.

Partnership—Defence and industry

14.2 Mr Ben White, Australian Business Defence Industry Unit, believed that delivering defence capability must be a partnership between the government, Defence and industry, and advocated greater industry engagement as a true partner—at all levels and stages of the capability development and acquisition process.²

14.3 Witnesses identified opportunities for improvement in the relationships between industry and the CDG.³ According to the Defence Teaming Centre, industry 'needs to work with the CDG to establish a full and complete understanding of their capability requirement to effectively bid and fulfil the end user capability requirement'. It suggested that through improved consultation, the CDG could use industry expertise to gain a better understanding of current and future enhancements in technology and capability for consideration within current project procurement requirements.⁴ Furthermore, the Defence Teaming Centre informed the committee that industry feedback indicated that 'a more direct relationship with the end user and customer would create a more accepting level of technical risk by the customer'. It explained that 'industry can provide the advice, information and technical expertise for a greater awareness of the capability and the risks'.⁵ It stated:

Industry recognises a greater need to negotiate directly with the customer during the procurement process rather than contracted external parties to

1 *Committee Hansard*, in camera.

2 *Committee Hansard*, 11 August 2011, p. 2.

3 According to the Defence Teaming Centre, industry consultation suggested the CDG's role should be enhanced to establish a better relationship with industry. *Submission 16*, p. 3.

4 *Submission 16*, p. 3.

5 *Submission 16*, p. 3.

fully understand the capability requirements and negotiate innovative concepts within the contract.⁶

14.4 While BAE Systems acknowledged the recent improvements in the six-monthly online DCP updates, it noted that it was only a one-way transmission of information from Defence to industry.⁷ BAE Systems suggested that 'meaningful discussion between industry and Defence early in the capability development process would improve the knowledge of both parties and lead to higher quality outcomes'.⁸ The importance of early engagement was one of industry's dominant messages.

Early engagement

14.5 Defence's level of engagement with industry in the early stages of the procurement process can have significant implications for a project's success, viability and value for money over the long-term. Additionally, DMO's relationship with industry and DMO's ability to negotiate effectively on behalf of the Commonwealth is also an important factor in establishing a positive working relationship between the different parties involved in defence projects and achieving value for money.

14.6 As noted early in this report, 80 per cent of problems with projects occur in the first 20 per cent of the project's life.⁹ Both industry representatives and observers stressed the importance of industry's early involvement in the capability development process to ensure that requirements are realistic and cost-effective.¹⁰ The Australian Business Defence Industry Unit argued that 'real partnership between Defence and industry early in the development of capability concepts and then throughout the lifecycle of systems can only lead to better capability, better technology and lower life-cycle costs'. In its view, the Commonwealth's focus on:

...Value for money and market-based competition in key capability means that industry gets involved too late to bring the best and most cost-effective solution to the table. Early industry involvement can lower Defence risk and can be done in ways that maintain Value for Money objectives and market-based competition.¹¹

14.7 According to the Unit, early industry engagement should occur before formal approaches to market and Defence should be willing to build ongoing formal and informal relationships with industry. It argued that the Capability Development

6 *Submission 16*, p. 2.

7 BAE Systems, *Submission 12*, p. 4.

8 BAE Systems, *Submission 12*, p. 4.

9 Australian Business Defence Industry Unit, *Submission 6*, p. 5; Andrew Davies and Mark Thomson, *Submission 8*, p. [2]; Australian Industry Group Defence Council, *Submission 10*, p. [4]; Australian Industry Defence Network, *Submission 19*, p. 3.

10 Australian Business Defence Industry Unit, *Submission 6*, p. 5.

11 *Submission 6*, p. 5.

Advisory Forum (CDAF) and environmental working groups should be used to achieve this early industry engagement.¹²

14.8 Mr Willox, Australian Industry Group Defence Council, stated succinctly that one of industry's key bugbears was to get itself involved much more and much earlier in the CDG.¹³ In his view, if industry 'is not involved earlier on then there are blow-outs'. He stated getting industry involved sooner reduces the risk and industry is at least able to say 'what is doable, what is possible, what is realistic and what is not'.¹⁴ The Australian Industry Defence Network also argued that there is potential for Defence to develop a stronger relationship with industry by encouraging earlier industry involvement in Defence reviews and reports.¹⁵

14.9 Dr Davies and Dr Thomson were among the many other witnesses who argued in favour of the involvement of industry in the early stages of capability development to ensure that planning is informed by a clear understanding of what is available, technologically and commercially. It cited the proposal in the 2009 White Paper and subsequent DCP to replace the Navy's current patrol boats, mine hunters and hydrographic ships with a single class of vessels (SEA 1180) as a demonstration of the risk of 'planning in an information vacuum'.¹⁶ It should be noted that DSTO stated in its submission that it supported Navy in the Needs Phase to assess the feasibility of the multi-role vessel to perform a variety of different tasks.¹⁷ Even so, as noted in chapter 3, Dr Thomson observed that the multi-role vessel:

...is going to be all things to all people. If you talk to people who actually build boats for a living, you might actually temper your aspirations...¹⁸

14.10 The major primes similarly highlighted the benefits to be gained from earlier industry involvement in the capability development and procurement process.¹⁹ One industry representative voiced the widely held view amongst his peers that primes should be involved at the earliest point in time—that they should 'be there as independent expert witnesses, almost':

...to give guidance on what the possibilities are: to suggest methods of minimising the risk; and even to put scaling on cost for initial acquisition and scaling on cost for sustainment.²⁰

12 Australian Business Defence Industry Unit, *Submission 6*, p. 5.

13 *Committee Hansard*, 11 August 2011, p. 5.

14 *Committee Hansard*, 11 August 2011, p. 5.

15 Australian Industry Defence Network, *Submission 19*, p. 3.

16 Andrew Davies and Mark Thomson, *Submission 8*, p. 2.

17 Defence Science and Technology Organisation, *Submission 31*, p. 3.

18 Mark Thomson, *Committee Hansard*, 12 August 2011, p. 11.

19 *Committee Hansard*, in camera

20 *Committee Hansard*, in camera.

14.11 One industry representative also noted that the prime contractors could, based on their global experience, reach back to their parent company and draw on a much broader knowledge base.²¹ Industry representatives suggested that there is no real impediment for industry to engage with Defence prior to first pass.²²

14.12 During the committee's visit to South Australia and Western Australia, industry representatives reinforced this message. They informed the committee that early industry involvement and close collaboration between Defence and industry during the early stages of a project was critical to its success, and that a lack of consultation can lead to significant mistakes being made during the initial phase of a project.

14.13 Additionally, several industry representatives observed that Defence's decision to postpone industry involvement in projects until later stages often puts unnecessary pressure on industry to deliver a project. In some cases, industry had been engaged only as a long-foreseen capability gap began to emerge, and was placed under significant pressure to deliver the new capability as fast as possible. A few witnesses were concerned about indications that the SEA 1000 may repeat this situation, where an obvious capability gap could loom as the Collins Class approaches the end of its life of type.²³ Noting that the boats are to be built in Adelaide, the danger is that by the time decisions are made and industry engaged, there would be significant pressure on industry to deliver the submarines quickly to maintain Australia's submarine capability as the Collins Class submarines are decommissioned.

14.14 Defence's Capability Development Handbook recognises that early engagement with industry can 'provide projects with useful information about the products available in the marketplace'. It can also give an:

...indication of their expected whole-of-life costs, any innovative options that might be available for addressing the capability gap and insights into the nature of the marketplace required for the development of an acquisition strategy.²⁴

14.15 Indeed, pre-first pass solicitation activities, such as a Request for Information, may be undertaken with the assistance of DMO as the subject matter expert.²⁵

21 *Committee Hansard*, in camera.

22 *Committee Hansard*, in camera.

23 See for example, *Submission 9*, pp. 1–2; *Submission 14*, pp. 1–2; and *Submission 15*, pp. 1–2 and 7.

24 Department of Defence, Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.3.44.

25 Department of Defence, Department of Defence, *Defence Capability Development Handbook*, August 2011, paragraph 3.3.45.

Probity concerns

14.16 The early engagement of industry, however, can involve integrity issues. In this regard, Defence cited probity matters as the primary barrier to earlier industry involvement in the capability development process.²⁶ It was concerned with specific companies gaining a competitive advantage through being consulted during the early stages of a project. For example, Air Marshal Harvey explained that the problem was 'to make sure that we treat everybody equally. We cannot show favouritism. If someone comes in and says, 'We have the solution,' we cannot shape our proposed way ahead to match that company'. He stressed that Defence 'cannot be seen to have one company have input and influence that others cannot'.²⁷ Moreover, in Mr King's view, sometimes a certain element of industry shapes CDG too much—'They might have got in there very effectively lobbying for their approach and their solution'.²⁸

14.17 While there was overwhelming support from industry for its early involvement in the capability development process, some representatives recognised the concerns about conflicts of interest. An industry representative from one of the prime contractors acknowledged that:

Probity is an important issue, but we should not be seen as marketing product that we sell or as marketing skills that we have. We should be there representing the capabilities necessary to build the particular thing we are talking about...²⁹

14.18 Consistent with this view, industry more broadly argued that it was possible to achieve the commercial type of interaction where industry is able to provide advice at the front end without undermining the integrity of the process. During its visit to South Australia and Western Australia, both industry and Defence representatives suggested to the committee that probity concerns, while legitimate, were not insurmountable. In their view, such problems could easily be overcome by open and transparent consultation at the strategic stages before specific concepts were proposed. Indeed, some industry representatives commented positively on developments in recent years where industry has been able to have an increased level of involvement in the procurement process.³⁰ Protecting its intellectual property when providing early comments, however, remains an issue for industry.

26 Dr Ian Sare, Defence Science and Technology Organisation, *Committee Hansard*, 5 October 2011, p. 24.

27 *Committee Hansard*, 5 October 2011, p. 24.

28 *Committee Hansard*, 7 October 2011, p. 50.

29 *Committee Hansard*, in camera.

30 *Committee Hansard*, in camera.

Capability Development Advisory Forum and environmental working groups

14.19 A number of witnesses referred in favourable terms to the successful work of the CDAF and its three accompanying environmental working groups—air, land and sea—as a means of bringing Defence and industry together early in the acquisition process. Until recently, however, they had been 'in abeyance'.³¹

14.20 Air Marshal Harvey indicated that the CDG was reinvigorating the forum and the environmental working groups to ensure that both Defence and industry have a better understanding of project feasibility options and risks earlier in the process.³² For example at a recent meeting of the maritime working group, Defence stepped through the whole content of the DCP. Air Marshal Harvey also mentioned that Defence have specific workshops associated with projects where Defence holds one-on-one meetings with industry.³³

14.21 In August 2011, Mr Priestnall, Australian Industry and Defence Network, indicated that work had started at the higher level of requirements development by the CDAF, but also, more importantly, in the environmental working groups that report up to Forum. He explained:

These have been reinvigorated within the last six [months], except for the land one, which stayed in existence. There are also the maritime, air and other ones. In the case of the maritime one, 150 people attended a forum where we talked about ideas.³⁴

14.22 The Australian Industry Group Defence Council also welcomed the decision to revive the Forum and the environmental working groups and advocated stronger industry engagement at the meetings.³⁵ Mr O'Callaghan stated:

...in years gone by the Capability Development Advisory Forum and its underlying environmental working groups...worked quite effectively because it provided companies in a collegiate sense to sit around a table with the Capability Development Group and identify in advance for those capabilities downstream risks associated with major design and integration activities. They could bring in the key players from key companies, likely to be involved but not at that point in any conflict situation, early in the piece to identify for the benefit of the Capability Development Group those elements associated with risk, complexity and schedule, which ought to be identified at that point.³⁶

31 *Submission 10*, p. 8.

32 *Committee Hansard*, 7 October 2011, p. 2.

33 *Committee Hansard*, 5 October 2011, p. 15.

34 *Committee Hansard*, 11 August 2011, p. 8. See also *Submission 10*, p. 8.

35 *Committee Hansard*, 11 August 2011, p. 7.

36 *Committee Hansard*, 11 August 2011, p. 7.

14.23 He suggested that the Forum needs to provide clear guidance to the working groups and not to bite off too much work. In his view, they need to be specific about the outcomes they are seeking and need to focus clearly on 'ameliorating those potential issues related to risk and complexity'.³⁷

14.24 Mr White, Australian Business Defence Industry Unit, also acknowledged the importance of early engagement of industry through environmental working groups, project working groups and similar meetings. He indicated that the process was just starting and time would be needed before any assessments could be made. Even so, in his assessment, 'It is looking very good at the moment. The couple of meetings that we have had have shown good signs'.³⁸ He drew attention, however, to the work currently being done in DMO on the Acquisition and Support Implementation Strategy as a possible model:

...whereby, for example, there may be scope to downselect a number of prime contractors in the requirements phase of a project so that capability definition can be done in concert between Defence and industry in an open environment, while meeting some of those requirements for competition.³⁹

14.25 BAE Systems noted that in the past the CDAF and its environmental working groups 'were not vehicles for close engagement but rather a means for Defence to inform industry of its requirements and intentions'.⁴⁰ The RSL also noted the tendency for Defence to use the environmental working groups to brief industry on projects but that 'resulted in a one-way communication process, with industry representatives understandably reluctant to discuss in open forum their intention and perspectives on individual projects'.⁴¹

Committee view

14.26 Despite Defence's acknowledgement of industry's role, industry representatives referred to the need for greater and earlier industry involvement in capability development. In this regard, the committee welcomes the reinvigoration of the CDAF and the environmental working groups. They provide an ideal opportunity to involve senior defence industry representatives early in the capability development phase without compromising the integrity of an acquisition process.

14.27 The committee also notes industry's observation about the importance of industry having a direct relationship with the end user—capability managers. The committee's proposed model presented in the following chapter addresses this concern.

37 *Committee Hansard*, 11 August 2011, p. 7.

38 *Committee Hansard*, 11 August 2011, p. 6.

39 *Committee Hansard*, 11 August 2011, p. 6.

40 *Submission 12*, p. 3.

41 *Submission 5*, p. [2].

Recommendation

14.28 The committee recommends that Defence:

- continue to collaborate with industry to reinvigorate the Capability Development Advisory Forum and the associated environmental working groups as a means of engaging industry early in the capability development process. The committee recommends further that Defence ensure that such engagement with industry is a genuine two-way exchange of ideas and of information; and
- continue to support training programs such as Skilling Australia's Defence Industry (SADI).

Recommendation

14.29 Given the reach back capacity of primes and their ability to tap into research and development of US and European headquarters, the committee recommends that industry consultation start at the earliest Defence White Paper and DCP stage.

Defence Materiel Organisation's negotiations with industry

14.30 The Coles Report on Collins Class sustainment referred to the monopsonistic relationship between industry and the various parts of Defence. Mr Coles could not help but gain the impression of 'highly-charged, difficult and often hostile relationships between the parties'.⁴² The report was particularly critical of the relationship between DMO and ASC, noting that it had previously been described as 'damaging'.⁴³ Similarly, the AWD project recently suffered from strained relationships between DMO and its industry partners, evident in the difficulties experienced by BAE Systems at the Williamstown shipyard in Melbourne. In the past, some projects that ended badly such as the Super Seasprite, also demonstrated a breakdown in the relationship between Defence and the contractor.

14.31 Some witnesses raised the nature of the working relationship between DMO and industry as a key area of concern. They held that the relationship was often difficult or unproductive which could lead to project failures.⁴⁴ The Defence Teaming Centre was critical of DMO's attitude. In its view, the DMO 'appears to have an adversarial approach to Australia's defence industry' by implying that industry is trying to 'gouge' Defence and 'not deliver'. It stated that the industry does not experience this adversarial approach when dealing with other areas of Defence such as

42 John Coles, *Collins Class Sustainment Review—Phase 1 Report*, 4 November 2011, p. 9.

43 John Coles, *Collins Class Sustainment Review—Phase 1 Report*, 4 November 2011, p. 10.

44 Returned and Services League of Australia, *Submission 5*, p. 2; Australian Industry Group Defence Council, *Submission 10*, p. 2; MOTIVEPOWER stated that 'in general DMO and Defence do not understand the commercial pressures on companies seeking to be Defence suppliers'. *Submission 29*, p. 2.

the DSG.⁴⁵ In the Defence Teaming Centre's view, DMO's perception that industry does not work in the best interest of the customer needs addressing and should be reversed to create a win/win culture for all parties in the procurement process.⁴⁶ It suggested that:

The DMO needs to develop a more commercial engagement culture that offers the 'carrot' more than the 'stick'.⁴⁷

14.32 The RSL also referred to the adversarial relationship between DMO and industry which was 'antithetical to the development of a transformational culture of integrated endeavour...essential if true reform is to be achieved'. It noted that capability managers, DMO and industry must together engage in the 'end to end analysis' of a capability 'to identify all opportunities for reform and hence efficiency'.⁴⁸

14.33 Trust between Defence and industry is fundamental to a good working relationship. But according to Mr Mansell, Australian Business Defence Industry Unit, 'that trust is diminishing'. For example, he said that industry needs to know whether there is going to be a tender out on time...But if it is a moving feast then, after a while, industry will say no.⁴⁹ The Australian Industry Group Defence Council agreed with the view that Defence and industry need 'to build a stronger level of trust'.⁵⁰

14.34 The committee has discussed DMO's efforts to improve its business acumen. Even so, it should be noted that industry remains frustrated with DMO's failure to appreciate the business environment. Mr Priestnall stated that some DMO personnel have no commercial awareness of matters to do with cash flow and how businesses work. He gave an example of the chopping and changing in proposed dates for the release of tender documents. In his experience, better business practice on the part of DMO would mean that he does not find himself in a situation where he has to pay 10 project engineers and a project manager to sit around 'twiddling their thumbs'. He stated further:

45 *Submission 16*, p. 2. The Centre stated that this [perception] 'could not be further from the truth, 99.9% of Australia's defence industry is professional and patriotic with a passionate desire to deliver with value for money capability on time and to budget'.

46 *Submission 16*, p. 2.

47 *Submission 16*, p. 2. Mr Christopher Burns, Defence Teaming Centre, indicated that industry's relationship with DMO was adversarial, while with other agencies it was a collegiate, engaged approach. *Committee Hansard*, 11 August 2011, p. 4.

48 The Returned & Services League of Australia, *Submission 5*, p. 2.

49 *Committee Hansard*, 11 August 2011, p. 10. Mr Willox agreed that there must be an element of trust in the relationships. *Committee Hansard*, 11 August 2011, p. 5.

50 *Submission 10*, p. 2.

For a large company with deeper pockets, even though they are hurting, they can ride that out. They have multiple business streams. An SME, which are our powerhouse of innovation and entrepreneurship, cannot.⁵¹

14.35 It is clear that, when negotiating with the defence industry, DMO needs to have the business insight and appreciation together with strong negotiators to achieve the best value for money. As discussed earlier, DMO acknowledges it needs to develop a range of business and contracting skills within the organisation and to upskill its staff in how they deal with industry.⁵² Mr King highlighted the differences between DMO and industry:

Industry has a responsibility to its shareholders, to its organisation, to maximise its returns; it is obliged to by law. We have generally a community of people that are not from a business background...Similarly, by the way, as both public servants and as military folk, we do not really understand the drivers of industry as well as we might—cash flow; indeed, the need to make a profit.⁵³

14.36 In an environment, where the relationship between DMO and industry may already be strained, contract arrangements are central to underpinning a constructive partnership.

Contracting and risk sharing between Defence and industry

14.37 Good working relations provide a sound foundation on which to negotiate a contract. But a major defence acquisition project is a business arrangement where the customer and the contractor are each seeking to extract the best deal. The challenge is to establish a legal arrangement that satisfies and benefits all parties fairly. In this area, GAO cited some fundamental lessons to guide future decisions:

...a program must be put on a sound technical, cost, and schedule footing before it is approved—contract vehicles can accommodate risks but cannot fix a troubled program. At the same time, a flawed competition or contract award process can delay or disrupt an otherwise sound acquisition. A sound acquisition and contract strategy is essential to executing the acquisition within time and funding budgets.⁵⁴

14.38 In defence procurement, contracting is a key method of allocating risk between Defence and industry. Currently, the majority of Defence's contracts with industry are in the form of fixed-price contracts. Partly as a result of these contracting arrangements, Defence has been able to keep most projects—even many with

51 *Committee Hansard*, 11 August 2011, pp. 5–6.

52 Warren King, Defence Materiel Organisation, *Committee Hansard*, 7 October 2011, p. 9.

53 Warren King, Defence Materiel Organisation, *Committee Hansard*, 7 October 2011, p. 9.

54 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 17.

significant problems—within budget: schedule delays are generally cited by DMO as the area where improvements are required.

14.39 Contracting arrangements that properly allocate risk between Defence and industry and provide adequate incentives for industry to perform well are one element of Defence's procurement arrangements that must be given consideration. For example, the GAO indicated that once the early acquisition planning is complete, Department of Defence 'must select contracting instruments that match the needs of the acquisition and protect the government's interests'.⁵⁵ It stated:

Of primary concern during this phase should be the proper allocation of risk between the government and contractor and ultimately what is in the best interests of the government.⁵⁶

14.40 The GAO referred to the range of contract types—from fixed-price to cost reimbursement—but noted that each 'comes with a different level of cost or performance risk for the government'.⁵⁷ According to the GAO:

Fixed-price contracts are generally considered to be the lowest risk to government because the onus is on the contractor to provide the deliverable at the time, place, and price specified in the contract.⁵⁸

14.41 A RAND study into submarine programs noted that:

The government must understand the relationships between desired performance and cost and set goals that should keep the program within cost constraints. The government should also use the contracting structure to incentivize private-sector contractors to design and build the submarine in the most cost-effective manner.⁵⁹

14.42 The study went on to suggest that fixed-price contracts were not the most appropriate for projects with risk and uncertainty:

Although fixed-price contracts can reduce risks of cost growth to the government, they are most appropriate when there is little program risk and

55 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 5.

56 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 5.

57 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 5.

58 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisition: Managing Risk to Achieve Better Outcomes', 20 January 2010, p. 6.

59 RAND National Defense Research Institute, *Learning from Experience*, vol. I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 6.

uncertainty and when few changes are anticipated. With the risks and uncertainty of a new program, especially one that differs in some way from previous programs, a cost type of contract is probably most appropriate. Whatever type of contract is used, both the government and the private sector should develop realistic cost and schedule estimates. Any differences in the cost estimates of the government and the private sector should be understood and discussed between the two parties with the ultimate goal of agreeing on the estimates and schedules.⁶⁰

14.43 The Commonwealth's policy framework for National Public Private Partnership states that to achieve value for money, risks are allocated to the party best able to manage them. In 2002, the then Deputy Auditor-General of the ANAO stated:

The public sector should be prepared to fairly compensate the private sector for taking on risk (sometimes, some of these costs are not immediately apparent in the public sector). At the same time, we need to be alive to the possibility that the private sector may offer to take on risks that it is not able to control with potential consequential implications for the public sector, both at an operational level and in terms of the project's value-for-money assessment.⁶¹

14.44 As noted earlier, for the most part, DMO has kept the majority of projects within budget partly through use of fixed-price contracts. This risk-adverse management approach may have a downside.

Industry perspective

14.45 Industry representatives have raised concerns about the current use of fixed-price contracts, suggesting that they are not optimally allocating risk between Defence and industry. The Australian Industry Group Defence Council noted the need to ensure a proper sharing of risk between the Commonwealth and industry, especially for complex acquisition and sustainment projects. It was of the view that Defence had the fundamental structures about right but that further work was needed to improve tendering and contracting arrangements. The Council recommended that, early in the capability development process, Defence identify 'the actual level of risk associated with every new major equipment acquisition and sustainment project'. It suggested further that Defence tailor acquisition strategies to match the risk, including a proper sharing of the risk, between the Commonwealth and industry'.⁶²

14.46 The Defence Council noted the Commonwealth's shift to fixed-price contracts as the standard contract arrangement continued to cause difficulties for companies seeking to price complex equipment acquisitions, especially those involving high-risk

60 RAND National Defense Research Institute, *Learning from Experience*, vol. I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 54.

61 For example see Ian McPhee, Deputy Auditor-General for Australia, 'Risk Management and Governance', Speech, National Institute for Governance, Canberra, 16 October 2002, p. 9.

62 Australian Industry Group Defence Council, *Submission 10*, p. 5.

combat system integrations. According to the Council, 'attention should be given to more flexible contracting arrangements, including Cost-Plus provisions during development phases of complex projects'.⁶³ By using more flexible contracting arrangements during the earlier development phases of projects, the Defence Council noted that both Defence and industry would be able to better identify the level and sharing of risk, and develop improved cost and schedule estimates.

14.47 Similarly, an industry representative referred to risk and risk management and noted that industry was bearing the cost risk:

The risk has been shifted to industry. We now invest in the facilities at risk. When the programs run late, we have to hold that cash outflow problem.⁶⁴

14.48 Another industry representative informed the committee that as a result of the fixed-price contracts, industry was deprived of necessary flexibility in an evolving environment, and delivers only to the original contract specifications:

...in an environment where technologies are changing quickly, delivering five-year-old or six-year-old technology or capability to someone because we have not had the flexibility in that process, is not doing the right thing for the war fighter, who should be getting the best that we can deliver at the time.⁶⁵

14.49 Industry representatives cited examples where a project was delivered on budget, on schedule and to the contracted specification. It was received positively by DMO but then criticised by the capability manager for not meeting the operational requirement—because it had been years since industry had been contracted to deliver the project.⁶⁶ This observation further underscores the importance of having the capability manager directly involved in the acquisition process.

14.50 Babcock also raised the lack of flexibility in current contracting arrangements:

Hence DMO receives what it asks for in each contract, and no more, as the provider concentrates on delivering the specification only.⁶⁷

14.51 The alliance contracting model with ASC, Raytheon and the Australian Government used for the AWD was cited positively by both industry and DMO representatives as providing a more flexible arrangement where problems can be managed without affecting the schedule.⁶⁸ In this context, it is worth noting the

63 Australian Industry Group Defence Council, *Submission 10*, p. 3.

64 *Committee Hansard*, in camera.

65 *Committee Hansard*, in camera.

66 *Committee Hansard*, in camera.

67 Babcock Pty Ltd, *Submission 15*, p. 5.

68 *Committee Hansard*, in camera and AWD Systems Centre personnel in Adelaide, SA.

findings of the recent RAND study, discussed previously, which drew attention to the contracting arrangements for the Collins Class. It reported that:

With the *Collins* program, although there were a number of technical risks with unpredictable outcomes, the Australian government used a fixed-price contract that greatly limited the flexibility that both parties needed when problems emerged. As with the *Astute*, the fixed-price contract for *Collins* led to an environment in which ASC had no motivation to provide more than what it interpreted were its obligations under a poorly defined contract. At the same time, the Commonwealth, fearful that it might be held liable for contract changes it could not afford, paid no more than the original contract price. The interactive and open environment necessary for a development program was negated by the *Collins* contract.⁶⁹

14.52 The RAND study argued that fixed-price contracts were appropriate 'when there is little risk and uncertainty (e.g., when technologies are mature and when specifications are well defined) and when few changes to the design or build are anticipated'.⁷⁰ The study suggested that the ideal arrangement would involve holding the contractor responsible for risks under its control (such as labour and overhead rates, productivity, materiel costs, etc.) but the government being responsible for the other risks outside the contractor's control (such as inflation, changing requirements, changes in law, etc.).⁷¹ It stated:

The lesson here is that technical risks must be identified early, and much thought must be given to deciding, with industry, the appropriate form of the contract and the incentive and risk sharing clauses built into the contract. Getting this wrong can almost guarantee problems with the conduct of the program and the relationships between the government and the contractor.⁷²

14.53 One industry representative informed the committee that his company had not had a discussion to mitigate the risks that eventuate as programs go for a very long time. He explained that discussion is around the commercial aspects, and not about spending money to assure capability, which suggested a focus on a commercial result rather than a capability delivery result.⁷³ Similarly, with regard to contracting and avoiding risk, the Submarine Institute of Australia argued in its submission that 'the methods apparently employed by the DMO to minimise risk (e.g. very strict attention

69 RAND National Defense Research Institute, *Learning from Experience*, vol I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 32.

70 RAND National Defense Research Institute, *Learning from Experience*, vol I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 32.

71 RAND National Defense Research Institute, *Learning from Experience*, vol I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 32.

72 RAND National Defense Research Institute, *Learning from Experience*, vol I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 33.

73 *Committee Hansard*, in camera.

and adherence to the letter of each contract, at the cost of actual progress) do not bode well for a highly successful program in SEA 1000'.⁷⁴

14.54 Evidence indicated that, as a means of mitigating contract risk, Defence should consider carefully how to achieve best value for money by providing an incentive to the contractor to meet or exceed program objectives, including cost, schedule and performance.⁷⁵

Committee view

14.55 Increased industry involvement earlier in the capability development process is clearly an important factor in the successful delivery of defence capability. Having industry input prior to projects being added to the DCP would help to prevent unrealistic expectations on the part of CDG, while industry involvement in early phases would help CDG and DMO to estimate costs and risks more accurately. Similarly, industry input in the design phase from sustainment experts would allow for more realistic estimations on sustainment costs during the earlier phases of projects.

14.56 The state of the relationship between Defence and industry—in particular between DMO and industry—indicates that there is room for improvement. The consequences of unproductive relationships between DMO and industry have been clearly demonstrated. This relationship is exacerbated by the non-involvement of the eventual client i.e. the capability manager. Additionally, the need for better business acumen and negotiating skills has been acknowledged by both DMO and external observers, and improvements in this area would allow DMO to negotiate more effectively with industry and achieve greater value for money in contracts.

14.57 Finally, there is scope for improvement in DMO's contracting arrangements with industry to achieve more appropriate allocation of risk between the government and industry—this may require a shift toward more flexible contracting arrangements and away from the current practice of fixed-price contracts. To be in a sound position to decide and negotiate the form of contract best suited for a particular acquisition, DMO needs skilled specialists in contracting but also needs to have a deep knowledge of the product it is purchasing—in other words it needs the right people in the right place.

74 Submarine Institute of Australia Inc, *Submission 9*, p. 3.

75 RAND National Defense Research Institute, *Learning from Experience*, vol I, Lessons from the Submarine Programs of the United States, United Kingdom, and Australia, 2011, p. 33.

Chapter 15

Conclusion

...it takes many things for an acquisition to succeed, while only one source of unmanaged risk can cause a poor outcome.¹

15.1 This chapter draws together the evidence presented in the previous chapters in order to answer one of the key questions driving the committee's inquiry—whether entrenched structural impediments to efficient and effective leadership within Defence are at the source of Defence's procurement woes. In this report, the committee has sought to establish whether a reallocation and redefinition of roles, functions and responsibilities is required. Indeed, whether the current management matrix needs to be overhauled or even dismantled.

Challenges and Defence's responses

15.2 The committee notes and supports evidence that highlights the competence, dedication and hard work of people at all levels of Defence's procurement process.

15.3 Defence projects for acquiring major capital equipment face an array of internal and external forces and influences that create significant difficulties for Defence. In fact, such projects are of a scale and complexity that they present 'formidable and ever-increasing challenges'.² The problems identified in defence procurement, however, are largely a function of the Defence organisation's own making—unintentionally self-inflicted. They include: inadequate planning and scoping of project; poor risk management from beginning to end of project; failure to appreciate the developmental nature of the project or complexity with integration; poor project management; underestimation of defence industry capacity; lack of skilled workforce; inadequate contracting arrangements; insufficient consideration of through-life support; and a breakdown in the relationship between the relevant service, DMO and contractors.

15.4 The committee finds that the current management structure in Defence has produced an organisation that lacks a robust risk regime: an organisation where its personnel are insensitive or unresponsive to risk, where no one owns risk and is incapable of learning lessons from past mistakes. In brief, Defence is currently an organisation that cannot anticipate, understand or manage risk—a fundamental flaw in an organisation that undertakes large-scale and complex projects that are in essence engineering operations. Importantly, this failure to own risk and to learn lessons is not

1 Paul Francis, Michael Golden and William Woods, Statement before the Subcommittee on Defense, Committee on Appropriations, House of Representatives, 'Defense Acquisitions: Managing Risk to Achieve Better Outcomes', 20 January 2010, pp. 1–2.

2 Ministry of Defence, *The Defence Strategy for Acquisition Reform*, Presented to Parliament by the Secretary of State for Defence, February 2010, Foreword by Lord Drayson.

a process problem—it is clearly a weakness deep within the organisation that permeates outwards and effectively precludes people from taking responsibility and being accountable.

15.5 The inability of Defence to learn from past mishaps is a particularly salient point. Defence may well argue that the failures noted in this report are drawn from history: but if it cannot or will not apply lessons from previous projects to current and future ones then it is destined to repeat them. Learning lessons is not only about keeping a risk register or a data base—that is simply a process—it about those lessons becoming part of the corporate knowledge.

Process versus genuine reform

15.6 Defence's responses to the evident failings in their procurement projects have tended to focus on process. Even its most recent initiatives to clarify responsibilities and strengthen accountability look to process for solutions—re-badging and improving the Initiation and Project Review Boards; emphasising the role of joint project directives, enforcing Materiel Acquisition Agreements (MAAs); and introducing project charters (Mortimer recommendation). If implemented and properly adhered to, such measures should go some way to reduce the opportunities for a project to slip off the tracks. The committee is concerned, however, that such measures merely promote form over substance and it remains to be convinced that in practice they are effective.

15.7 The committee has highlighted prevailing practices and circumstances in Defence that sabotage its endeavours to realise the objectives of these initiatives. They include non-compliance with policy and guidelines, an environment that has generated multiple and confusing layers of bureaucracy, poor linkages between key agencies, and a lack of, or mismatch of, appropriate skills. Thus, despite Defence's confidence in its initiatives, the committee envisages that, with the passage of time, the damaging behaviours, which have simply been papered over, will again surface to perpetuate the pattern of poor performance. For example, the committee fears the potential for the Project Initiation and Review Board to turn out to be a simple re-packaging of the Options Review Board and hence replicate the same shortcomings—an unwieldy committee made up of a number of groups lacking authority and whose members do not have the required experience or specific competence for the task. The committee has heard nothing to indicate that, despite current enthusiasm for the boards, they will not revert to form.

15.8 Indeed, the weight of evidence indicates that not only has Defence's preoccupation with process been misguided but it has been counterproductive. In response to identified problems, Defence has created a procurement process that is convoluted and overburdened by administration. The committee is of the view that the entire organisational structure of Defence must be simplified and streamlined. Only by reducing the number of stakeholders (groups) involved in the process can the excessive administrative burdens and committees be reduced.

15.9 Defence is also convinced that it has a robust quality assurance framework with the revamped gate reviews and the independence of the DSTO, DMO and CIR Div. It is of the view that these independent bodies provide the necessary contestability to ensure that decision-makers are provided with a range of well-considered, impartial and specialist advice.

15.10 In this regard, the committee acknowledges that Defence has a quality assurance framework that is designed to provide internal contestability and external scrutiny. But again, the committee finds that the overall impression of Defence as an organisation with a healthy and open approach to independent review and diversity of views fails to match facts.

15.11 All sectors, including industry and defence analysts, supported the work of the gate review boards. A very worrying development noted in the ANAO's audit of gate review boards, however, was the growing tendency for a manager with a direct connection to the project to be appointed chair of the review. According to the ANAO this trend has increased in recent times:

During the first year DMO conducted Gate Reviews (July 2009–June 2010), 33 per cent of Gate Reviews of ACAT I and II projects were chaired by a manager with some responsibility or accountability for the project under review. During the second year (July 2010–June 2011) this increased to 42 per cent. During the first six months of IPPO's management of all Gate Reviews this increased further to 50 per cent.³

15.12 Throughout this report, the committee has referred to numerous instances of non-compliance with policy or guidelines. The gate review examples cited by the ANAO throw into sharp relief, how genuine, sound reforms can be rendered useless by a management structure that cannot or will not exert authority. This latest clear disregard of policy whereby the independence of gate review chairs was compromised underlines the committee's scepticism about the effectiveness of other recent initiatives such as project charters, MAAs, and the project initiation and review board.

15.13 In the committee's view, Defence have been tinkering at the margins of the problem, giving the impression that by improving process, the desired change in behaviour will follow. The committee believes that such an approach only serves to mask fundamental weakness in the overall management structure of Defence and its major acquisition programs. Thus, despite a raft of reforms and reliance on Defence quality assurance frameworks, the persistent pattern of poor project performance continues. Problems such as mistaking a developmental project for a genuine off-the-shelf product indicates that this internal filter and the gate reviews have not worked as well as they should. Indeed, the reforms have done nothing to prevent highly developmental projects being submitted to the Chief of the Defence Force and the

3 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 3.68.

Secretary of the Department and ultimately to government as off-the-shelf products. Clearly, the answer is not more process.

15.14 With regard to the independent advice provided by agencies such as DSTO and DMO, and advice obtained (or not) from domain experts and industry, the committee again finds Defence's depiction of their effectiveness at odds with reality. The committee cited observations about DSTO's advice not receiving the respect it deserves, of Defence agencies generally undervaluing technical advice and, in some major projects, downplaying, misinterpreting or even completely disregarding specialist domain advice such as pre-contract T&E reports.

15.15 The committee also noted Defence's response to Mortimer's recommendation that the CEO DMO 'should provide independent advice to Government on the cost, schedule, risk and commercial aspects of all major capital equipment acquisitions'. According to Mortimer, the CEO DMO should also be a permanently invited adviser to government committees considering defence procurement.⁴ Defence made clear that the views of organisations including CDG, DSTO, and capability managers 'must be properly reflected in the cabinet submissions'.⁵ It stated further, however, that 'it would not be appropriate for DMO to make coordinating comments on Defence cabinet submissions because, for procurement matters, DMO is intimately involved in preparing these submissions'. Defence's approach contradicts the Mortimer principle and effectively negates one element of contestability which relies on independence for its effectiveness.

15.16 It is also important for agencies' advice and recommendations to be clearly discernible so that they can be held accountable for them. But Defence's 'one view', mantra effectively removes diversity of opinion provided by specialist agencies, experts and senior Defence leaders by presenting just one position. A number of witnesses acknowledged that it was appropriate for Defence to speak with one voice 'provided that what that one voice was saying had been arrived at via a process of thorough contestability and lots of frank and fearless advice, carefully listened to within Defence'.⁶ Unfortunately such is not always the case in Defence.

Disenfranchised capability managers

15.17 The most glaring consequence of Defence's failure to effect meaningful reforms has been the disenfranchisement of the capability managers. Capability

4 The Mortimer Review recommended (recommendation 2.10) that the CEO DMO should provide advice to government on the cost, schedule, risk and commercial aspects of all major equipment acquisitions, and be a permanently invited adviser to government committees considering defence procurement. Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, p. 25.

5 Department of Defence, *The Response to the Report of the Defence Procurement and Sustainment Review*, p. 25.

6 Dr Brabin-Smith, *Committee Hansard*, 12 June 2012, p. 36.

managers ultimately operate the equipment or platform being acquired and are responsible for ensuring that the acquisition is fit-for-purpose. In 2003, Mr Kinnaird argued that:

Capability managers, the most prominent being the Service Chiefs, should be made responsible and accountable for monitoring and reporting to government on all aspects of approved defence capabilities.⁷

15.18 This responsibility would be for 'the whole of capability from the point where government approves a particular capability option, that is at second pass approval, through to the time that the capability is retired from service'.⁸ Mortimer also made a number of recommendations that, if implemented properly, would make capability managers an integral and engaged part of the acquisition process. This would include capability managers reporting regularly to government 'on the status of the capability development initiatives for which they are accountable'.⁹

15.19 Yet evidence before the committee is unequivocal—capability managers have been left out of the acquisition loop. For example, Mr King accepted that there was a time post Kinnaird where the centralisation of the capability development under CDG and the DMO operating as the acquisition organisation 'appeared to disenfranchise the capability managers in the process'.¹⁰ He stated that the situation led to 'a period where, despite having the two pass process in place, the CM, CDG and DMO were not interacting, coordinating and integrating as well as they might'. This breakdown in communication was particularly evident in the maritime space. Mr King explained in simplified terms what he thought had happened:

...the customer base—the capability manager—had developed a feeling that DMO would just pass something or throw something over the fence at them and they would have to take it. I think they had fallen into a mode of 'Well, I'll see if I like it when I get it.'¹¹

15.20 It is clear that capability managers have much ground to recover and must regain authority over key areas of capability development, particularly the responsibility for determining the technical specifications they require for acceptance into service. Most notably, this applies to the Chief of Navy. Capability managers must also have adequate and appropriate resources, including a core of trained professional engineers, in order to exercise their responsibilities. They must also be held to account for the way in which they exercise that authority, which means that their decisions must be traceable back to them.

7 Department of Defence, *Procurement Review 2003*, p. vi.

8 Department of Defence, *Procurement Review 2003*, p. 24.

9 Refer to paragraphs 7.19–7.21 and also Defence Materiel Organisation, *Going to the Next Level*, the report of the Defence Procurement and Sustainment Review, 2008, recommendations 2.6, 3.1–3.4, pp. 23, 32–34.

10 *Committee Hansard*, 7 October 2011, p. 54. See paragraphs 8.31–8.34 of this report.

11 *Committee Hansard*, 7 October 2011, p. 54.

15.21 Defence believes that capability managers are now 'upfront' and cite the fact that they currently sign the MAA as evidence of that engagement. The committee has already expressed its doubts about the effectiveness of this measure. It should be noted that MAAs have been in place since 2005, yet they have failed to do their job. An important issue for the committee is how to prevent a situation developing that effectively disenfranchises the capability manager from the acquisition process.

15.22 In this report, the committee has shown repeatedly that while Defence has correct practices and procedures on paper, it fails to implement them properly. More tinkering of manuals and guidelines and policy statements and adding more process to an already overburdened one will not work. If not accompanied by genuine changes in management, such initiatives will simply compound Defence's problems. In this regard, Defence needs to pay close attention to creating an environment, especially through its management structure, that is inclusive, counters the tendency for groups to work in silos and allows those with responsibility to exercise their authority. In doing so, Defence should also be intent on removing layers of administration not adding to them.

15.23 The committee is recommending a restructuring of Defence that would ensure capability managers have a central role in the acquisition and sustainment of their major capital equipment. The intention would be to institute direct contractual agreements after second pass between clients (capability managers) and contracted providers with no third party involvement. Without such a standard commercial approach, there will be no change, only more process and more red tape clogging up the system.

Continuing struggle for skilled people

15.24 The committee also believes that by focusing on process to solve procurement problems, attention may be diverted from the more important matter of finding the right people for the right position so they can drive necessary change or implement process more effectively and efficiently. One industry representative observed:

...Organisational structures only go part way towards solving performance issues...I could have any organisation structure I like that aids communication and interaction. If [we] do not have the right people with the right competencies and the right way of behaviours, then the organisational structure is worth nothing.¹²

15.25 Throughout the report, the committee has underlined the futility of Defence resorting to more information, more process, more people and committees or paperwork rather than having 'good-quality, appropriately qualified and current staff in correct positions'.¹³ If Defence wants to be a smart customer then it needs knowledgeable people with a deep understanding of what it intends to buy and highly

12 *Committee Hansard*, in camera.

13 See paragraphs 11.2–11.7 of this report.

skilled experts, who understand commercial realities and are able to negotiate with contractors to deliver value for money for the Commonwealth. For example, a number of witnesses referred to inexperienced and inadequately skilled project managers in DMO. In this regard, a representative from one of the prime contractors observed that a few of the project managers with whom he had worked were good people but 'way out of their depth trying to manage a project of which they had little experience'—'a recipe for disaster'.¹⁴

15.26 Too often uniformed people, with operational experience and technical knowhow, are engaged as desk officers in general project management, costing of proposals and administrative tasks. They feel undertrained and ill-suited for the tasks at hand and moreover they tend to be on short term postings of less than three years. Clearly, it is important when seconding military people to CDG and DMO, where relevant, that they are placed where their skills and experience can be best utilised. A three year posting, or less, in a managerial position for uniformed personnel is an inefficient use of otherwise very skilled and experienced people. The emphasis must be on finding the right people and placing them in the right position.

15.27 The critical shortage of engineers and allied technical skills is a matter that requires immediate and serious attention. While there are many external forces undermining Defence's efforts to attract and retain skilled engineers and technicians, the committee is of the view that it is imperative for Defence to grow its engineering and allied skills base. Indeed, many witnesses indicated the skills shortage in Defence must be addressed as a priority: that 'the work on retaining and attracting key personnel cannot wait until tomorrow'.¹⁵ In the committee's view, Defence requires a far more targeted and concerted effort to build up a critical core of skills within its major acquisition groups and agencies. This also requires the creation of opportunities to gain and maintain relevant experience.

15.28 The committee is also concerned about competition between the groups in Defence involved in procurement and sustainment for skilled personnel, particularly in the engineering and technical areas, where the supply is already under pressure from demands from the private sector. The committee proposes a model for the consolidation of technical skills into each of the Services, which should address this waste. In this new organisational arrangement, capability managers would be responsible for the primary technical input to all capability proposals, test and evaluation in line with central policy, and all operational and sustainment management. This applies especially in respect to large and complex single service capability, most notably in Air Force and Navy. In this way, the committee believes it should be possible to:

14 *Committee Hansard*, in camera.

15 The Association of Professional Engineers, Scientists and Managers Australia, *Submission 36*, paragraph 8.

- minimise the inefficiency caused by intra-organisational postings and duplication;
- enable capability managers to rebuild their design engineering, logistics and technical skill base capable of understanding the most sophisticated levels of modern defence technology and effectively balancing operational and sustainment considerations;
- provide meaningful and rewarding skill paths for technically skilled personnel whether they be uniform or civilian, noting that stability and continuity of skill may be more achievable from the latter;
- provide complementarity of skills rather than the current internal competition;
- retain skilled staff on long term projects from conceptual development through to sustainment and disposal from within one organisation, fully and singly accountable;
- provide a stronger technical counter to industry in contract negotiations and management, and
- establish greater permanence to Defence's capacity to follow rapidly escalating technical complexity of defence capabilities around the world.

15.29 Equally, DMO with its reduced role should be better able to concentrate on building the high level skills needed for tendering, contracting and project management (whether through recruitment or contracting from industry). These skills are critical to support the capability managers who will now be responsible for the acquisition of capability. DMO as the centre of excellence would also have an independent role in assuring the quality of information going to government for initial purchase decisions.

15.30 Accepting that the Services role will be expanded and DMO's role changed, the committee recognises the implications of this model for capability planning in Defence Strategy Group and CDG. With regard to contestability, the planning and reporting arrangements will need to ensure that the independent voices of DMO, DSTO and expert agencies such as T&E can be heard by key decision-makers without fear or favour.

Underperforming organisation

15.31 Overall, the committee found that Defence is an organisation that has:

- a growing disconnect between strategic guidance and capability development with the current foundation document—the 2009 White Paper—setting an unrealistic and unachievable acquisition program for the ADF's future capability;

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- a culture of non-compliance with policy guidelines and practice manuals; where personnel get 'bogged down' with too much paper work, produce a 'certain amount of nugatory work' and 'miss the important things going on';¹⁶
 - confused and uncertain lines of responsibility and accountability that are too diffuse to be effective—the organisation is unable or unwilling to hold people to account;
 - a poor alignment of responsibility due to the excessive number of groups and agency functions, which gives rise to unhealthy management and organisational relationships—for example capability managers removed from active participation in an acquisition;
 - weak compliance assurance with and between agencies or groups creating an environment where, for example, DSTO assessments or technical advice from domain experts can be undervalued, or even discarded without checks and balances to make sure dissenting voices are heard by decision-makers; and
 - a poor understanding of the commercial world and as a consequence Defence is yet to engage actively with industry as a collaborative partner in capability development and acquisition.

15.32 The challenge for Defence is to change an organisational structure with entrenched attitudes that despite repeated reforms:

- cannot learn lessons from past mistakes;
- still resorts to changes to process rather than implementing genuine organisational reforms designed to clarify responsibilities and make individuals accountable for their decisions and performance;
- has effectively disenfranchised the end users—capability managers—who have been left on the sidelines, without authority over key areas of capability, procurement and sustainment;
- disempowers project managers, most of whom are diligent and hardworking, but, without clear lines of delegated authority, are unable or unwilling to make decisions and take responsibility;
- fails to understand and appreciate the importance of contestability and simply cannot, or refuses to, comprehend the meaning of 'independent advice';
- despite having a 'One Defence' view does not operate as an integrated enterprise but rather remains an organisation composed of separate groups working to their own agendas;
- struggles to attract and retain people with the required level of skill and experience to support acquisition activities including negotiating with business, tendering and contracting, and particularly engineering, having over

16 See observations recorded at paragraphs 6.29–6.30.

the past 15 years or more allowed its mainstay skills to atrophy especially the hollowing out of technical skills in Navy;

- undervalues technical advice and has serious shortcomings in technical analysis, critical to engineering based projects; particularly its downgrading of the importance of T&E; and
- is yet to achieve the status of smart or intelligent customer and, for some major projects, has a troubled history with its suppliers—poor tendering and contracting practices and overall lack of business acumen.

Need for structural reform

15.33 The recommendations in this report take account of Defence's attempts to remedy shortcomings. They also recognise that Defence has made these efforts while simultaneously attempting to comply with multiple reform agendas arising from a string of government reviews and directives. The central overriding recommendations, however, underscore the importance of Defence becoming a self critical, self evaluating and self correcting organisation. To do so, the committee believes that leadership, accountability and the correct alignment of responsibilities is required. This means that roles and responsibilities should be clearly defined so that a single point of accountability is attached to single senior positions, not organisational structures. These roles and responsibilities should also be complementary.

15.34 The headline recommendations deal with much needed organisational change in Defence in order achieve the correct realignment of responsibilities and functions of relevant agencies, and provide them with the skills and resources they need to fulfil their obligations. In this context, the emphasis is on bringing increased clarity and transparency to responsibility and who owns it—to reduce the diffusion of responsibility and decision-making. More specifically, the recommendations are intended to:

- return responsibility to capability managers and make them accountable for decision-making and performance under their areas of authority;
- make DMO a streamlined and specialist acquisition agency;
- inject real contestability into decision-making and guarantee that the government is provided with independent advice from key agencies—DSTO, DMO and technical experts; and
- ensure that Defence's focus is on obtaining the right people with the right skills and experience and matching their skills with the right job: that Defence also manages its skill base in such a way that agencies complement their skill requirements and do not compete for skills from the same pool of specialists.

Recommendations—proposed model

15.35 The committee proposes a model that, after second pass decision, allocates one single point of accountability for every project to the relevant capability manager, supported by financial delegation and budget control. It reduces CDG's role with

savings, and limits DMO's functions—thus eliminating much overlap. It also reinforces the Kinnaird/Mortimer concept for internal independence for the purposes of genuine contestability, and it reduces the waste of skill through inappropriate placement, duplication and misalignment of skills. The committee's proposal also introduces a direct client/provider model without any intermediaries, with precise accountability. Under this model, the DMO would become a contract and project management specialist supporting the capability manager at relevant points in the acquisition and sustainment cycles.

15.36 This model would remove the unnecessary layers of current vested interests and streamline the process through a single point of accountability. In short, it is a greatly simplified model aided by significant streamlining. It builds on the strengths of accountability in the services (as identified by the Black Review) and seeks to harness the learning and potential for alignment across the three services envisaged with the creation of DAO and DMO.¹⁷

Strategic Policy Division

Recommendation

paragraph 8.63

15.37 The committee recommends that all matters concerning strategic planning, capability planning, industry policy, costing and all matters for the coordination of contestability from DMO, DSTO and industry should remain with the current Strategic Policy Group and CDG in combination.

Recommendation

paragraph 11.93

15.38 The committee recommends that Strategic Policy Group and CDG should have more strategic analytical skills to test rigorously and independently the capability managers' development of the Defence White Paper capability elements, restoring the creative tension but free of competition for skills.

Capability managers

15.39 The committee recognises that capability managers have been sidelined with CDG and DMO assuming key positions during the acquisition phase. To ensure that they have the power and capacity to discharge their duties, capability managers require the authority that now resides with the CDG as departmental coordinator and centre of power. In the committee's view, the priority should be on giving the capability manager appropriate control over the acquisition ensuring all the while that the responsibilities of CDG, DMO and the capability managers are complementary.

17 Refer to paragraphs 7.59

*Recommendation**paragraph 8.64*

15.40 The committee recommends that accountability for all service specific procurement items should be exclusively transferred with budgets to service chiefs, who should be responsible for all procurement and sustainment of their materiel. This transfer of responsibility occurs after proposals have been thoroughly tested internally and externally and after government decisions are made at second pass.

*Recommendation**paragraph 8.65*

15.41 The committee recommends that the capability manager should have expanded responsibility and importantly financial responsibility after second pass. Under the committee's recommended model, for all acquisition projects, the capability manager would be the sole client with the contracted suppliers; DMO's role being limited to tendering, contracting and project management specialities, strictly according to the terms of the second pass decision. All specification changes should be monitored by CDG and put to government for agreement, as currently the practice, with the capability manager to be fully accountable.

15.42 The committee is of the view that in considering the restructuring of the organisation, Defence must look closely at the skills required by the respective agencies and while maintaining strong contestability, ensure that specialists are located where they are most needed and not unnecessarily duplicated or spread too thinly throughout the organisation.

15.43 Clearly, capability managers need to have the technical experts within their service able to provide high level specialist advice on a project proposal from its inception through acquisition, delivery and sustainment. They should have the responsibility for growing, developing and retaining that skills base. This is particularly so, given that under the preferred model they are to be largely responsible for technical input before and after contract—that is at the heart of the new accountability the committee seeks to achieve.

*Recommendation**paragraph 11.94*

15.44 The committee recommends that, after second pass, capability managers have sole responsibility for acquisition projects, supported by staff seconded through the DMO, as well as maintaining relationships with contractor and sub contractors.

Capability Development Group*Recommendation**paragraph 8.66*

15.45 The committee recommends that all matters of coordination, overall budget management monitoring and reporting after second pass should remain in the current CDG, but without budgetary control.

Defence Materiel Organisation

15.46 If capability managers are to be empowered; if they are to exert greater control over the acquisition of a capability they will use, then DMO's role must change as well. To be effective, DMO must be responsible for the standards to be applied to tendering, contracting and project management and have independent access to the minister.

15.47 Responsible for setting the standard for contracting and project management for the acquisition of the majority of capital equipment, DMO is a key stakeholder in the capability life cycle. It brings a particular perspective to capability development and its voice should be included in advice to CDF and Secretary, and to minister and cabinet. For the purposes of genuine contestability, organisations such as DMO and DSTO should be truly independent of Defence with accountability direct to the minister pursuant to ministerial directive. The Ministerial Directive was a key accountability document for defence capital projects between 2005 and 2008. It established the CEO DMO's direct obligations to the minister, his overarching responsibilities and his management priorities in relation to DMO's business outcomes.

Recommendation

paragraph 10.82

15.48 The committee recommends that the minister review, update and reinstate the Ministerial Directive to CEO DMO. The directive is intended to set boundaries and expectations and establish clear accountability for achievement of Defence capital acquisition programs. It should include the requirement that CEO DMO provides independent advice to the minister in DMO's specialist area of major capital projects.

Recommendation

paragraph 10.83

15.49 The committee recommends that the government should again look carefully at making DMO a statutorily independent agency, as previously recommended by Kinnaird and Mortimer, but rejected by Defence and government. The CEO's salary should be set by the Remuneration Tribunal and, as stipulated in the previous recommendation, direct access to the minister should be restored pursuant to a reinstatement of a ministerial directive which has fallen into disuse. The intention behind this recommendation is to find a better way to: guarantee DMO's independence and assist it to provide frank advice to government, have its functions and responsibilities spelt out in legislation and allow it more latitude to employ specialist personnel.

Specialist acquisition organisation

15.50 For almost a decade, DMO has been actively endeavouring to make itself a more business-like organisation with the required skills to function as a high performing acquisition agency. The committee recognises the work the organisation is doing to achieve that objective but notes that it is falling short. The committee notes in particular that the skills of uniformed personnel seconded to DMO may not match the

tasks they are required to undertake, which is further complicated by their short term tenures. The committee recognises that the DMO needs highly skilled project managers and also tendering and contracting specialists.

Recommendation

paragraph 11.95

15.51 The committee recommends that the government ensure that the DMO has the funds, means and government support necessary to consolidate and build on the efforts already underway to develop its multidiscipline skills base with the ultimate goal of achieving a world-class acquisition community.

Recommendation

paragraph 11.96

15.52 The committee recommends most strongly that the organisational changes specified in the recommendations dealing with skills be adopted, and that the streamlining and consolidation of skills identified be the primary focus and outcome in securing that change.

Defence Science and Technology Organisation

Recommendation

paragraph 10.84

15.53 The committee recommends that the minister consider how best to ensure that DSTO's specialist advice on technical risk associated with Defence's major capability developments are conveyed to government in a clear and accurate way. The Ministerial Directive to CEO DMO may serve as a model.

Recommendation

paragraph 10.85

15.54 The committee recommends that the Technical Risk Assessments and Technical Risk Certifications (currently presented to the Defence Capability Committee and the Defence Capability and Investment Committee) should be a joint activity overseen by the relevant Service T&E agency head and the Chief Defence Scientist. In light of past underestimation of technical risk, the intention would be to review past experiences and current documentation to determine how risk assessments could be better presented to non-technical experts to minimise the opportunity for risk assessments to be misinterpreted.¹⁸ The reporting structure also needs to be transparent such that assessments cannot be ignored without justification to the key decision-makers (e.g. minister).

18 Defence informed the committee that the Technical Risk Certificate for each project is 'taken verbatim into the advice to Government'. *Supplementary Submission 21B*.

Other recommendations

15.55 In addition to changing the organisational structure, the committee also recommends action be taken on matters such as the proposed purchase of the 12 new submarines, Air 8000 Ph 2, the 2013 White Paper, the DCP, MAAs and gate reviews and finally on T&E.

Future submarines SEA 1000—applying lessons

15.56 The committee is very concerned about the current unease expressed by a number of defence analysts regarding decisions already taken on the 12 new submarines. Recent announcements in relation to studies to consider procurement options for the future submarines together with studies in relation to an industry skills plan are encouraging. Nonetheless, early decisions reflect troubling signs that one of the centrepiece projects listed in the 2009 White Paper is yet to undergo thorough analysis and consideration.¹⁹

Recommendation

paragraph 3.20

15.57 Because this project is still at an early stage, and based on the RAND study, the Coles Report, independent defence analysts and the past performance of major Defence acquisition projects, the committee recommends that government and Defence start work immediately to:

- ensure that the program is directly managed by Chief of Navy supported by the ASC and DMO where relevant, the scientific community and the public—support must be both external to the program and internal within the navy and submarine community;²⁰
- avoid early lock-in through premature weapons systems choices;
- ensure that the capability sought is available and minimises developmental risks;
- take drastic action to address the serious skill shortages identified by RAND before a decision on assembly in Australia is made, regardless of type and design;
- ensure that the program is open and transparent—full disclosure throughout the program is necessary to obtain government, industry and public support;
- involve experienced people in key management positions—this requires a strategy to grow people so they are experienced in various disciplines—a top-level strategic lesson must be implemented far in advance of any specific program; and

19 Refer to paragraphs 3.3–3.18.

20 RAND, *Learning from Experience, Volume IV, Lessons from Australia's Collins Submarine Program* 2011, p. xiii

- listen to technical community concerns about risk—the technical community, supplemented by outside expertise from industry and allied technology partners as necessary, should understand the state of technology and the degree to which a new design extends that technology.²¹

Recommendation

paragraph 3.22

15.58 The committee recommends that government and Defence respond publicly to the committee's criticisms made in this report with respect to lessons not learnt, and outline the detailed process and all the options on which current planning on submarines is taking place.

15.59 The new White Paper presents an opportunity for the government and Defence to start to provide assurances that the decisions relating to SEA 1000 are based in sound, robust and fully considered analysis.

AIR 8000 Ph 2 (Battlefield Airlift—Caribou replacement)

15.60 Intended to enhance the ADF's intra-theatre and regional airlift capability, the Air 8000 Phase 2 project focuses on the provision of an intra-theatre airlift solution with some inter-theatre application.²² According to the Capability Plan, Phase 2 'will provide appropriate training support, which could include the provision of a Full Flight Simulator'.²³

15.61 The project has been accelerated in order to benefit from the advantageous pricing through an FMS case. It is assumed by Defence to be an OTS acquisition and therefore low risk.²⁴ The committee's attention is drawn, however, to the incomplete state of the US Air Force military certification activities. It appears that to date, Defence has not tasked people qualified and experienced in risk identification to complete a detailed evaluation of the gaps in capability and certification nor of the suitability of proposed training simulators to meet training needs. The pattern appears ominously familiar to the committee.

Recommendation

15.62 The committee recommends that the Chief of Air Force as the relevant capability manager require a report by the relevant T&E agency against the approved

21 A number of the recommendations were based on or taken from RAND, *Learning from Experience, Volume IV, Lessons from Australia's Collins Submarine Program 2011*, pp. xiii–xiv.

22 Department of Defence, *Defence Capability Plan 2011*, public version, pp. 71–72.

23 Department of Defence, *Defence Capability Plan 2011*, public version, pp. 71–72.

24 The Capability Plan states that 'the expected acquisition is a MOTS light tactical fixed wing airlift capability sourced from an OEM or through government-to-government (FMS) arrangement with few Australian industry opportunities'. Department of Defence, *Defence Capability Plan 2011*, public version, pp. 71–72.

Statement of Operational Requirement to provide early identification of potential issues that could delay introduction into service.

The 2013 White Paper—clarity on future capability

15.63 The committee's concerns in relation to the accuracy of Defence costings are reflected throughout this report in terms both of the overall budget and individual projects. In relation to transparency, the committee emphasises that greater detail needs to be provided in the Defence White Paper, portfolio budget statements and Defence Annual Reports. The committee urges the government to ensure that the 2013 White Paper provides clarity on future capability including funding commitments and scheduling underpinned by comprehensive analysis. The primary step toward better alignment between strategy and capability development would be to ensure that the White Paper—the corner stone document—sets out a realistic and achievable program for capability development.

Recommendation

paragraph 3.65

15.64 The committee recommends that the 2013 White Paper is prepared in such a way that all procurement proposals are costed and scheduled realistically and that Defence undertake comprehensive consultation with industry before decisions on inclusion are made, or alternately, a green paper is issued in advance for broader and open public consultation.

Recommendation

paragraph 3.66

15.65 The committee recommends that, commencing next financial year, Defence publishes as an addendum to its portfolio budget statements, all the current financial detail of planned capability from the time of inclusion in the DCP, right through to contract completion and provision for sustainment, for all projects over \$30 million for total procurement and lifelong sustainment.

Improving gate reviews

15.66 The committee has registered its lack of confidence in the effectiveness of the measures that Defence has taken to improve its procurement processes—project initiation and review boards, project directives, and gate review boards. This is not to say that the improvements to these mechanisms should not go ahead. As noted earlier, the committee is concerned about adding to an already bureaucratically overburdened process and any such measures to improve or introduce boards, directives, charters and agreements must always be guided by the principle of simplification wherever possible. With this principle in mind, the committee supports for example the strengthened gate reviews and believes that within the right organisational structure they hold promise.

15.67 A number of witnesses strongly supported Defence's revamped gate reviews which are an improvement on their predecessors especially the inclusion of two independent experts. The committee, however, does not want to see the contribution

of gate reviews rendered ineffective because of a fundamentally flawed management structure. The committee underlines the importance of Defence ensuring that the members of the gate review boards have the relevant skills, knowledge and competencies to scrutinise the proposals before them effectively. The committee would like to see the independence of the external members guaranteed and their ability to provide genuine contestability assured.

15.68 In this regard, the committee believes that the gate reviews should be overseen by a body that can exert its independence and authority to ensure that gate reviews remain at arm's length from the influence of those with a vested interest in the project under consideration. The contraventions identified by ANAO require Defence to look carefully at ways to safeguard the integrity of these reviews. The committee would also like to see concrete measures taken to ensure that the implementation of recommendations made by the review boards are monitored, recorded and reported to the relevant capability manager, CCDG and CEO DMO.

Recommendation

paragraph 10.77

15.69 The committee notes concern about the gate reviews losing their potency and simply becoming part of the process if overused. The committee believes an annual gate review for major projects would add value but recognises that the format and/or structure may need to be scaled to suit project scope/cost. The committee recommends that full gate reviews be:

- mandatory for major projects at the following specified milestones—DCP entry; project initiation and review board consideration; first pass approval; second pass approval; contract solicitation and contract negotiation; and
- mandatory when a project starts to diverge from original cost or schedule or when significant changes to scope are proposed.

Recommendation

paragraph 10.78

15.70 In light of revelations about breaches of policy such as chairs of boards having line management responsibility and of misunderstandings stemming from the documentation provided to the gate review boards, the committee recommends further that the Independent Project Performance Office (IPPO):

- exert stronger compliance checks to guarantee the independence and impartiality of the gate review board particularly enforcing the requirement that the chair of the board must not have line management responsibility for the project under review; and
- exercise greater scrutiny of the documentation provided to the review board to ensure that it is relevant and complete including reports on technical risk.

To ensure that the IPPO has the authority and resources to discharge its functions, the committee further recommends that Defence consider carefully whether the functions of the Office should be located in CDG or another agency.

*Recommendation**paragraph 10.79*

15.71 With regard to ensuring that the recommendations of the review boards are implemented, the committee endorses the ANAO's recommendation that 'Defence ensures that a control mechanism be deployed to monitor the status and completion of actions recommended by Gate Review Assurance Boards and agreed by the relevant executive'.²⁵

Test and evaluation—building capability

15.72 In its report on materiel acquisition and management in Defence, tabled in March 2003, the committee expressed a lack of confidence in Defence's 'capacity or will to address T&E concerns seriously'. Five years later, in its 2008 T&E Roadmap, Defence highlighted a raft of shortcomings in Defence's T&E pointing to a need for greater funding, improved training and attracting and retaining skilled and experienced personnel. Now, Defence is still talking about producing a manual—that is about process.

*Recommendation**paragraph 12.51*

15.73 The committee recommends that the government make a long-term commitment to building technical competence in the ADF by requiring Defence to create the opportunities for the development of relevant experience.

*Recommendation**paragraph 12.52*

15.74 The committee recommends that capability managers should require their developmental T&E practitioners to be an equal stakeholder with DSTO in the pre-first pass risk analysis and specifically to conduct the pre-contract evaluation so they are aware of risks before committing to the project.

15.75 Given that the capability to conduct this T&E and analysis needs to be extant prior to the commencement of any given project, the committee is concerned that cost pressures will lead individual services and projects to degrade this capability over time.

*Recommendation**paragraph 12.54*

15.76 The committee recommends:

- the immediate finalisation of central defence policy on T&E to be implemented by capability managers in line with the committee's recommended shift of full accountability for capability managers for all

25 ANAO Audit Report No. 52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, paragraph 4.21.

technical assessment of capability procurement and sustainment (independently assessed in conjunction with DSTO);

- full responsibility for the implementation of prescribed T&E processes be assigned to capability managers for all procurement activity from inception through to acquisition and sustainment; and
- each capability manager should ensure adequate skilled resources to oversee all T&E activity in line with central policy, as part of all acquisitions, including MOTS, as part of the capability managers' total responsibility for procurement, but prior to as well as after second pass.

Recommendation

paragraph 12.55

15.77 The committee recommends that Defence build on the capability already extant in aerospace to identify training and experience requirements for operators and engineers in the land and maritime domains and apply these to ADTEO. Capability managers will need to invest in a comparable level of training to enable their personnel to conduct (or at least participate in) developmental testing. The intention is to provide a base of expertise from which Defence can draw on as a smart customer during the first pass stage and to assist in the acceptance testing of capability.

Recommendation

paragraph 12.56

15.78 The committee recommends that Defence mandate a default position of engaging specialist T&E personnel pre-first pass during the project and on acceptance in order to stay abreast of potential or realised risk and subsequent management. This requirement to apply also to MOTS/COTS acquisition.

Industry—planning for investment and early engagement with Defence

15.79 Defence's approach to its dealings with industry—planning, acquisition and sustainment for defence projects—is essential for the successful delivery of *Force 2030*. Industry's ability to plan for, and invest in, people and facilities to deliver future defence projects is significantly dependent on the information Defence provides about its intentions. The DCP and Defence White Papers are the main public information tools and key planning documents for industry.²⁶ Clearly, from industry's perspective, they fall short in providing the level of certainty and confidence that industry requires to be an effective partner in capability development. Industry identified the following problems:

- access to information—the White Paper and CDP deemed to be inadequate and unreliable;
- workflows—feast and famine which severely affects industry's ability to retain staff—undermines business' confidence and willingness to invest in future projects;

26 See paragraphs 3.34–3.66 and 13.18 and 13.31.

-
- slow down rate in approvals—affects both confidence and also industry's ability to hold on to skilled workers;
 - industry not engaged early enough in the capability development process;
 - strained relationship between DMO and industry due to DMO's lack of business acumen, poor contracting practices;
 - contracting arrangements a disincentive for industry to value add; and
 - inappropriate risk sharing, fixed price.²⁷

*Recommendation**paragraph 13.55*

15.80 The committee recommends that Defence make their DCP a document that provides industry with greater certainty about its plans and intentions for future capability development to enable industry to invest with confidence in capability development. In particular, the committee recommends that the next DCP include:

- a schedule that provides anticipated timelines for the construction and delivery of all DCP items, with continuity the key feature;
- a detailed explanation on this acquisition schedule indicating the reasoning and analysis behind it and how Defence has taken into account demand flows; and
- reliable cost estimates.

15.81 Increased industry involvement earlier in the capability development process is clearly an important factor in the successful delivery of defence capability. In this regard, the committee welcomes the reinvigoration of the Capability Development Advisory Forum and the environmental working groups. They provide an ideal opportunity to involve senior defence industry representatives early in the capability development phase without compromising the integrity of an acquisition process.

*Recommendation**paragraph 14.28*

15.82 The committee recommends that Defence:

- continue to collaborate with industry to reinvigorate the Capability Development Advisory Forum and the associated environmental working groups as a means of engaging industry early in the capability development process. The committee recommends further that Defence ensure that such engagement with industry is a genuine two-way exchange of ideas and of information; and
- continue to support training programs such as Skilling Australia's Defence Industry (SADI).

27 Refer to paragraphs 14.37–14.54 for discussion.

Recommendation

paragraph 14.29

15.83 Given the reach back capacity of primes and their ability to tap into research and development of US and European headquarters, the committee recommends that industry consultation start at the earliest Defence White Paper and Defence Capability Plan stage.

Senator Alan Eggleston

Chair

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Additional Comments by Senator Nick Xenophon

Independent Senator for South Australia

In 2011, I could not support the Coalition's Defence Force Retirement and Death Benefits Amendment (Fair Indexation) Bill 2010 due to combined concerns over the affordability of such a measure, together with the potential of funding it through savings in Defence. In particular I raised concerns over the expenditure and efficacy relating to the Defence Materiel Organisation (DMO).

As a result of discussions with the Federal Government, the terms of reference to this inquiry were amended to allow for the examination of the effectiveness of the DMO, particularly in terms of its role, function, structure, cost and output.

1.1 DMO is responsible for the acquisition and sustainment of Defence capital equipment and to ensure that it achieves value-for-money project results. Failure to deliver cost effective projects has a direct impact on the funds available to support Australia's current and former serving men and women.

1.2 This inquiry is not the first time Australia's Defence procurement procedures have come under scrutiny, with five major reviews into procurement having taken place since 2003. This poses the question: how many more reviews must take place before meaningful and sustainable reform into procurement procedures is implemented?

1.3 Public confidence in Defence procurement will continue to be tested if projects continue to be scrapped years after their approval and only after billions of dollars worth of wasted expenditure. I hope that Defence, and in particular DMO, will take the findings of the Committee's report as an opportunity to implement much needed sustainable reform.

1.4 The savings that could be obtained through reducing Defence wastage are astounding. For example, the Committee heard that had the Super Seasprite helicopter project been given the proper scrutiny at the project's inception, \$1.4 billion could have been saved.¹ It borders on incomprehensible that so much money can be spent with so little outcome for Australia and our Defence capabilities.

1.5 Given the total budgeted costs in the 2011-12 Major Projects Report have increased by 20 percent (after the projects had already received second pass approval), it is imperative that projects receive proper assessment and scrutiny early in their

1 ANAO Audit Report No.41 2008-09, *The Super Seasprite*, pp.13-14 and The Hon Joel Fitzgibbon MP, Minister for Defence, 'Seasprite Helicopters to be cancelled', MIN14/08, 5 March 2008, <http://www.defence.gov.au/minister/70tpl.cfm?CurrentId=7480> (accessed 2 April 2012).

inception. DMO's belief that all of these projects are '*delivering capability within the approved budget*' despite the large increase is further cause for concern.²

1.6 Project costs cannot continue to be obscured in Defence White Papers, and the current practice of providing little detail about projects above \$1.5 billion in value must be reversed. From a public policy point of view that appears to be perverse. The public must be able to make an informed decision as to whether current and future projects represent value for money.³ I endorse the Committee's recommendations regarding the 2013 White Paper and encourage Defence to take a more transparent approach to their reporting.

1.7 The majority report identified many of the factors that contributed to project failures, including misunderstandings between DMO, Capability Managers and contractors. The Committee heard evidence that when legitimate disputes regarding DMO arise, (for example by way of an adversarial approach taken by a DMO employee) the primary mechanism to deal with such issues is for management to have an 'open door policy' in relation to complaints.⁴ However I believe that a more formal and proactive approach should be taken by management to address misunderstandings, particularly those that arise as a result of behavioural issues.

1.8 One contributing factor to cost blowouts and project failure is the inadequate management of risk. It appears that the multiple risk management guidelines and handbooks available to Defence staff, including DMO employees, have been unsuccessful in achieving substantial risk mitigation. This suggests that a different approach to implementing risk management policies should be taken, perhaps by way of a greater emphasis on individual accountability.

1.9 It is clear that although Defence responded positively to the recommendations made by Kinnard and Mortimer and accepted that DMO accountability needed to be clarified through Material Acquisition Agreements, more specific agreements regarding risk management responsibility are required.⁵ Boundaries and tasks need to be clearly defined, and tasks need to be aligned with the authority and resources necessary to execute them.

1.10 Until such time as Defence procurement procedures are strengthened by minimising risk, improving communication, fostering a culture of accountability and improving project cost transparency, Defence will continue to run the risk of

2 ANAO Report No. 20 2011-12, 2010-11 *Major Projects Report*, paragraph 24 and p. 103.

3 Leigh Purnell and Mark Thomson, *How much information is enough?: The disclosure of defence capability planning information*, Prepared by the Australia Strategic Policy Institute under contact to the Australian Department of Defence, December 2009, p. 40.

4 Mr Warren King, Acting Chief Executive Officer, Defence Material Organisation, *Committee Hansard*, 7 October 2011, p. 60.

5 ANAO Audit Report No.57 2010-11, *Acceptance into Service of Navy Capability*, 2011. paragraph 29.

expensive and embarrassing project delays, cost blowouts and failures. The Federal Government must take additional steps to eliminate wastage in Defence so that we are better able to meet the critical requirements of Defence preparedness, the needs of service men and women and the long term interests of Australian tax payers.

Senator Nick Xenophon

IND, South Australia

Additional Comments by Senator David Fawcett

Executive Summary

In providing additional comments to the majority report, I wish to acknowledge the extensive effort that has gone into the inquiry, particularly on behalf of the Committee Secretary to collate an extensive array of evidence and record the varying opinions of witnesses and committee members in a coherent manner.

I have four key areas of concern, however, that I believe could have been addressed more thoroughly in respect to both scope and depth: Governance; Strategy; Sovereignty; and Industry.

Governance of the Australian Defence organisation (ADO) is dysfunctional. Civil control of the military should occur through the decisions of a well-informed, elected Minister who is connected into the governance processes of the ADO in an ongoing manner analogous to the Board Chair of a publically listed company. This is not currently the case due to the policy of “one voice” to Government and the unintended consequences of two decades of Government initiated measures aimed at reducing costs (well documented by Kinnaird, Mortimer, Black, Rizzo and Coles). Defence procurement does not occur in a vacuum and lasting improvement in this area will require changes to Governance of the whole ADO, the component parts of its system including the nature of their interaction with each other and Executive Government.

A strategic view of Australia’s national security interests should view Defence primarily through the prism of what we want it to be able to do, not just a list of the equipment we think it should have. This will lead to a logical definition of the capabilities needed to generate the military effects required by foreign policy and those capabilities required to support internal agencies (such as disaster relief and counter terrorism). One of the flow-on effects from dysfunctional governance is that the Minister and National Security Committee of Cabinet (NSCC) are not made aware of the increasing gaps between what they imagine Defence can do and what the ADO is actually funded for. The Defence White Paper (DWP) requires a more effective, closed-loop planning cycle to inform Government of the likely cost of procuring and sustaining the capability envisaged to support the national security strategy. Trade-offs, where required to ensure that the ADF is not a hollow force, need to be made before the DWP and consequent Defence Capability Plan (DCP) are published. These steps will increase capital productivity which has the potential to deliver significant savings in the defence portfolio over the medium term.

Sovereignty is about the ability to choose a course of action as a nation. It does not imply that we should attempt to emulate a super power which is able to design, develop, manufacture and support everything required for the defence of the nation. It does mean though that we cannot afford to be in a position where we have no option but to accept the level of capability, risk, cost, safety and availability another nation may deign to provide for us at their convenience. Being able to choose where we sit

along that spectrum requires that we retain the ability to understand technology and quantitatively assess the assertions of a would-be provider: the fabled smart customer. The ability to evaluate and where necessary, repair or modify and certify leading edge military technology to a chosen standard is one of the things separating a third world and a first world nation. Many of Australia's procurement problems stem from the growing gap between our perceived and actual ability in this regard.

Australia's defence industry has proven to be innovative and remarkably resilient in the face of entrenched cultural indifference or even antagonism within Government and Defence. ADO personnel frequently express the view that industry is just out to make a profit and should not be trusted. Executive Government appears to regard defence industry through the prism of jobs creation rather than as a part of Australia's national security capability. The Defence Materiel Organisation (DMO) appears to regard industry as having an unending capacity to absorb risk without cost, to respond at short notice despite indefinite delay to procurement decisions, and to be willing to create and retain advanced manufacturing capability without the cash flow arising from steady contracted work. Despite a rich history of world leading innovation in technology, manufacturing and programming, there remains a strong bias against contracting directly with Australian based companies.

The evidence presented during this inquiry identifies principles that must be respected if we are to be successful. Those principles lead me to outline one way that we might go about recreating true civil control of a strategically aligned defence force. A Defence force empowered to be self-critical, to respond to changed circumstances in a timely manner, funded to deliver the effects Government knows it can afford and in a constructive partnership with the industry stakeholders in Australia's national security capability.

Key Principles

1. Accountability requires that the responsible individual has both command and control over the people and resources needed to achieve the mission;
2. People who are qualified and experienced in areas directly relevant to their task will generally succeed, albeit their effectiveness and efficiency may be improved by following appropriate processes. Conversely, application of increasing layers of process to compensate for a lack of qualified or experienced people, will generally lead to failure at some point.

Elections and promotions mean that the personality and task-specific competence of individuals holding appointments in Executive Government and Defence will vary over time. This drives a requirement for a system of independent checks and balances coupled with transparent, closed-loop reporting to ensure compliance with best practice and to allow dissenting voices to be heard by the relevant decision-makers.

Major Conclusions

1. Accountability will only be achieved if Government empowers Defence to reduce the number of groups in the ADO and to restore the continuity of command by returning control of enabling functions to the ADF. Efficiency and effectiveness can be best achieved by having the Secretary oversee a regulator that: sets the standards to be complied with; determines the competence required before personnel will be authorised to exercise their authority (limited if required); and audits compliance.
2. Defence must build on successful measures such as Gate Reviews and Air/Seaworthiness Boards to establish a consistent framework for contestability. The framework must include a transparent, closed-loop reporting mechanism so that dissenting voices are heard by the relevant decision maker.
3. The success of the resolution process for Projects of Concern has demonstrated that it is possible to have senior stakeholders agree on trade-offs to cost, schedule and capability to avoid project failure. There may be times where such a trade-off should in fact be made pre 1st or 2nd Pass rather than delay submissions to NSCC. Conversely, insufficient information to be able to accept the risk profile of a project may mean that it should not proceed. Lack of capital productivity is a significant cost driver for Government in the defence portfolio and timely decision to commit, to defer for a defined period or to cancel has the potential to achieve significant savings over time.
4. The ADO is often under media and political pressure to reduce the number of “contractors and consultants” as a cost saving measure. If the Australian Public Service (APS) or uniformed personnel do not have the required competence for the role, this is not only false economy due to decreased productivity, it directly elevates the project risk. Government must be prepared to defend the right of Capability Managers to engage (employ or contract) the skills they need to complete the tasks they are given. If the nation cannot afford to engage task-competent people to manage multi-million dollar projects, the project should be deferred or cancelled.
5. The ADF has (or has had) the ability to identify risk in many circumstances prior to contract signature. This capability has not been used to best effect with dissenting voices sometimes ignored. The decision makers must have disclosure of the fact that dissent was made and the basis upon which the dissenting concerns were dealt with or discarded.
6. Defence Industry is part of Australia's defence capability, particularly for Through Life Support (TLS) but also in some areas of development and manufacture. The health (capacity and competence) of Australia's defence industry sector should therefore be considered as part of the Capability Development process. A key to reducing risk and cost is for Government to plan for a stable procurement workload (on defence and industry) which provides incentive for private sector investment in (and sustainment of) skills and infrastructure.

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1. SECTION I – CASE FOR CHANGE

1.1. Senate FADT 2012 Procurement Inquiry

1.1.1. 2012 Inquiry Report

- 1.1.1.1. While I share the conclusion reached by other Committee members that reform is required, I believe that the analysis could have been deeper and broader in scope in four key areas: Governance; Strategy; Sovereignty; and Industry.
- 1.1.1.2. Chapters 1-14 of the Senate FADT References Committee Report on Defence Procurement consider a range of issues raised by witnesses from the Defence organisation, industry, academia and commentators. Almost without exception, witnesses highlighted that people across industry and defence are working hard to achieve the best possible outcome for Australia's national security. Defence personnel are rightly proud of the work they are doing, the improvements they are making within the process they are required to use and the capabilities that are being delivered. Industry participants highlighted their concern not only to remain profitable but equally as important in their view, to make tangible improvements to the capabilities used by servicemen and women.
- 1.1.1.3. In spite of the hard work and good will of people involved, witnesses highlighted symptoms of dysfunction spanning risk management, accountability, contestability, organisational structure, a focus on process instead of competent people, and the inadequate interaction with industry. The efficacy (or otherwise) of past attempts at remediation and current policies were explored at length and some witnesses proposed changes to process or organisational responsibility in discrete parts of the ADO. The report makes valid observations and recommendations in each of these areas but it could go further.
- 1.1.1.4. Defence procurement does not occur in isolation. To find the underlying causes (as opposed to responding to specific symptoms) it is important to consider the role, actions and interface of all stakeholders, including Executive Government. For a solution to be effective it must consider the system as a whole. Any remediation must consider the interaction between component parts, rather than attempting to change the behaviour of just one part. To that end, witness suggestions such as the re-establishment of Force Development and Analysis (FDA), the abolition of DMO or the establishment of DMO as an executive agency may (or may not be) useful but in any case must be evaluated in the context of the whole system (comprising Executive Government, industry and the ADO).

1.1.2. **Introduction**

1.1.2.1. These additional comments seek to outline what a systems approach to reform of Defence procurement may look like. The comments are designed to stimulate debate at a level that moves well beyond the kind of specific actions (such as appointing an Associate Secretary—Capability or the recreation of FDA) which have previously been mooted to address symptoms of dysfunction in a particular area.

1.1.2.2. In developing these comments, it has been important to consider:

- a. what the intended outcomes were when the existing organisational structures and approaches to procurement were developed;
- b. to what extent have these outcomes been achieved vs how have previous reforms contributed to unintended consequences; and
- c. how, while taking action to recover from the unintended consequences, to minimise the prospect of voiding the improvements that have been made in past years.

The scope of these comments will therefore include a brief history which will touch on some highlights of policy decisions. It is not intended to be a detailed academic exercise but to provide a context for the changes the Defence organisation underwent in the two decades from 1990 to the present.

1.1.2.3. The conceptual outline discussed in these additional comments will also seek to take into account the principles that I believe have come to prominence through this inquiry being:

- a. Accountability requires that the responsible individual has both command and control over the people and resources needed to achieve the mission;
- b. People who are qualified and experienced in areas directly relevant to their task will generally succeed, albeit their effectiveness and efficiency may be improved by following appropriate processes. Conversely, application of increasing layers of process to compensate for a lack of qualified or experienced people, will generally lead to failure at some point.
- c. Elections and promotions mean that the personality and task-specific competence of individuals holding appointments in Executive Government and defence will vary over time. This drives a requirement for a system of independent checks and balances coupled with transparent, closed-loop reporting to ensure compliance with best practice and to allow dissenting voices to be heard by the relevant decision-makers.

- 1.1.2.4. In this report, when I use the following terms, I mean:
- a. Australian Defence Force (ADF—the Army, RAN and RAAF);
 - b. Australian Defence organisation or “Defence” (ADO—the ADF plus the many groups (peer organisations) that have grown around it over the past two decades);
 - c. Executive Government - which includes the Minister and NSCC of the Government of the day whether Labor or Coalition;
 - d. Competence - being the combination of qualifications and experience across a range of issues in the related field;
 - e. Task-specific competence - which recognises that an individual may be very competent in a given field (eg: an orthopaedic surgeon) but in respect to a specific task (eg: neurosurgery) you would not want them conducting the operation; and
 - f. Fundamental inputs to capability - (FIC) being the standard ADF definition of the broad range of considerations that must be considered (ie: funded) for a “capability” to be sustainable and effective. FIC includes the major equipment plus personnel, organisation, training, supplies, infrastructure etc¹.

1.2. Causes and Consequences

1.2.1. Peace Dividend

- 1.2.1.1. At the end of periods of conflict such as the Vietnam and Cold Wars, the public expected funds to be directed to more constructive purposes—a peace dividend. Vietnam for example had become communist but the domino-effect feared during the 1960s did not eventuate. The concept of (and capabilities required for) forward defence were discredited in the public’s eye. Regional cooperation appeared to be on the rise and Australia’s allies had begun to disengage from Southeast Asia. Australia was increasingly seen as being responsible for its own security in a benign regional environment. The costs of maintaining a balanced, deployable joint force of air, land and maritime capabilities were hard to justify and subsequently not considered a priority after the Dobb Report (1986) which led to the *Defence of Australia* policy, focussing almost entirely on defending the air-sea gap to Australia’s north. It has been argued that the White Papers that followed Dobb resulted in force structures that did not allow for a sustained, deployed ADF combat commitment regionally or globally.
- 1.2.1.2. The end of the cold war reinforced the notion that a draw down in military capability was justified. Despite small scale contributions to international

¹ www.defence.gov.au/capability/_pubs/dcdm%20chapter%201.pdf

military operations (1990–91 Persian Gulf War, peacekeeping missions to Somalia, Rwanda and Cambodia), it was not until Operation Morris Dance (Fiji 1987) or in a broader sense, the East Timor crisis that Australia's inability to deploy and sustain a credible combat force (even in regional terms) became apparent.

1.2.2. Unintended Consequences

1.2.2.1. On the back of *Defence of Australia*, the Government of the day sought savings from the Defence Department for investment elsewhere. The advent of more than a decade of peace meant that many of the enabling functions provided by specialised people and processes (such as logistics and engineering) that a military depends on to sustain an armed force in combat were easy pickings for cost savings.

1.2.2.2. The traditional structure of the three stand-alone services each owning their enabling support functions provided good accountability and allowed a depth of knowledge and experience to be developed and retained. There was, however, also duplication and inefficient practice, which led to an expectation that savings could be made by rationalising enabling functions on a tri-service basis. This started a process of external parties imposing change on how Defence worked internally. The key changes included:

- a. **Commercial Support Program (CSP).** Stemming from the Wrigley Review (1990) and the Force Structure Review (1991), this program targeted savings by outsourcing a number of Defence functions to industry and drawing down the numbers of members in uniform. The enabling functions that were targeted in the CSP included areas as broad as maintenance, training, logistics, facilities, administration, catering and health care. The Defence Minister informed Estimates in 1993 that, "*What we have said is that the bottom line is the dollar— that is, how we can do it cheapest and save money*". The savings were often based on industry tenders of the day which were premised on absorbing a workforce that had been qualified and given experience by Defence (particularly true in the area of maintenance and training). Over time some of these initial assumptions (and savings) changed as workers retired. With Defence having ceased to train the same scope or number of specialists (including technicians and engineers), industry had to factor in training and provision of experience for the workforce.
- b. Defence also lost many options to post people to deep-maintenance organisations where they had traditionally gained technical mastery of the equipment used by Defence. This had flow-on effects in Defence's ability to staff HQ and acquisition organisations with people who were competent in specialised technical and engineering roles. Coles, Rizzo and this Senate Inquiry all noted the decreasing capacity for the ADF to be an informed customer. These longer term consequences of the CSP may have been unintended, but they could hardly be called unforeseen. A

Parliamentary Library document from 1993 notes that Defence raised concerns regarding CSP in that it would lead to "*a reduction in ADF core skills, where reducing the pool of skilled service personnel may result in limitations to the future deployment capacity of some units of the ADF*". This has in fact now happened as highlighted by the failure of the amphibious fleet in 2011 and the subsequent Rizzo Review.

- c. **Shared Services.** Before the end of the decade, Executive Government continued the hunt for short term savings through the Defence Efficiency Review and Defence Reform program. The resulting application of shared services caused further externally-driven changes to a broad range of internal Defence processes. A wide range of enabling functions was affected including among other areas administrative support, information technology, personnel and defence estate. Defence moved from the three uniformed services being supported by a range of subordinate units (the basis for continuity of command), to the three services having to negotiate for support from a growing federation of peer organisations, each having their own management structures and priorities.
- d. This has led to a large number of negative, unintended consequences including: decreased productivity, increased costs associated with the creation of new management structures and large increases in senior management appointments, a breakdown in the continuity of command, and decreased effectiveness in the delivery of support². The Black Review in large part relates to the consequences of the implementation of shared services. The decreases in productivity across Defence have manifested in situations ranging from many day-to-day activities to service level capability decisions. Indicative examples at these extremes include:
 - i. A junior officer in charge of a maintenance workshop losing days of productive time while trying to get an eye-flush shower (required by OH&S) fixed by the Defence Support Group when all it required was a 50c rubber washer but he was not authorised to have one of his own staff fix it; through to
 - ii. The deputy Chief of Air Force and numerous subordinate staff spending weeks attempting (unsuccessfully) to use RAAF funds (approved for the purpose) to make a strategic acquisition of land near Woomera to develop the capability to conduct end-end testing and training with stand-off weapons but being opposed by Corporate Support and Infrastructure Group (CSIG³) who were

² These unintended consequences are comparable with the outcomes experienced by State Governments in Australia and some overseas nations that have attempted to achieve efficiencies through the implementation of shared services. WA and QLD have both abandoned shared services programs having found that the costs were greater than realized benefits.

³ Now Defence Support Group (DSG)

responsible to facilitate the purchase but whose senior management had different aims and priorities.

- e. **Defence Procurement.** The process of centralisation continued with the materiel procurement function being removed from the three services and placed under the new Defence Acquisition Organisation (DAO). Further reform saw the services also lose the through-life support and logistics function to an expanded DAO which became the Defence Materiel Organisation (DMO). This was intended to professionalise Defence interaction with industry, better facilitate joint acquisition, ensure that acquisition took due account of ongoing logistic considerations and to impose a common approach to defence procurement. The very fact that this Senate Inquiry is being held and has elicited such a wide range of submissions indicates that the outcome has not been what was hoped for. Evidence to the Inquiry has highlighted that despite a large investment in courses and certification, DMO still has a challenge to develop those initial qualifications into task-competence and to retain experienced professional staff. The inquiry also found extensive evidence that standardisation remains an issue (despite extensive process and manuals).

- 1.2.2.3. **Kinnaird and Mortimer.** The next tranche of change came as signs of dysfunction increased. By December 2002 Kinnaird was engaged to conduct a review of problems associated with major Defence acquisition projects. The part-implementation of the Kinnaird Review recommendations resulted in wide-ranging process reform and over time was considered to have improved both capability development in Defence, and acquisition in DMO. A number of Kinnaird's recommendations were not heeded (eg: organisational change) by Government or not adequately funded, preventing effective implementation. By 2008, Mortimer (supported by competent defence officers) was engaged to review the effectiveness of procurement post Kinnaird and while noting improvements, concluded that significant problems still existed within Defence procurement. The Minister in accepting his report commented on the "*complex and bewildering processes, practices and acronyms that comprise Defence's procurement system*".
- 1.2.2.4. In his foreword, Mortimer refers to the "*necessary cultural and institutional changes that will be required to give effect to these reforms. Without these changes the Review is of the firm belief that some of its recommendations will be significantly weakened and will not deliver the full benefits intended*". Unable, unwilling or unconvinced, the Government again declined to consider major organisational change. The result was to address the symptoms of dysfunction with further layers of process and measures which this inquiry has shown to be largely ineffective.
- 1.2.2.5. At the end of two decades of constant change which was motivated by the pursuit of short term savings, is the tax-payer dollar being spent any more wisely? Without a defined reference baseline and with a constant process of

change layered upon ongoing change, Defence has been unable to provide the Parliament with quantifiable evidence of savings achieved through these measures. Indeed, when the cost of the unintended consequences (eg: the demise of the amphibious capability, failed or delayed projects etc) are factored along with the expense of multiple reviews, oversight committees and “change management” measures and re-building activities, it is probable that in net terms, the cost to the taxpayer has been, and continues to be, significant.

1.2.3. **We are not alone**

- 1.2.3.1. The United Kingdom Ministry of Defence (UK MoD) has also undergone substantial reform in the past two decades. Like Australia, many of these reforms have been driven by cost saving measures based on “commercial best practice” and have had similar results of downsizing uniformed technical workforce while outsourcing to industry. Like the amphibious fleet failure in Australia, the UK has also been impacted by the unintended consequences. The Haddon-Cave Report into the MoD after the loss of an Royal Air Force (RAF) Nimrod in 2006 condemned the change of organisational culture within the MoD between 1998 and 2006 in the wake of the Strategic Defence Review. Mr Haddon-Cave QC noted that short term costs savings and budget measures (such as outsourcing and matrixed management) had reduced the effectiveness and accountability of the MoD leading to catastrophic organisational failures. The report quotes: *There was no doubt that the culture of the time had switched. In the days of the RAF chief engineer in the 1990s, you had to be on top of airworthiness. By 2004 you had to be on top of your budget if you wanted to get ahead.* The UK Secretary of State for Defence noted: “This report must act as a wake-up call for us all—for politicians, for industry and for the military. Cutting corners costs lives. Wars cannot be fought on a peacetime budget.”
- 1.2.3.2. Likewise the United States Department of Defense (US DoD) has been subject to a range of reforms in an attempt to deliver savings. The sheer scale of the organisation makes potential savings large but corresponding challenges immense. In 1991 for example, the DoD had around 250 finance and accounting systems (most incompatible with each other), 18 separate military payroll systems and a history of independent action within each service. Like Australia and the UK, these reforms have come in waves and through the 1990s in particular, followed commercial concepts such as outsourcing. The drive for savings in the US has affected technology based organisation other the DoD. The Space Shuttle Columbia Accident Investigation Board found that externally driven savings measures had driven a culture change within the National Aeronautics and Space Administration (NASA) which had affected management and the ability of the engineering specialists to successfully challenge the cost savings measures of “business process reform” teams. The dilution of technically qualified and experienced people in the management structures meant that consensus became a way of doing business even in respect to technical

issues, rather than engineering principles being the baseline consideration that drove cost, scope and schedule decisions.

1.3. Analysis

1.3.1. Root causes

1.3.1.1. The underlying drivers of the symptoms identified in the Committee report (poor risk management, lack of accountability, inadequate contestability, dysfunctional organisational structure, a focus on process instead of competent people, and the inadequate interaction with industry) need to be identified if the situation is to be improved on a sustainable basis. The primary aim of such root cause analysis is to:

- a. identify the factors that drove the nature, magnitude, location, and timing of harmful outcomes of one or more past events, in order to
- b. identify the behaviours, actions (or inactions), and conditions which need to be changed to prevent recurrence of similar outcomes; and to
- c. identify the lessons that should be learned to promote the achievement of better outcomes in future.

1.3.1.2. As with any systems approach, the interaction of components within the system can be multi-faceted with multiple order effects. Analysis of any given symptom may therefore link to a number of principles and desired outcomes. Many volumes could be written in this area but I will seek to highlight what I believe to be the fundamental issues to be addressed.

1.3.1.3. **Accountability.** *Principle - Accountability requires that the responsible individual has both command and control over the people and resources needed to achieve the mission.*

1.3.1.4. The Committee noted the strong theme from witnesses and reviews such as Coles, Rizzo and Black regarding a lack of accountability. Principle would suggest that the underlying cause is a lack of control. Despite the assurances from the ADO that Materiel Acquisition Agreements (MAA) and Materiel Sustainment Agreements (MSA) provide the Capability Manager with control, the practical outcomes indicate otherwise.

1.3.1.5. Take the Rizzo Review as an example. Chief of Navy did not control the through-life support of his ships – he had a contract with DMO who was responsible for that and indeed Navy’s engineering workforce and technical regulatory structure (CN’s check and balance against poor DMO performance) had been downsized as part of the cost savings delivered to Government through CSP and the creation of DMO. Who should be held accountable? Take the example of the Captain and his workshop. He lodged the work order to have DSG fix the eye-wash shower and diligently pursued them in an attempt to get some action when it became apparent that they had

other priorities. Who is accountable for the loss of productivity and lack of compliance with OH&S? Who should be held to account for the late achievement of an operational capability of the stand-off weapon for RAAF? The Capability Manager or the ADO group that refused to facilitate the functions requested of them?

- 1.3.1.6. The assumption was made that the services only needed to use the facilities or “fight” with provided equipment. Someone else could buy them and look after them. Having services provided and non-combat roles filled by commercial, civilian or centralised agencies was seen to be a way to save money through economies of scale, lower on-costs for employees and standardisation. The flaw is the premise is that all the underlying modelling and assumptions will prove to be accurate. In reality failures occur, circumstances change, assumptions prove to be invalid, priorities and national commitments of Executive Government change. To be effective, ADF commanders must be able to respond and adapt in a timely manner. This requires an ability to re-prioritise, re-allocate resources and if necessary, adapt proven procedures to meet new circumstances. ADF commanders at all levels no longer have this flexibility due to the extensive network of committees and contracts established to manage the inter-group boundaries within the ADO which have proven to be so disempowering for ADF stakeholders. Black and Coles both highlighted the impact of excessive committees and confused responsibilities on both effectiveness and efficiency.
- 1.3.1.7. A new paradigm is required for the Capability Manager to be accountable (ie: able to command and control) while retaining the benefits that have accrued in some areas through CSP and the DER. The change is subtle but profound. Rather than strip the Capability Manager of responsibility and employ someone else to do the job, return responsibility to the Capability Manager and employ someone to make sure he does it in accordance with approved/standardised guidelines and regulation. This proposal is based on:
- a. **Civil precedence.** There have been many calls for Defence to be more businesslike but the current structures largely prevent that. CEOs who accept full profit & loss responsibility generally have the ability to control all parts of their business. Their actions however are moderated by the Board who set strategic direction and ensure that a strong compliance regime is in place with respect to relevant regulation set by the appropriate authority (eg: APRA – financial services, ACCC – competition, fair trading and consumer protection or CASA – aviation safety etc).
 - b. **Military precedence.** The ADF already has a successful model of this combination of unity-of-command subject to regulation. Each Capability Manager is responsible for the operation of the multiple types of aircraft in their service (including maintainers, aircrew, and ground support staff). They are held to account to comply with the standards set by two

regulators (the Director General of Technical Airworthiness (DGTA) and via the Defence Airworthiness Coordination and Policy Agency (DACPA)). These regulators audit and report on the level of compliance. DGTA also approves the level of delegated authority that an engineer may exercise when posted into an appointment by the Capability Manager. The results of these audits form part of the annual Airworthiness Board which evaluates the readiness or continuing airworthiness (people, training, facilities, logistics, engineering, operations) for each aircraft type. While DACPA and DGTA set the standards, there is a clear accountability for the services to adhere to these regulations while making other resource and priority based decisions in response to changing tasking and circumstances. Military staff working with Mortimer pointed to this model as the precedent that should be expanded when the role of Governance Boards were discussed in the context of procurement.

- c. **Evidence.** The Black Review identified the lack of accountability due to the ADO matrix structure but “*with the notable exception of the operational chain of command where clear lines of devolved accountability and responsibility are central to the military command chain*”. It is important to note that pre the CSP and DER reforms, the ADF applied these clear lines of accountability and responsibility to all of its enabling services (logistics, training, procurement etc). It may not have done it as efficiently as possible, but in hindsight it probably provided better value for the tax-payer than the raft of unintended consequences that have followed the reforms. By returning responsibility for controlling the enabling functions to the ADF (that Black has recently identified still retains a culture of accountability), the aims of the CSP and DER reforms can be better harnessed by alignment and best practice through regulation, audit and closed-loop reporting (eg: analogous with the airworthiness model).

1.3.1.8. I conclude that accountability will only be achieved if Government empowers Defence to reduce the number of groups in the ADO and to restore the continuity of command by returning control of enabling functions to the ADF. Efficiency and effectiveness can be best achieved by having a regulator that sets both the standards to be complied with and the competence required before personnel will be authorised to exercise authority (limited if required) in related areas. I also contend that the burden of excessive compliance reporting and successive audits from multiple parties that Defence is currently subject to is a function of the matrix management model where no one agency is responsible. Correct setting of priorities, schedule coordination and alignment of audits with unit activity could significantly reduce the burden which is currently placed on the ADO and achieve more efficient and effective outcomes.

1.3.1.9. I also contend that accountability is required from Executive Government to defence. There needs to be a recognition that the term “raise, train, sustain”

is there for a reason and that tasking part of the ADF is not a free good. After years of efficiency measures, there is not much redundancy or depth in many of the areas that directly generate the required military effects. Commitment of ADF forces to an unplanned task (regional intervention, natural disaster recovery etc) is a valid use of the ADF but if it comes on top of a high operational tempo supporting existing commitments, there will be a cost: always financial (direct operating costs, cancelled or deferred activities, accelerated maintenance) and sometimes also a capability gap while the deep-maintenance stagger for major equipment is re-established.

- 1.3.1.10. **Contestability.** *Principle - Elections and promotions mean that the personality and task-specific competence of individuals holding appointments in Executive Government and Defence will vary over time. This drives a requirement for a system of independent checks and balances coupled with transparent, closed-loop reporting to ensure compliance with best practice and to allow dissenting voices to be heard by the relevant decision-makers.*
- 1.3.1.11. A structured framework that facilitates contestability is one effective way of benefiting from alternative views and harnessing corporate knowledge. A Governing Board, Board of Reference or Board of Directors (eg: of a public company) are long-standing and effective ways to implement this. This can apply to Defence at various levels. Since the Levene review of 2011, the UK MoD for example operates under a Defence Board chaired by the Minister (Secretary of State for Defence) who has “directors” on the board speaking for the military as well as non-executive directors drawn from non-defence fields to provide alternative views. The ADF already use a different style of board as part of the airworthiness and seaworthiness process. DMO uses a Gate Review that can provide similar function.
- 1.3.1.12. In the Australian context, a framework to facilitate contestability (including transparent, closed-loop reporting) would need to be effective at multiple levels:
- a. **Strategic.** In developing the DWP, alternative views must be heard with respect to:
 - i. The operational concepts for how military capability will generate the effects required to support the national security strategy;
 - ii. The scope and duration of military effects the government requires defence to be able to generate (ie: wars of choice (Afghanistan or East Timor), wars of necessity (defence of mainland Australia), as well as regional and domestic contingencies (protecting sea lines of communication from piracy or interdiction, natural disasters etc));
 - iii. The true cost (and future growth pressures) of all the FIC elements required to generate the military effects including compliance costs

associated with whole-of-government regulations (eg: environmental and OH&S considerations for facilities);

- iv. The trade-offs that will inevitably have to be made if the DWP and DCP is going to reflect an affordable, achievable plan that the ADO, central agencies (Finance and Treasury) and industry can confidently use for planning; and
 - v. The extent to which Australia wishes to maintain its sovereign ability to choose the level of capability, safety and certification standards to be applied to military equipment.
- b. **Capability.** The need for improved contestability throughout the capability life cycle has been a major finding of the committee report. The choice/appointment of people to be the informed voices should be subject to checks and balances such that the issue of their competence for the role is contestable to avoid short-cuts being taken. A transparent and closed-loop reporting system is vital if contestability is to be effective. There should be full disclosure to the Minister and NSCC of the existence of dissenting voices. The nature of the dissent, actions taken to mitigate or manage identified risks or the reasons to discard the advice must be part of the brief flagged to Government. Relevant stages of the life cycle include:
- i. **Pre-First Pass to contract signature.** Checks and balances are required to ensure that the proposed capability aligns with the national security strategy as articulated in the DWP. Involving informed and experienced people in the system is the best form of recalling corporate knowledge (lessons learned) which can help constrain the conspiracy of optimism. The system requires the early engagement of competent people to speak to risk (technology, integration, certification, and industry capacity), the proposed contracting approach (appropriate risk sharing) and the long-term considerations such as whole-of-life costs, skills development and viability of strategic industry stakeholders.
 - ii. There should also be contestability around decisions to delay going to Government for 1st or 2nd Pass. The “tender quality” threshold that has become expected for information provided to government and the consequential delays have been shown to be a driver of risk due to the flow on effects for industry (eg: inability to retain project specific competence in workforce, cash flow and schedule compression if IOC is a fixed schedule requirement) and the Capability Manager (extension of legacy capability, re-alignment of personnel posting plans, re-training and possible re-contracting for other FIC elements). The success of the resolution process for Projects of Concern has demonstrated that it is possible to have senior stakeholders agree on trade-offs to cost, schedule and capability to avoid project failure.

There may well be times where such a trade-off should in fact be made rather than delay submissions to NSCC. Conversely, the inability of CDG to obtain sufficient information to be able to accept the risk profile of a project may mean that it should be cancelled. Lack of capital productivity is a significant cost driver for Government in the defence portfolio and a timely decision to commit, to defer for a defined period or to cancel has the potential to achieve significant savings over time.

- iii. **Acquisition.** Checks and balances are required to ensure compliance with approved procurement guidelines, and that changes in scope remain aligned with the 2nd Pass Approval. The Committee heard from both industry and ADO members about the adverse impacts of “project specific” culture that may develop in the relationship between the contractor and defence (be it adversarial or excessively compliant). Audit and review by experienced people (eg: Mortimer’s Governance boards or DMO Gate Reviews) can provide checks and balances to ensure an effective working environment prevails that maintains the aim of meeting the end users operational need within the terms and intent of the contract. Contestability around decisions to delay contract signature are subject to the same considerations as for 1st and 2nd Pass.
- iv. **In-service.** The failure of the ASLAV upgrade program due in part to poor through-life configuration control, the amphibious fleet failure, Collins sustainment issues all point to the need for periodic contestability around compliance with engineering/operational/training/logistic requirements and adequacy of resources provided for all required FIC elements. While not perfect, the airworthiness system in Defence is a proven system that affords this contestability across all three services in the aerospace domain. It has recently been extended to Navy for major systems and should be scaled appropriately across Defence for all major capability systems.
- c. **ADO.** Members of the ADF are currently subject to an excessive amount of compliance reporting and audit activity (internal and by external groups) that detracts from a focus on effective military outcomes. Greater efficiency and effectiveness may be achieved if a common framework was applied across the ADO in a coordinated manner. Where shared services (or whole of government obligations) are currently in place, the Minister should hold the Secretary accountable for developing/maintaining agreed standards to be applied across all three services and the consequential auditing and reporting of compliance.
- d. **Conclusion.** Defence must build on successful measures such as Gate Reviews and Airworthiness/Seaworthiness Boards to establish a consistent framework for contestability. This framework allows the Capability Manager to be held accountable for what is achieved while enabling a system of checks and balances that provides assurance the

quality / efficacy of how it is achieved. The framework must include a transparent, closed-loop reporting mechanism to ensure that dissenting voices can be heard by the relevant decision maker. The Government must also introduce contestability at the strategic level (noting the difficult balance required between national security and transparency).

- 1.3.1.13. **Process vs (task-competent) people.** *Principle - People who are qualified and experienced in areas directly relevant to their task will generally succeed, albeit their effectiveness and efficiency may be improved by following appropriate processes. Conversely, application of increasing layers of process to compensate for a lack of qualified or experienced people, will generally lead to failure at some point.*
- 1.3.1.14. The Haddon-Cave Review (UK) has been often seen by people predominantly as a report concerned with the RAF. The report is prescient, however, in its dissection of the nature and causes of dysfunction that have afflicted numerous western technical organisations following the 1990s when business trends were adopted by governments in the face of cost pressures. The lessons highlighted by Haddon-Cave are applicable across the ADO with regard to the dilution of technically qualified and experienced people in the management structures. In the UK this meant that consensus became a way of doing business even in respect to technical issues, rather than engineering principles being the baseline consideration that drove cost, scope and schedule decisions. The Committee has seen evidence of similar outcomes in the ADO with generalist ADF and APS staff relying on process rather than subject matter competence.
- 1.3.1.15. To have a role with authority in complex or technical project in civil community (eg: a pipeline engineer in the energy sector), there is often a competence matrix which provides guidance on the qualifications and experience required for given tasks. This approach is already applied in parts of the ADO in various forms. It must become a standard part of practice with scaled levels of detail and discretion for appointing authorities depending on the criticality of the role. The role of the external regulator who audits and reports on compliance is critical if this system is to be effective. While some parts of the ADO already make extensive use of external agencies (eg: Engineers Australia, Project Management Institute) to assist in the process of defining competencies, this should become standard practice. Existing ADF regulators such as DGTA and the Flight Test Airworthiness Authority should also be used to identify specific competence considerations for design engineering, developmental test and evaluation and certification roles.
- 1.3.1.16. There are areas where the ADO no longer retains sufficient competence or capacity to support all projects. Indeed it may not be viable to always maintain the numbers of professional required when concurrent projects are under way. Above-the-line professional service providers (PSP) have proven invaluable to many projects, provide competence and often, the

benefit of corporate knowledge and recall of “lessons learned”. Evidence provided to Senate Estimates indicates that the ADO is often under media and political pressure to reduce the number of “contractor and consultants” and even the annual defence report highlights efforts to replace contractors with APS. If the APS or uniformed personnel do not have the required competence for the role, this is not only false economy due to decreased productivity, it directly elevates the project risk. Government must be prepared to defend the right of Capability Managers to engage the skills they need to complete the tasks they are given. If the nation cannot afford to engage task-competent people to manage multi-million dollar projects, the project should be deferred or cancelled. Skills in this category could include engineers, project managers, contract negotiation specialists, integrated logistic support (ILS) professionals, test and evaluation (T&E) specialists (developmental or operational) and accounting or finance managers.

- 1.3.1.17. **Risk management.** The enquiry identified numerous examples where risk was either not identified or poorly managed throughout the capability acquisition process. The most telling cases were in situations where equipment that was marketed to defence and submitted to government as off-the-shelf, turned out to be developmental. This leads to several obvious questions:
- a. **Why was the risk not identified?** In giving evidence to the inquiry Defence claimed that it had developed increasingly robust processes to support their risk identification and management. Given the principle identified above regarding task-specific competence, it is worth asking about the skill sets and experience of the people implementing this process.
 - i. **Who is commonly involved?** Defence identified that their process requires DSTO to be responsible for conducting the technical risk assessment. DSTO have a valid role in the risk assessment, particularly where their staff have been involved with similar technology through alliance arrangements such as the technical collaboration program (TTCP) with the United States, Canada and the United Kingdom. Other people who may be involved in the process include desk officers from CDG and possibly staff from the relevant service and DMO.
 - ii. In evidence to the committee, DMO, CDG and DSTO admitted few if any of their staff had qualifications, expertise or experience in design engineering, developmental test and evaluation or certification. The majority of DSTO personnel come from a scientific rather than engineering background and their focus is predominantly on the technology itself rather than the application of the technology as part of a weapons system with all its associated integration, certification and fit-for-purpose considerations. Defence confirmed that staff from CDG and DMO were predominantly operators, engineers or

technicians who came from an environment where mature, in-service systems were the norm. Defence stated that these people were used to a culture where the manufacturer was the ultimate arbiter and authority with respect to the equipment in question. They confirmed that operators engineers and technicians in this environment would not be used to questioning the manufacturers advice or instructions.

- iii. It should come as little surprise then that when a manufacturer presents a solution and claims that it is off-the-shelf and presents a range of technical looking material to substantiate their claim that most desk officers will not be equipped to ask the relevant questions to establish the true status or extent of residual risk to close the gap in areas where development is acknowledged as being required.
- iv. **Who could be involved?** This has varied over time for the land, maritime and aerospace domains with the aerospace domain currently having most options. Over a number of decades, Defence has invested in the capability to conduct design engineering, developmental test and evaluation and certification activities for its aerospace equipment across all three services. These skills reside in the flight test engineers, experimental test pilots and flight test systems specialists from the Aircraft Research and Development Unit (ARDU—supporting Air Force and Army) and the Aircraft Maintenance and Flight Trials Unit (AMAFTU—supporting Navy).
- v. ARDU and AMAFTU in the past have been tasked to conduct evaluations prior to contract signature. Where there has been an operating product available, a Preview Evaluation (involving a series of ground and flight assessments) has been conducted resulting in a report that can inform contract negotiations about areas of risk. Where there is not yet an operational solution, they have been engaged to review requirements, specifications and to assess claims made by the manufacturer.
- vi. The competence that underpins their ability to add value to this task comes from the combination of qualifications and experience. The career path to becoming a productive member of ARDU or AMAFTU involves officer training, initial specialist training (pilots course, engineering or navigator/weapons system operator), at least one or preferably two operational tours, 12 months of tertiary level training at a specialist school in the United States, United Kingdom or Europe and then one or more years of supervised test activity within the Australian airworthiness and certification system. Only at this point are people deemed competent to support a significant development or acquisition project.
- vii. There are currently no comparable organisations in the maritime or land domains. In the past, Navy has had deep experience in shipyards

and its technical regulatory structures. There have also been centres of expertise, for example the Oberon class submarine combat system centre. The development of skill sets has tended to parallel the block replacement approach of major capabilities (ships, submarines) rather than retaining a standing capability. Land will increasingly require this capability as it moves from low-technology vehicles to complex weapons systems highly integrated into the digital battle space. Of note however, many of the systems engineering skills from the aerospace domain do transfer to other domains as evidenced by the number of ex-aerospace engineers engaged in the Air Warfare Destroyer programme and supporting land C3 (command, control and communication) projects. The aerospace capability is therefore a suitable basis for determining the types of qualification and experience required to provide this competence to the land and maritime sectors.

- b. **Why was the risk poorly managed?** Risk management only becomes an issue if the risk has been identified. As highlighted in paragraph a, scientists and service personnel who are very competent in their respective professional fields are not well equipped to work at a forensic level with design engineering and certification issues. That may go some way to explaining issues in the land and maritime domains. Given that some of the more notable failures over the past decade in Defence procurement have been in the aerospace domain, why did ARDU and AMAFTU not identify risk in a timely manner?
 - i. **Were they asked?** Since the creation of the DAO and then DMO the percentage of aerospace projects which have fully employed the capability afforded by ARDU and AMAFTU in a meaningful fashion throughout the whole capability development, acquisition, acceptance and introduction-into-service process has steadily decreased. There are several reasons for this including cost constraints, decreased awareness of their capability and role, and an increasing perception that with more off-the-shelf acquisition there is a diminishing requirement for the involvement of developmental test and evaluation organisations.
 - ii. Possibly one of the last full Preview Evaluations conducted was for Project Air 87 (Armed Reconnaissance Helicopter) which involved the significant expense of a team of test pilots and flight test engineers travelling to France to conduct a series of ground and flight tests. Other projects have involved ARDU or AMAFTU upfront to a lesser extent although nearly all have realised at some point, that the information they require to achieve certification requires some involvement of these specialist agencies. By then however, the unforeseen risks have often eventuated and schedules have started to become very tight if not already delayed. The multi-role tanker and transport (MRTT) project for example, was anticipated to be a largely off-the-shelf project and so made minimal investment in funding

project positions to enable a developmental test and evaluation capability upfront. Once the risks had materialised however, ARDU was requested at short notice to surge a large number of flight test personnel in an attempt to recover schedule.

- iii. **Were they listened to?** This question goes to the heart of the need for a system of checks and balances within a transparent, closed loop reporting system. ANAO reports often make comment to the effect that Defence was not aware of the developmental nature of the equipment and that issues became apparent after contract signature. The Committee received evidence that this “official record of events” was not always the complete picture.
 - iv. Documents provided to the Committee highlighted that the Preview Evaluation (conducted prior to contract signature) in support of Project Air 87 identified a number of risk areas including significant schedule risk due to the developmental nature of the helicopter. Numerous other software, integration and technical risks were identified, many of which subsequently eventuated and contributed to the delayed achievement of the operating capability. Despite the clear articulation of risk in the report, the contract negotiations proceeded as planned and the Committee has evidence showing DAO gave specific instructions not to release the report to the Capability Manager in Army.
 - v. In the case of the Super Sea Sprite, evidence received by the committee indicates that staff at AMAFTU on at least two separate occasions identified the high degree of risk associated with the proposal to develop a digital flight control system. A similar specific warning was made by a contractor to Defence who also stated in evidence that a significant amount of effort was made in an attempt to get project desk officers to understand or even acknowledge the implications of the risk.
 - vi. In the case of the MU90 torpedo (Joint Project 2070) the Aircraft Stores Compatibility Engineering Agency (associated with ARDU) recommended a range of evaluation activities to ascertain suitability of the torpedo for fit and integration with the AP-3C Orion. They were not funded for the proposed test activities nor was their advice heeded on the risk associated with the Project’s intention to combine integration activities for the MU90 with the JASSM.
- c. **Conclusion.** Clearly the ADF has (or has had) the ability to identify risk in many circumstances prior to contract signature. This capability has to be used to best effect if Australia wishes to retain some level of sovereignty (ie: be a “smart customer”). The competencies required to enable this risk identification must be extrapolated from aerospace and developed across the land and maritime domains. The acquisition

process must mandate their involvement early in the capability life-cycle such that the promises made by manufacturer or the assumptions underpinning indications of cost and schedule to senior committees or government can be tested and verified. There is a critical need for a transparent and closed-loop reporting system that ensures all relevant information (including dissent) is heard by appropriate decision makers. Accountability (ie: control) requires that the project director retain the discretion to assess dissenting voices and to make a recommendation to the Capability Manager and eventually to Government. The decision makers however must have disclosure of the fact that dissent was made and the basis upon which the dissenting concerns were dealt with or discarded. This disclosure needs to flow through to the Minister who may choose to consult the dissenting voice or to seek a further opinion.

- 1.3.1.18. **Organisational structure.** Post the Tange reforms of the 1970s and prior to the reforms of the 1990s, the three individual services operated largely as separate entities with command and control of all of the enabling functions. While manifestly inefficient, the arrangement was largely effective in terms of procuring and sustaining capability with a high degree of accountability (there was no one else to blame) and a solid reputation for being a smart, informed customer. The drive for efficiency as discussed above has had unintended consequences which appear to have cost the taxpayer dearly in net terms. Going back to three independent services in an attempt to remediate the unintended consequences, however, is not an option as the gains in efficiency (where they have been made) are essential to retain and develop in this cost constrained environment.
- 1.3.1.19. The analysis on accountability (above) identified that control of enabling functions must be returned to the service chiefs but subject to checks and balances from a regulator overseen by the Defence Secretary. This means that the organisation of defence must change. It will include a reduction in the number of groups and the creation of a new more defined role for the Diarchy whereby the CDF is held to account for what is done and the Secretary for how it is done (where non-military issues are involved eg: procurement, accounting, OH&S, common standards for administrative IT and pay systems etc).
- 1.3.1.20. The analysis on contestability (above) highlights that the governance of the ADO would be enhanced by a more structured engagement of the Minister through a defence board as well as developing the existing Gate Review and air/sea worthiness boards across major capabilities and projects. The concept for this new approach to Governance is developed further in Section II of these comments which outlines one approach to a systems based reform of Defence.
- 1.3.1.21. **Defence industry.** Despite the policy and the rhetoric, practice over past years has indicated that defence industry is not really seen as a key part of Australia's national security capability. For many MPs it is seen in the

context of job opportunities. For Defence, it appears to be seen as a service to be contracted when required, without much regard as to what happens in between requirements.

- 1.3.1.22. A commitment to competition appears to be paramount in DMO's thinking, even where such an approach actually drives up risk and cost in the long term. This approach is at odds with the UK for example where a single capability partner has been identified in areas where the barriers to entry are high eg: submarine construction. Long term partnerships between Defence and industry with regard to any given capability are generally desirable but must involve contracting terms that ensure value for money for the Commonwealth of Australia. This can be achieved through transparent cost structures, performance/productivity targets/reviews and options for re-tendering where value for money is not being achieved. In terms of rebuilding competence, Defence may also consider in some areas of TLS a balance of in-sourcing industry capacity (to a defence controlled engineering support system) rather than outsourcing the whole task (process and people) to industry.
- 1.3.1.23. The considerations of sovereignty apply to Australian Defence industry as much as it does to the ADO. The ability to produce everything required for the defence of Australia is not feasible. Nor is it desirable, however, to allow our technical abilities to atrophy to the point of having no choice but to accept whatever equipment another nation is prepared to sell us on their terms without understanding the true nature of capability and risk being offered. Assuming Australia wishes to retain the ability to be a "smart customer", an investment in developing industrial and technical capability has to be made at some point.
- 1.3.1.24. The health (capacity and competence) of Australia's defence industry sector should therefore be considered as part of the Capability Development process. Recommendations at 1st Pass to NSCC should include considerations of any industry capability health issue. If necessary, the 1st Pass recommendation should even constrain procurement or sustainment options in order to minimize long term capability risk as well as considering short term project risk.
- 1.3.1.25. A key to reducing risk and cost is for Government to plan for a stable procurement workload (on defence and industry) which provides incentive for private sector investment in (and sustainment of) skills and infrastructure. Defence is a monopoly purchaser, and defence industries in key areas do not have normal commercial opportunities to diversify their customer base. Where Government plans its procurement acquisition (and sticks to the plan), some manufactured and supported in Australia options can be as equally cost effective as MOTS/COTS. Investment in such procurement discipline will be of far greater value to sustaining critical defence industry capability than any form of subsidy. Where possible, priority and strategic industry areas should be supported primarily as a

function of procurement activity rather than via “access to” training funds or other support measures. Current Defence guidance on Priority Industry Capabilities (PIC) states for example: “*EW provides an essential capability edge for many of our major war-fighting capabilities there is a need to have a responsive and effective indigenous EW industry sector that can be relied upon to adapt and integrate new systems to meet the needs of our operational posture.*” Despite this, current acquisition decisions could see most aerospace platforms having EWSP systems designed and supported overseas within the decade. This will not only make the retention of this PIC problematic, it will be difficult to achieve the “*essential capability edge*” whilst lining up with other client nations looking for support from the provider when there is a new threat to be countered.

- 1.3.1.26. The committee found a distinct difference of opinion between defence and industry with regard to the timing and level of involvement in the capability development cycle. Defence cited concerns regarding probity as a reason to keep industry at arm’s length while industry cited more realistic development of requirements as a way of minimising risk. Both defence and industry agreed however that there are some mechanisms in place that allow a productive engagement well before contracts are being signed. One key example is the Rapid Prototyping Development and Evaluation (RPD&E) organisation which allows early exploration and development of concepts and technology. Of note, the Manager of RPD&E is chosen by industry and defence in collaboration such that all parties have confidence in the individual. This process holds considerable promise for other areas where all industry stakeholders and defence need to have mutual confidence with regard to probity, process and protection of IP.
- 1.3.1.27. The Committee heard significant concern from industry about the level of commercial experience within DMO, the culture, the practice and about contracting measures that resulted in lose-lose situations. Based on the process used to select the RPD&E Manager, industry should have a role in the selection of the chief executive officer of what I will call the Defence Procurement Centre of Excellence (PCOE - the group responsible to the Secretary for the setting and auditing of procurement guidelines and competencies). This same appointment could be responsible (directly or more likely via selected staff) to represent industries interests when submissions for 1st and 2nd Pass are being prepared for Government and during review boards during the life of a project. This is not at odds with the CEO’s role to advise service chiefs on procurement and sustainment as best practice will generally deliver the best outcomes for all parties involved in a contract.
- 1.3.1.28. Industry views the DCP as the key document to inform their investment decisions for workforce development and technology. Capability Managers use the DCP to plan the management of FIC for future capabilities. If the DCP is not realistic and predictable, industry incurs additional cost which either makes them unviable or eventually, is priced back into contracts with

the Commonwealth. This links back to previous discussion about the need for strategic alignment with the military effects that Government knows it can afford and commit to. It also links to the need to use proven approaches such as the Projects of Concern resolution process to make the cost / capability / schedule trade-offs required to keep projects aligned with the DCP schedule. Ministers and the NSCC must be better informed of the opportunity cost of deferring consideration of submissions for 1st and 2nd Pass approvals. Only then can they meaningfully decide if the business case actually supports the proposed delay, regardless of whether the reason is political, fiscal or just other priorities for the scheduled meeting of Cabinet.

- 1.3.1.29. The committee heard evidence about the risks and costs resulting from the stop-start nature of defence's "block replacement" approach to acquisition. The problems with the AWD build at BAES stemming from a low skill base due to gaps in ship building activity are a case in point. Evidence was also presented about the changing nature of military capability which is far more dependent on software and computing processor power. Numerous accounts were received of projects which witnessed one or more generational changes in IT technology just during the DWP to 2nd Pass approval stage. The concept of developing a specification that will provide the "right" solution for the next 30 years appears to be a paradigm of the past.
- 1.3.1.30. An alternative approach used with great success by the Japanese government in submarine construction) is phased procurement. Platforms are built with upgrades in mind (ie: designed for attributes such as access, additional power and cooling capacity). Lower production rates with continuous build programs reduces workforce risk (through improved retention of skills and design knowledge), reduces technical risk (evolving design elements rather than complete capability replacement) and spreads cost. The Collins replacement is a clear option for Australia to consider in this regard but it could equally apply to the replacement of vehicles for Army (Project Land 121 or Land 400) with phasing being aligned to the 36-month Force Generation Cycle of the three multi-role combat brigades established under Army's Plan Beersheba.
- 1.3.1.31. Evidence indicated a distinct bias against directly contracting with Australian based small to medium enterprises in the Defence sector. This has resulted in Australian designed and manufactured products being sold back to the DMO via overseas prime contractors with a significant profit margin attached. Australian SMEs have also played crucial roles in many significant acquisition programs. It was a small Australian company for example that conducted the analysis to show that the combat system being delivered with the original Collins class submarine (by an overseas prime) would not be fit for purpose⁴. Defence highlight the risk attached to

⁴ That same company was specifically excluded by the Commonwealth from providing an airborne system for the Coast Watch contract despite twice being selected by the prime contractor as the best for the job. The Commonwealth insisted on a European solution which ended up being very immature (despite the

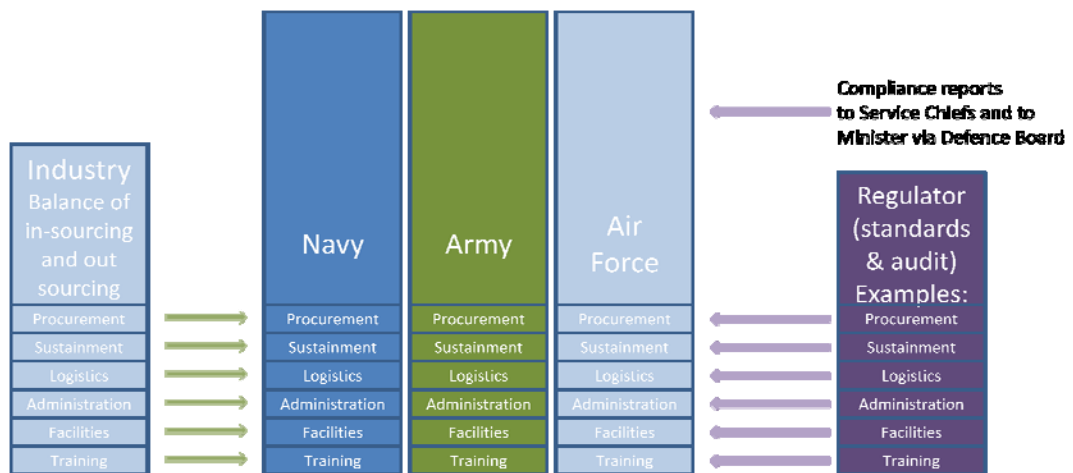
through-life-support as being one reason not to contract directly with Australian SMEs but evidence presented to the Committee indicates that this is more of a cultural issue than an issue of substance. The criteria used for source selection must be developed to provide a balance which allows Australian SMEs to compete on a level playing field where they have a technically compliant product and can demonstrate value for money.

2. SECTION II – A proposed systems approach to reform

2.1. Governance

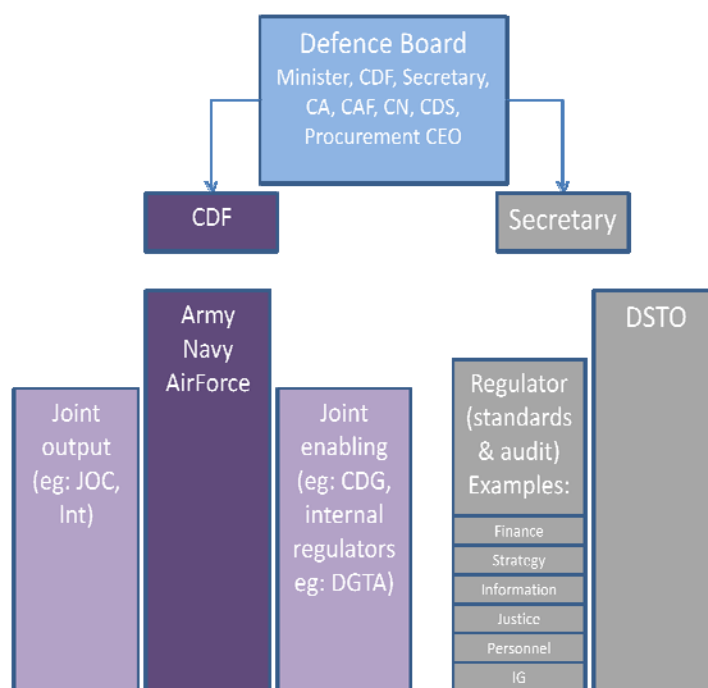
2.1.1.1. **General.** Reform of Defence is desperately needed but to date, the externally imposed and led reviews have all failed to deliver the intended outcomes, due in large part to a failure to address the underlying causes of dysfunction. The Diarchy have highlighted that the ongoing reviews merely serve to be a significant burden in terms of focus and resource at a time when the ADF is maintaining a significant level of combat and humanitarian operational commitment.

2.1.2. Drawing on the principles, analysis and conclusions in Section I, the following paragraphs attempt to outline what a systems approach to reform of the ADO might look like. It will outline a possible organisational form as well as describe the role of key stakeholders and the outcomes expected. One possible form is at Figure 1.



2.1.3. When discussing accountability, a common call by media and politicians is that defence should be run more like a business. Often their call is in relation to process but overlooks governance. The model of governance applied across nearly all public companies and not-for-profit organisations is that of a board of directors led by a chair who hold the CEO to account for the operation of the business. The chair does not run the business, but

he/she facilitates the process whereby a corporate direction is set and oversees the regular review and assessment of progress towards agreed goals as well as adherence to accepted standards and regulations. Importantly, deliberations and decisions of the board are documented and provide an auditable basis for accountability flowing both ways between the Chair and CEO. The model of a governing board, appropriately tailored, should be applied at various levels of defence, including at the interface with Government. It is compatible with the military chain of command, has been shown to work effectively across all three services (eg: in respect to airworthiness) and is the governance model of choice arising from the recent reforms in the UK. The model is effective because it uses people and process to inform an accountable decision maker, rather than bringing together a group of peer organisations, each following process in an attempt to agree by consensus. One possible form of ADO structure with a Defence Board is at Figure 2.



2.1.4. **Key elements:** In the context of Australia's defence, the key elements would be:

- a. **National Security Committee of Cabinet.** This group would continue to set the National Security Strategy, of which Defence, along with PM&C, Foreign Affairs, AG, Treasury would inform and be directed by their relevant Ministers. This National Security Strategy would provide direction for defence as to the effects and influence the Government expects the Defence Force to be able to deliver domestically, regionally and globally.

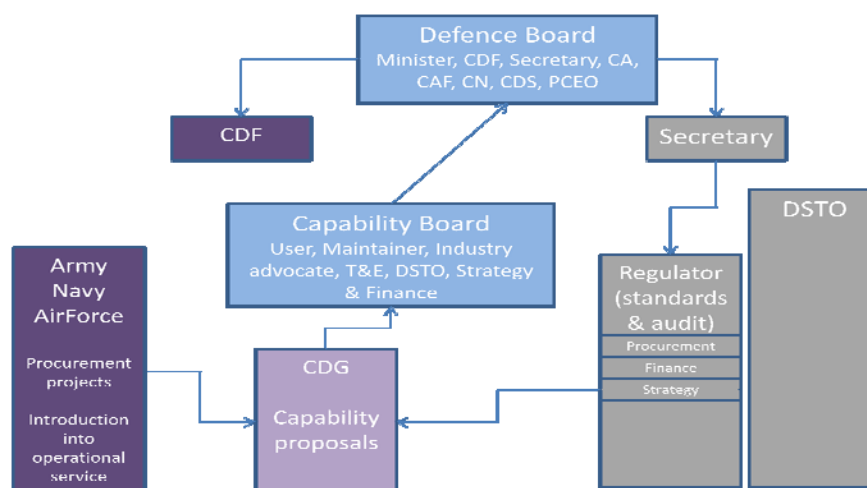
- b. **Defence Board.** The Defence Board would be chaired by the Defence Minister and meet on a regular basis throughout the year. Other members would include the CDF, the Defence Secretary, the Chief Defence Scientist, the three service chiefs⁵ and the CEO of the PCOE (ie: the procurement regulator reporting to the Secretary). The Board would act on guidance from the NSCC, approve Defence submissions to Cabinet/NSCC, set direction and approve global budgets for the department and also implement a rolling review of compliance with relevant internal and external regulation (eg: financial practice, procurement practice, OH&S, IT etc).⁶ Because the board meetings are minuted, accountability of the broader Defence portfolio to Government increases. For example, if the elected Minister of the day wishes to change Defence advice underpinning cabinet submissions, he is free to do so but it will clearly be a decision of the Minister rather than the current situation whereby ministerial staff “require” changes with no audit trail indicating that the final position was not that recommended by Defence.
- c. **Diarchy.** The Diarchy would continue but with clearly defined roles that take effect within the defence board structure. The CDF and Secretary could be considered as two CEOs in a joint venture (JV) with the Defence Minister as the Chair of the JV Board.
- 1) The CDF would in effect act as the JV CEO of the Defence Department and be accountable for the conduct and outcomes of the Department.
 - 2) The Secretary would become the JV CEO responsible for any governance regulations to be applied across the services (eg: financial practice, procurement practice, OH&S, IT). He would also be responsible to conduct regular audit and reporting to the Board of the qualifications of key appointment holders within Defence organisations (Services, DSTO etc) and the degree of compliance within each organisation. He would also be the sponsor for any ‘contestability’ functions that central agencies (eg: Finance) wished to apply to Defence processes (eg: capability development).
- d. **Capability Board.** The Capability Board receives direction from, and reports to, the Defence Board. The Board is chaired by the VCDF and like the successful Airworthiness Boards, captures both corporate knowledge and current regulatory knowledge by drawing on

⁵ The Minister may also choose to have non-executive directors on the board to provide broader perspective and experience to strategic and commercial deliberations.

⁶ This resolves the current dilemma whereby in the search for savings through alignment of process, shared services have broken the continuity of command and destroyed accountability. Under this model, alignment (efficiency) is achieved through common standards which are audited and reported to the Board (effectiveness), while the CDF and Service Chiefs retain command and control of all the personnel and resources they require to achieve their outcomes (hence accountability).

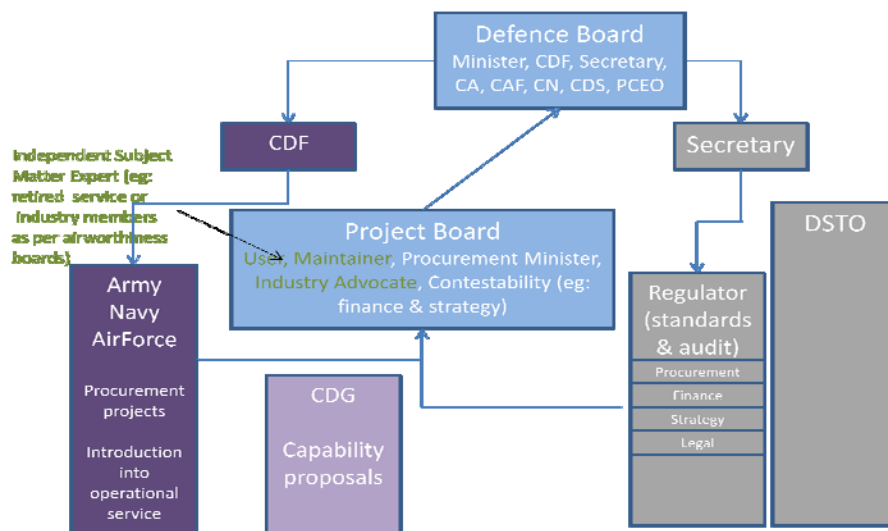
representatives of the key stakeholders (operators, maintainers, logisticians and industry) who are expert, experienced and independent. These members are balanced by representatives of the other key stakeholders who provide contestability being DSTO, PCEO, Finance and the Strategy group (under the Defence Secretary). Like the Airworthiness Board, the experienced members could be drawn from panels of active reserve senior officers from relevant professional streams and recently retired industry executives. This mix of backgrounds and experience address one of the fundamental weaknesses and criticisms of the current process whereby some commentators doubt the contestability, viability, strategic linkage of capability proposals that come to government for 1st and 2nd Pass Approval. The experience and independence of the Board would overcome the “conspiracy of optimism” that often accompanies a proposed capability case. The key Board outcomes include:

- 1) direction to the capability Development Group when a capability gap is identified and the capability development process is initiated;
- 2) review of the capability case (periodic eg: annual or at transition points in the process eg: pre 1st Pass) with report back to the Defence Board as a routine matter including recommended direction, constraints or enhancements to the capability proposal in question;⁷ and
- 3) A recommendation as to the level of oversight required during procurement based on the complexity, scope and cost of the capability in question.



⁷ This may include increasing or decreasing the scope of a capability, cancelling a capability, bounding the procurement options eg: a new C17 may be decided ahead of 1st pass Submission that it will be an FMS purchase.

- e. **Procurement Board.** Following 2nd Pass Approval, as the transition to a procurement process occurs, the ongoing audit of compliance with agreed scope, procurement procedures, schedule, cost and performance is taken up by a Procurement Board. This Board works on the same basis as an Airworthiness Board and reports via the VCDF to the Defence Board on a periodic or transition milestone basis. Depending on the level of review determined by the Capability Board, the seniority and scope of the members of the Board will be determined by the VCDF. This process overcomes the current flaws in reporting process whereby critical deficiencies or risks identified at the working level are transformed through various summation processes to a “Green traffic light” by the time the report reaches the CDF and Minister. This will allow earlier a specific and informed corrective action or re-scoping where required.



2.2. Strategy

- 2.2.1. **General.** In a fiscally constrained environment, good governance demands that strategy, planning, resource and Government expectations must align if national security is not to be compromised. Gone is the era where Defence is able to retain the unplanned capacity to surge at short notice for any sustained period of time to overcome shortfalls in governance. The NSCC is the key body in Government to decide on national security strategy and the role that Defence should play within that. Currently, the governance linkages do not appear to be connected. In the absence of classified briefings, the current correlation between NSCC strategic direction and the White Paper is assumed to be plausible. Without access to current classified Preparedness Directives, the correlation between NSCC and force structure and depth of military capability actually maintained is not known but it certainly does not appear to match the White Paper. While there will always be a trade off between the publically releasable White Paper (with its intended audience including regional powers) and full disclosure of the actual level of capability planned/maintained, feedback from senior officers

indicates that Government expectations and funding do not align with strategy and planning.

- 2.2.2. **Whole Government Approach.** Defence is just one of a number of agencies that contribute to national security. Australia's foreign policy should be a key driver for the scope and nature of military effects required by Government domestically, regionally and globally. Other agencies such as the AFP, ASIO, ASIS and ANO may well identify specific areas (such as counter terrorism) where specific Defence capabilities are required that will further shape Government's expectations of Defence capability and capacity. During this development process, Defence needs to provide proactive, iterative feedback about the likely real costs of acquiring and deploying the types of capability such that NSCC expectations are both realistic and affordable. The worst possible outcome would be to continue the situation whereby Government tasks Defence to develop a scope of military infrastructure and capability that the Government is unaware that it will never be able to adequately fund to allow Defence to maintain (to Commonwealth standards) or deploy on sustained operations.
- 2.2.3. **White Paper.** The White Paper process should be an opportunity to test, develop and contest broad guidance from NSCC and then present the concepts in a publically releasable form. Indeed the introduction to the 2009 White Paper states: *"This new Defence White Paper explains how the Government plans to strengthen the foundations of Australia's defence. It sets out the Government's plans for Defence for the next few years, and how it will achieve those plans. Most importantly, it provides an indication of the level of resources that the Government is planning to invest in Defence over coming years and what the Government, on behalf of the Australian people, expects in return from Defence"*. The fact that Defence puts up submissions not knowing if they will be approved and that the Minister can add, cancel or delay projects without changing the DCP or DWP indicates that the strategic alignment is not as robust as it should be. The key links that need to be reinforced are the iterative steps between NSCC guidance and the team undertaking enabling work that occurs prior to the White Paper process. The Government should understand and own the operational concepts and associated costs that enable Defence to fulfil the roles identified through the development of a whole of Government National Security Strategy. The White Paper should not be aspirational but a realistic balance between what is needed vs what can be afforded and when. Only then will the Defence Capability Plan return to being a meaningful document that can be used by Government, Defence and industry alike to plan productive capacity and an even spend spread over the validity period of the plan.
- 2.2.4. **Capability Evaluation.** If Defence capability is to be viewed through the prism of outcomes that support the National security strategy then a more effective measure of ADO and Executive Government performance can be developed. If for example our National Security Strategy called for the ability to repeat the kind of intervention undertaken in East Timor, then the

FIC that was required to mount and sustain the intervention can be quantified. Once the Government confirms its intent to be able to mount an intervention via the DWP, the DCP captures the nature and schedule of programs for any upgrades or replacement of equipment required for the task and the CDF is accountable to keep the capability available to Government at a specified notice. The public can also hold the Government to account such that any cuts to spending can be measured against the cost baseline and cost growth pressures. Various think tanks (eg: The Williams Foundation) have developed operational scenarios that provide an example of the way defined military effects and therefore capability could be identified and measured on an outcomes basis.

- 2.2.5. To borrow concepts from the US DoD model of the Quadrennial Review, the ability to evaluate capability derived from Strategy requires:
- a. a defined Defence strategy and operational concepts that are consistent with the most current NSCC National Security Strategy;
 - b. a defined force structure and readiness levels to enable the operational concepts for both wars of choice and wars of necessity as well as national tasking and humanitarian missions; and
 - c. Defence budget plans sufficient to provide for the maintenance to Commonwealth standards (or to exempted levels) of all fundamental inputs to the agreed force structure (organisation, personnel, collective training, major systems, supplies, facilities, support, and command and management) to support the raise, train and sustain function across the full range of missions called for in the operational concepts;
 - d. Defence budget plans and any additional resources needed to carry out such missions in a “a war of choice” (eg: Afghanistan) for an agreed period; and
 - e. Defence budget plans to acquire and maintain the level of reserve capability (“war stock”) Australia is prepared to maintain in the event of a war of necessity.
- 2.2.6. Under this model, accountability is increased. Defence knows exactly what they have to provide to Government for a range of operational concepts and Government knows exactly what options they have for the funding provided. Commitments by Government to UN or allied operations, disaster relief or other national tasking all has to come out of the capability and capacity that has been agreed. If Government wish to exceed the capacity, the Defence Board is in a position to identify to NSCC the short and long term costs of their proposed commitment. Both parties accept that a “lean” organisation cannot just surge without losing capacity or capability unless resources are increased. By adopting this model, the Executive Government

will be able to work constructively with Defence in an environment of mutual accountability.

2.3. Capability (Acquisition, Sustainment and Industry)

- 2.3.1. **General.** The Defence Capability Plan is currently an aspirational, moving feast of potential Government commitment. The uncertainty is highlighted by the current arbitrary decisions to defer billions of dollars of projects which is causing defence industry to be stressed to the point of failure (eg: some companies have gone into receivership and other companies are laying off staff). The governance and strategy models outlined above will go some way to providing certainty as well as effective, efficient and accountable processes for Government, Defence and Industry. Inherent in this governance structure is a principle that defence industry is part of National Defence capability. Capability Development Group therefore has a key role in determining what industry capability and capacity is critical to national security and then shaping procurement to provide an enabling path to sustain the desired industry sector.
- 2.3.2. **Link to strategy.** The Defence Board will take direction from NSCC via the operational concepts and White Paper and task the Capability Board to assemble a suitably qualified and experienced team to develop the capability proposal. Where operational requirements result in a capability gap being identified, the Defence Board will assess the budgetary and operational implications and as appropriate, direct the Capability Board accordingly. The other key link at this point is to industry. The Capability Board will assess the range of industry capabilities and capacity required to support Australia's ability to conduct an agreed level of independent operations and effect battle damage repair or operational modifications. The Board will then make recommendations to the Defence Board at 1st Pass Approval as to the method of procurement that will allow Australian industry to develop or sustain the required capability or capacity. Once agreed by the Defence Board, this will determine the procurement method, thus providing industry certainty. If for example the recommendation is for an FMS purchase (eg: an additional C-17), industry would know not to bother bidding whereas an early decision to manufacture and support in Australia would enable industry to make their own commercial risk decisions as to their place in the market and likelihood of success, confident that they would not invest in a bid team and staff build up just to have a late notice decision by Government to purchase a MOTS solution.
- 2.3.3. **Sovereignty.** The Capability Board would initiate consideration of the degree of sovereignty required by Australia in respect to indigenous industry capability and ADO competencies. Recent experience highlights however that the Defence Board and NSCC would also have significant input into the degree to which sovereignty consideration should affect force structure, procurement and deployment decisions.

- 2.3.4. There will need to be interaction between the Capability Manager and the Defence Board around the extent to which equipment procured as MOTS (even through FMS) may or may not be suitable for operations. The CH-47D is a case in point. Procured under an FMS case from the US Army, it was not considered suitable for deployment to the Middle East Area of Operations (MEAO) until a number of upgrades were conducted by Australia to overcome deficiencies in the standard US Army configuration. The upgrades included an effective EWSP suite, the M134 Dillan 6-barrel minigun, ballistic protection, the Engine Air Particle Separator (EAPS) system to protect the engines from sand and the Blue Force Tracker. Another recent example is the MRH90 helicopter which will have to have the OTS troop seating replaced, the door gun modified such that troops can actually egress the aircraft while the gun is providing protective fire and ongoing modifications to night vision related lighting and display equipment that have not proven suitable for tactical missions under low-light conditions.
- 2.3.5. In order to retain the long-term sovereign ability to assess risk and develop capability, the Defence Board may need to make specific procurement decisions on a different basis to current thinking. For example Australia is currently on track to have an entire fast jet fleet of Joint Strike Fighter (F35 JSF) which will have all its development, test and certification undertaken in the USA. Combined with a leased OTS lead-in fighter (BAE Hawk), the C17 (OTS), the C130J (OTS), the C27J (OTS) Australia could be in a position within the decade where it has lost the competence for design engineering, test, development, repair or certification activities in support of fixed wing aircraft and their subordinate systems.
- 2.3.6. As demonstrated by the CH-47D, situations will arise where Australia will require this indigenous capability to support operations and it will certainly need the capability as part of remaining a “smart customer” for future acquisition. Including long term “sovereign capability” considerations in capability planning could for example lead to:
- a. Identifying the need for political pressure on the provider nation (the USA in the case of JSF) to provide better access to Australian ADF, DSTO and industry; or
 - b. A decision to reduce the fleet size of the primary JSF platform so as to have funding available to procure an alternative platform that would allow this sovereign capability to be retained and developed⁸.

⁸ Choosing to have an additional aircraft type to support sovereignty would need the type be specifically chosen for its current performance, systems growth potential and the availability of a technology partner willing to share IP (one example being the F15 and Israel, a nation that Australian has had extensive technical military engagement with in the past). Like the F15-I, an indigenously developed platform also provides an element of unknown to a potential adversary with regard to actual capability.

2.3.7. **Procurement.** Procurement would be the responsibility of Service Chiefs as the Capability Managers. They would have control of their budget, staff and priorities such as to be able to balance training, operational and maintenance requirements of assets and the comparable demands on personnel. This is a critical interface which is currently poorly managed and often affects both legacy capability as well as the successful introduction into service of the new capability. The efficiencies envisaged through the creation of DAO and DMO will still be achieved through the Secretary exercising the regulatory authority and audit role to ensure compliance with defence standards, regulations and procedures. While the Service Chiefs would report to the Defence Board on the outcomes (ie serviceability rates), the Secretary would report on the extent of compliance. Feedback from senior Defence officers indicates that establishing additional groups within the enabling areas of defence just because the outcome is “joint” is wasteful and no longer required now that a combined arms defence culture is firmly established. Procurement for Joint capabilities would be facilitated by a lead Capability Manager.

2.3.8. **Sustainment.** Sustainment would also be the responsibility of Service Chiefs as the Capability Managers. Like procurement, they would have control of their budget, staff and priorities such as to be able to balance training, operational and maintenance requirements of assets and the comparable demands on personnel. The efficiencies envisaged through the creation of DMO will still be achieved through the Secretary exercising the regulatory authority and audit role to ensure compliance with defence standards, regulations and procedures. While the Service Chiefs would report to the Defence Board on the outcomes (ie serviceability rates), the Secretary would report on the extent of compliance.

2.4. Implementation

2.4.1. **General.** The implementation of this reform must not be preceded by another external review. Key stakeholders should be briefed on the desired outcomes (directive control) and then tasked to develop a transition plan that meets the Government objectives while allowing ownership of the process by defence.

2.4.2. **Stakeholders.** The principal stakeholders for planning and implementation must be the CDF and Secretary. Noting that many of the SES management across the broader Defence organisation may become redundant, they should be briefed by the Minister but only play an active role in developing the transition to the extent determined by the CDF and Secretary. Some workforce (APS and ADF) at all levels will transfer to the services and some will transfer to the new regulatory bodies to be established under the Secretary.

2.4.3. **Timeframe.** Once the CDF and Secretary have been briefed on the expectations of Government in respect to the new Governance model and

expected outcomes, the Diarchy should be given a finite period (three - six months) to develop their implementation plan. Over this period of transition planning, the defence Board should begin to meet, refine its own procedures and document decisions taken. Implementation in accordance with the schedule developed by the CDF and Secretary should be complete within the following 24 months during which time the Capability and Procurement Boards must commence their function.

Cost considerations. The direct savings in the order of \$1bn could be expected over the forward estimates from the elimination of the duplicated management structures. Attributed infrastructure cost over time will also be less due to fewer “groups” within the Defence department but transition costs would need to be allowed for. Within the scope of these comments, no attempt has been made to quantify the efficiency dividend of restoring accountability but given the numerous examples of waste identified during the inquiry, the savings are expected to be significant.

3. SECTION III – Conclusions

3.1. Conclusions

3.1.1. **General.** The current model of governance is dysfunctional and is a root cause of the lack of: accountability; efficiency; and effectiveness that characterises the broader Defence organisation. Unintended consequences arising from reforms over the past two decades have played a significant role in creating this situation.

3.1.2. Specific Conclusions from Section I regarding causes.

- a. Accountability will only be achieved if Government empowers Defence to reduce the number of groups in the ADO and to restore the continuity of command by returning control of enabling functions to the ADF. Efficiency and effectiveness can be best achieved by having the Secretary oversee a regulator that: sets the standards to be complied with; determines the competence required before personnel will be authorised to exercise their authority (limited if required); and audits compliance.
- b. Defence must build on successful measures such as Gate Reviews and Air/Seaworthiness Boards to establish a consistent framework for contestability. The framework must include a transparent, closed-loop reporting mechanism so that dissenting voices are heard by the relevant decision maker.
- c. The success of the resolution process for Projects of Concern has demonstrated that it is possible to have senior stakeholders agree on trade-offs to cost, schedule and capability to avoid project failure. There may be times where such a trade-off should in fact be made pre 1st or 2nd Pass rather than delay submissions to NSCC. Conversely, insufficient

information to be able to accept the risk profile of a project may mean that it should not proceed. Lack of capital productivity is a significant cost driver for Government in the defence portfolio and timely decision to commit, to defer for a defined period or to cancel has the potential to achieve significant savings over time.

- d. The ADO is often under media and political pressure to reduce the number of “contractors and consultants” as a cost saving measure. If the Australian Public Service (APS) or uniformed personnel do not have the required competence for the role, this is not only false economy due to decreased productivity, it directly elevates the project risk. Government must be prepared to defend the right of Capability Managers to engage (employ or contract) the skills they need to complete the tasks they are given. If the nation cannot afford to engage task-competent people to manage multi-million dollar projects, the project should be deferred or cancelled.
- e. The ADF has (or has had) the ability to identify risk in many circumstances prior to contract signature. This capability has not been used to best effect with dissenting voices sometimes ignored. The decision makers must have disclosure of the fact that dissent was made and the basis upon which the dissenting concerns were dealt with or discarded.
- f. Defence Industry is part of Australia's defence capability, particularly for Through Life Support (TLS) but also in some areas of development and manufacture. The health (capacity and competence) of Australia's defence industry sector should therefore be considered as part of the Capability Development process. A key to reducing risk and cost is for Government to plan for a stable procurement workload (on defence and industry) which provides incentive for private sector investment in (and sustainment of) skills and infrastructure.

3.1.3. **Specific Conclusions from Section II regarding reform:**

- a. The conclusions from Section I should be facilitated by adoption of governance model headed by a Board, based on existing practice in the commercial world and parts of the military. The Minister should Chair the Defence Board.
- b. The VCDF should be accountable for the capability development process to ensure a whole of defence outcome including recognition of the role that industry plays as a part of defence capability. The service chiefs, being the Capability Managers should be accountable for procuring, sustaining and operating capability.
- c. Defence Strategy must flow from a whole of government National Security Strategy and linkages between the strategy, government

expectations, operational concepts (including force structure and capability/capacity) and allocated resources must be clear and validated on a regular basis.

- d. The Government must commit to the development and retention of an agreed level of competence in the ADF and Australian industry to assess, repair, develop, and certify equipment to a standard of our choosing. Once the areas of competence and level of sovereignty is agreed, this must inform procurement decisions such that opportunities to retain and develop skills will continue to exist for Australians.
- e. The Government could use the concept proven by RPD&E (where industry and Defence jointly select an individual trusted by all parties to be the program manager) to have industry select the head of the procurement centre of excellence.
- f. The concept of directive control as practiced by the military should be used whereby the CDF and Secretary as the key stakeholders will be tasked by the Minister to develop within three–six months an implementation plan to achieve the agreed outcomes. Once agreed by the Board, the CDF and Secretary should be required to implement the transition in accordance with their plan but ideally within a period not exceeding 24 months.

Senator David Fawcett

LP, South Australia

Additional Comments by Senator Scott Ludlam

Australian Greens Senator for Western Australia

Defence procurement has been the subject of numerous inquiries, reviews and reform efforts over decades. This inquiry and report have usefully reflected on recent developments and their adequacy in improving the complex defence procurement process.

Parliamentarians bear ultimate responsibility for waste, shortfalls and systemic failures in the defence procurement process, given that the Parliament approves the spending of over \$66 million a day on defence.

The potential for Parliamentarians to practically shoulder that responsibility and scrutinise decisions on behalf of the people they represent is inhibited when information is not publicly disclosed.

While some details and planning are confidential for legitimate security reasons, those reasons are frequently overstated, which has resulted in an entrenched democracy deficit in decision making about security expenditure.

The ultimate ‘source code’ for all downstream procurement decisions are Defence White Papers, which set the strategic template within which more fine-grained capability decisions are made. It is therefore profoundly concerning to discover that

White Papers can be deliberately misleading. In December 2010, leaked US State Department cables revealed the disconnect between our government’s actual defence purpose and the stated defence posture outlined in the 2009 White Paper.

The Committee’s report goes some way to making the process of procurement more transparent. It does not, however, examine the crucial step upstream of the procurement machinery in which the strategic environment is assessed in order to guide decisions on what equipment will be required to meet security threats.

As we approach the 2013 Defence White Paper process, we have an opportunity to increase transparency and accountability, and introduce a degree of contestability. We also have an opportunity to take a serious second look at the existing and potential security implications of a changing global climate, a massive security issue that was unforgivably viewed as irrelevant until 2030 in the last White Paper.

The Australian Greens thank the many experts who gave generously of their time and the Committee secretariat whose tireless efforts have compressed the expertise, examples and lessons learned into proposals for improvement.

Senator Scott Ludlam

AG, Western Australia

Appendix 1

Public submissions

- 1 Emeritus Professor Lawrence J. Doctors
- 2 Dr Richard Brabin-Smith
- 3 Air Commodore (retired) E.J. Bushell
- 3A Supplementary Submission
- 3B Supplementary Submission
- 3C Supplementary Submission
- 3D Supplementary Submission
- 3E Supplementary Submission
- 3F Supplementary Submission
- 3G Supplementary Submission
- 4 Northern Territory Government
- 4A Supplementary Submission
- 5 The Returned and Services League of Australia Limited
- 6 Australian Business Defence Industry Unit
- 6A Supplementary Submission
- 7 CAE Australia Pty Ltd
- 8 Mr Andrew Davies and Mark Thomson
- 9 Submarine Institute of Australia Inc
- 10 Australian Industry Group Defence Council
- 11 Australian Manufacturing Workers' Union
- 11A Supplementary Submission

- 12 BAE Systems Australia
- 13 Sonartech ATLAS Pty Ltd
- 14 QinetiQ and BMT Design and Technology (Joint submission)
- 14A Supplementary Submission
- 15 Babcock Pty Ltd
- 16 Defence Teaming Centre
- 17 Australian Association for Maritime Affairs
- 17A Supplementary Submission
- 18 Royal Institution of Naval Architects, Australian Division
- 19 Australian Industry and Defence Network (AIDN)
- 20 Mr Bruce Green
- 21 Department of Defence
- 21A Supplementary Submission
- 21B Supplementary Submission
- 22 Australian National Audit Office
- 22A Supplementary Submission
- 23 Department of Finance and Deregulation
- 24 Confidential
- 25 Confidential
- 26 Confidential
- 27 Victorian Government
- 28 Transparency International Australia
- 29 Motive Power Pty. Ltd
- 30 Miller Costello and Company

- 31 Defence Science and Technology Organisation
- 32 Engineers Australia
- 33 Confidential
- 34 Mr Derek Woolner
- 35 Commodore (retired) Ormsby R. Cooper
- 36 Association of Professional Engineers, Scientists and Managers Australia
- 37 Mr J F De Wet
- 38 Confidential
- 39 ASC
- 40 Air Power Australia
- 40A Supplementary Submission
- 41 DMO
- 42 Mr P.J Carson

Appendix 2

Public hearings and witnesses

Thursday 11 August 2011—Canberra

BOND, Mr Kim, Senior Director, Performance Audit Services Group, Australian National Audit Office

BURNS, Mr Christopher Mark, Chief Executive Officer, Defence Teaming Centre

CAHILL, Mr Matt, Group Executive Director, Performance Audit Services Group, Australian National Audit Office

HOLBERT, Ms Fran, Executive Director, Performance Audit Services Group, Australian National Audit Office

MANSELL, Mr Brian, Chairman, Corporate Members Group, Australian Business Defence Industry Unit

McPHEE, Mr Ian, Auditor-General, Australian National Audit Office

O'CALLAGHAN, Mr John, Executive Officer, Australian Industry Group Defence Council

PRIESTNALL, Mr Graham, President, Australian Industry and Defence Network Inc.

TONKIN, Mr Robert, National Secretary, Australian Industry and Defence Network Inc.

WHITE, Mr Ben, Manager, Australian Business Defence Industry Unit

WHITE, Mr Michael, Executive Director, Performance Audit Services Group, Australian National Audit Office

WILLOX, Mr Innes Alexander, Director, International and Government Relations, and Executive Director, Australian Industry Group Defence Council

Friday 12 August 2011—Canberra

DAVIES, Dr Andrew John, Private capacity

GEHLING, Mr Robin Charles, Secretary, Australian Division, Royal Institution of Naval Architects

GRIFFITHS, Mr Richard David, Chair of the Board, Australian Association for Maritime Affairs

GROVE, Mr Ken, Director of Strategic Development, Babcock Pty Ltd

HOROBIN, Mr Peter, President, Submarine Institute of Australia Inc.

LOCKHART, Mr Craig, Chief Executive Officer, Babcock Pty Ltd

MACDONALD, Mr Gordon, Executive Director, BMT Design and Technology

RENILSON, Professor Martin Robert, President, Australian Division, Royal Institution of Naval Architects

THOMSON, Dr Mark John, Private capacity

WATES, Mrs Wendy Denise, Strategic Business Team, QinetiQ Pty Ltd

Wednesday 5 October 2011—Canberra

BINSKIN, Air Marshal Mark Donald, Vice Chief of the Defence Force, Department of Defence

BROWN, Air Marshal Geoffrey Charles, Chief of Air Force, Royal Australian Air Force

CALIGARI, Major General John, representing Chief of Army, Australian Army

DAY, Major General Stephen Julian, Capability Manager, Department of Defence

DERWORT, Air Commodore Noel Gregory, Commander, Aerospace Operational Support Group, Royal Australian Air Force

GRAYSTON, Mr Rupert, Acting Chief Executive, Engineers Australia

HARVEY, Air Marshal John, Chief, Capability Development Group, Department of Defence

JACKSON, Mr Brent, Director, International and National Policy, Engineers Australia

JONES, Rear Admiral Trevor Norman, Acting Chief of Navy, Royal Australian Navy

McKENZIE, Mr Ian Robert, Acting Deputy Secretary, Intelligence and Security, Department of Defence

ORME, Mr Neil, Acting Deputy Secretary, Strategy, Department of Defence

ROBINSON, Dr David Keith, Director, Education and Assessment, Engineers Australia

SARE, Dr Ian Richard, Deputy Chief Defence Scientist, Platform and Human Systems, Defence Science and Technology Organisation

SMITH, Mr James Stuart, Chief, Projects and Requirements Division, Defence Science and Technology Organisation

Friday 7 October 2011—Canberra

CAWLEY, Mr Andrew, General Manager, Programs, Defence Materiel Organisation

CROSER, Mr Peter, Acting Program Manager, Air Warfare Destroyer, Defence Materiel Organisation

DUNSTALL, Mr Harry, Acting Deputy Chief Executive Officer and General Manager, Commercial, Defence Materiel Organisation

HARVEY, Air Marshal John Paul, Chief, Capability Development Group, Department of Defence

KING, Mr Warren, Acting Chief Executive Officer, Defence Materiel Organisation

MCKINNIE, Mrs Shireane, General Manager, Systems, Defence Materiel Organisation

MOFFITT, Rear Admiral Rowan C, Head, Future Submarines Program, Capability Development Group, Department of Defence

THORNE, Air Vice Marshal Colin, Head, Aerospace Systems Division, Defence Materiel Organisation

Wednesday 12 June 2012—Canberra

BRABIN-SMITH, Dr Richard, private capacity

BUSHELL, Air Commodore (Retired) E.J., private capacity

DAVIES, Dr Andrew, private capacity

HOLBERT, Ms Fran, Executive Director, Performance Audit Services Group,
Australian National Audit Office

IOANNOU, Dr Tom, Group Executive Director, Performance Audit Services Group,
Australian National Audit Office

O'CALLAGHAN, Mr John, Director-Defence & Government Relations, Australian
Industry Group Defence Council

WILKINSON, Mr Alex, Senior Director, Performance Audit Services Group,
Australian National Audit Office

WOOLNER, Mr Derek, private capacity

Thursday 13 June 2012—Canberra

CAWLEY, Mr Andrew, General Manager, Programs, Defence Materiel Organisation
du TOIT, Rear Admiral Allan, Head Navy Capability, Department of Defence

DUNSTALL, Mr Harry, Deputy Chief Executive Officer DMO/General Manager
Commercial, Defence Materiel Organisation

GALLACHER, Mr John, Gate Review External Board Member

GRIGGS, Vice Admiral Ray, Chief of Navy, Department of Defence

HUGHES, Mr Owen, Gate Review External Board Member

HURLEY, General David, Chief of the Defence Force, Department of Defence

IRVING, Mr Ian, Gate Review External Board Member

JOHNSON, Mr Paul, Gate Review External Board Member

JOINER, Group Captain Keith, Director General Test & Evaluation, Department of
Defence

JONES, Vice Admiral Peter, Chief Capability Development Group, Department of
Defence

KING, Mr Warren, Chief Executive Officer, Defence Materiel Organisation,
Department of Defence

LEWIS, Mr Duncan, Secretary of Defence, Department of Defence

LOUIS, Mr Edward, Gate Review External Board Member

LOUIS, Ms Kate, Assistant Secretary Investment Analysis, Department of Defence

McKINNIE, Ms Shireane, General Manager Systems, Defence Materiel Organisation

NEUMANN, Dr Ralph, Gate Review External Board Member

SMITH, Mr James, Chief Projects and Requirements Division, DSTO, Department of
Defence

WILLIAMS, Dr Ian, Gate Review External Board Member

Appendix 3

Tabled documents, answers to questions on notice and additional information

Additional Information Received

- 1 Dr Mark Thomson and Dr Andrew Davies-Public hearing dated 12 August 2011—Serving Australia-Special Report June 2011-Issue 41-Serving Australia Control and administration of the Department of Defence
- 2 Dr Mark Thomson and Dr Andrew Davies-Public hearing dated 12 August 2011—The cost of Defence ASPI Defence Budget Brief 2011-2012
- 3 Australian Industry Group Defence Council-Public hearing dated 11 August 2011—Opening statement
- 4 Australian Association for Maritime Affairs-Public hearing dated 12 August 2011—Opening statement
- 5 Submarine Institute of Australia Incorporated-Public hearing dated 12 August 2011—Opening statement
- 6 QinetiQ and BMT Design and Technology-Public hearing dated 12 August 2011—Additional information
- 7 Australian Industry and Defence Network-Public hearing dated 11 August 2011—Answer to a question taken on notice by Mr Graham Priestnall
- 8 Department of Defence-Public hearing dated 5 October 2011—Offshore Combatant Vessel
- 9 Department of Defence-Public hearing dated 5 October 2011—Project SEA 1180-Patrol Boat, Mine Hunter Coastal and Hydrographic Ship Replacement
- 10 Capability Development Group, Department of Defence-Public hearing dated 7 October 2011—Opening statement
- 11 Engineers Australia—2010 Salary and Benefits Survey-Public Hearing dated 5 October 2011
- 12 Engineers Australia—Regulation of Engineers-Public Hearing dated 5 October 2011
- 13 Department of Defence—Additional information dated 9 August 2011

- 14 Department of Defence—Additional information dated 4 October 2011
- 15 Dr Andrew Davies—Additional information dated 12 June 2012
- 16 Department of Defence—Public Hearing dated 13 June 2012-Capability Development Process 2012 (Requirements Phase)
- 17 Public hearing dated 13 June 2012—Australian Defence Test & Evaluation Office Organisational Structure 2006-2012
- 18 Public hearing dated 13 June 2012—Australian Defence Test & Evaluation Office Organisational Structure 2012-2015

Answers to Questions on Notice

5 and 7 October 2011

1. Department of Defence

Appendix 4

Independent Members of the Defence Gate Review Board – Background and Experience

Independent Members of the Defence Gate Review Board appeared at the 13 June 2012 public hearing and, as requested by the Chair, outlined their background and experience

Mr Owen John Hughes

- 42 years experience in the Royal Australian Navy (RAN), including experience in aviation, surface ships and submarines.
- 10 years in RAN as project director for the Collins class submarine program, including experience in project management.
- Since retiring from RAN, has been a consultant to Defence and defence industry.

Mr John Robert Ross Gallacher

- Over 40 years experience in the private sector, about 30 years in oil and gas construction with major projects in Australia and other countries.
- Over 10 years experience in shipbuilding in Australia, including in the commercial sector and for Defence.
- About 10 years of connection with Defence and their procurement and interface with the private sector.
- Currently a consultant and an external board member.

Dr Ralph Neumann

- Worked for Defence for 30 years, starting work as a scientist.
- Member of FDA for about 10 years.
- Majority of experience is in capability development, but has spent over 10 years on assurance boards with Defence Materiel Organisation (DMO) and its predecessors.
- Since retiring, has spent five years as a consultant to government agencies.

Mr Paul Conrad Johnson

- 22 years in the RAN as an aeronautical engineer.
- 26 years with large industry, starting with General Electric Aerospace (which became Lockheed Martin).

- Other experience includes regional responsibilities, starting companies, downsizing companies, and overseen very substantial developmental programs.
- Last 10 years, has worked for Lockheed Martin, growing the local presence for that organisation.
- Notes that he 'Joined the gate reviews very recently but with a good deal of 'going up dry gullies', as the Americans call them, and learning what not to do in many areas of running a business.'

Mr Ian Bryan Irving

- 24 years working in defence industry in Australia.
- Has worked in a number of the major international primes, and has worked across many of Australia's major defence acquisition programs over that period of time in the maritime, aerospace and land domains, working closely with the DMO and the services.
- Currently running own consultancy.

Dr Ian Sidney Williams

- Over 30 years with Defence, starting as a scientist.
- Headed FDA Division for a number of years.
- Was briefly the Chief Finance Officer of Defence, and some years later Chief Finance Officer of DMO.
- About four years running Land Systems Division of DMO.
- Was responsible for leading the implementation of the Kinnaird reforms of DMO.
- Was inspector general responsible for investigations and audits.
- Retired from Defence over a year ago and is currently on Defence gate boards.