Australian National
Audit Office

Sustainment Reporting
Briefing Paper

Joint Committee of Public Accounts and Audit

October 2015

Contents

Executive Overview

On 30 September 2014 the Joint Committee of Public Accounts and Audit (JCPAA) requested that the Australian National Audit Office (ANAO) develop a detailed options paper on sustainment reporting, for its consideration. Following the subsequent briefings by the ANAO and the then Defence Materiel Organisation (DMO), the Committee selected an in-camera briefing by the Department of Defence (Defence), scheduled for 13 November 2015, to assist in the Committee's deliberations on Defence sustainment reporting.

In preparation for the in-camera briefing, the Secretariat requested a written overview of 'sustainment' from the ANAO, to assist the Committee. In response to this request, this paper provides additional reference points prior to the briefing by Defence, including:

- background information following the ANAO's Sustainment Reporting Options Paper;
- discussion on the existing sustainment reporting through the Defence Portfolio Budget Statements, Annual Reports and online;
- discussion of the impact of the First Principles Review;
- exploration of the sustainment issues identified in other review reports, including the Coles Review, the Rizzo Review, and the Mortimer Review;
- coverage of analysis conducted by the Australian Strategic Policy Institute;
- discussion on the results of the ANAO's reports, including Report No.30 2014–15 *Materiel Sustainment Agreements* and the current and potential audits applicable to materiel sustainment included in the ANAO's *2015 Audit Work Program*;
- coverage of observations from the ANAO's reviews of major Defence equipment acquisition projects (ANAO Report No.14 2014–15 *2013–14 Major Projects Report* (Major Projects Report)), including the transition and management of projects over time, from acquisition to sustainment; and
- examination of international practices in the area of sustainment reporting and analysis.

An ongoing body of work on sustainment, akin to the Major Projects Report, is a significant resource undertaking. We will endeavour to accommodate Committee requests and if necessary, seek further resourcing for any significant requirements. In the interim, the ANAO's *2015 Audit Work Program* includes further potential audits in this important area (discussed later in this paper).

The ANAO is available to discuss these and any other issues with the Committee at the briefing scheduled for October this year.

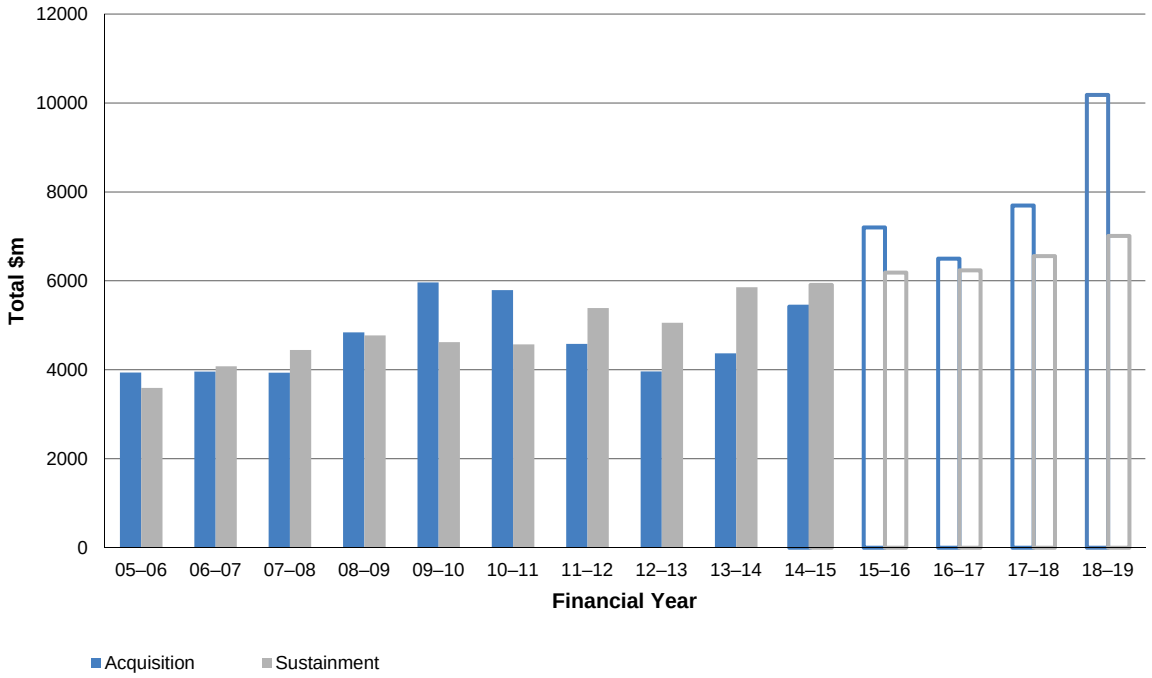
Background

Sustainment management and expenditure

Prior to 1 July 2015 the then DMO was responsible for providing support to Australian Defence Force (ADF) operations, through the acquisition and sustainment of ADF capabilities. Following the *First Principles Review: Creating One Defence* (FPR), these responsibilities transferred to Defence's Capability Acquisition and Sustainment Group (CASG). The sustainment program involves the provision of in-service support, including the repair and maintenance of equipment, engineering (including enhancements), purchasing of inventory (such as explosive ordnance, fuel, stores and spare parts), configuration management and disposal action.[1]

Figure 1 below, depicts the then DMO's acquisition and sustainment expenditure.

Figure 1: Acquisition and sustainment expenditure 2005–06 to 2018–19



Source: ANAO analysis of expenditure and forward estimates for DMO Programme 1.1, Management of Capability Acquisition, and DMO Programme 1.2, Management of Capability Sustainment, from Defence Annual Reports and the *Defence Portfolio Budget Statements 2015-16* (which did not yet reflect the FPR's changes to Defence's structure).

Note: The hollow columns represent the May 2015 Estimates figures for 2015–16 and future years. The figures for 2014–15 are based on reports provided by the DMO, which had not been published at the time of compiling this brief.

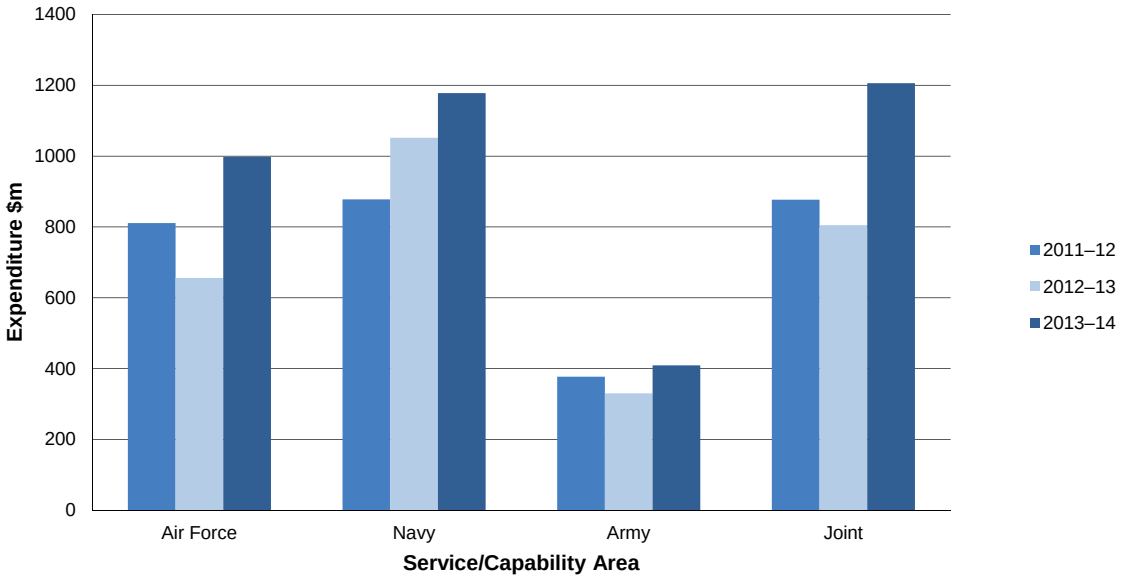
Figure 2 below, depicts expenditure information for the Top 20–30 sustainment products only[2], which is reported in the Defence Annual Reports for the 2011–12 to 2013–14 financial

1 Australian Government, *Portfolio Budget Statements 2015-16*, Budget Related Paper No.1.4A, Defence Portfolio, Defence, Canberra, May 2015, p. 188.

2 Figure 2 differs from Figure 1 in that it only reports the totals for the Top 20 sustainment products (for the 2011–12 and 2012–13 financial years) and the Top 30 sustainment products (for the 2013–14 financial year), whereas Figure 1 includes the expenditure for all sustainment products. For Figure 2, comparison between years should be treated with caution as the 2011–12 and 2012–13 data covers the Top 20 sustainment products where the 2013–14 data covers the Top 30 sustainment products, following the expansion of Defence's reporting in this area.

years, and presents this by the Service or Capability area. The figure shows that Air Force, Navy and Joint[3] sustainment expenditure are greater than that of Army, which is in part due to the cost of platforms and their maintenance when compared to Army.

Figure 2: Sustainment expenditure 2011–12 to 2013–14 by service/capability area



Source: ANAO analysis of expenditure for DMO Programme 1.2, Management of Capability Sustainment, in the Defence Annual Reports for the 2011–12 to 2013–14 financial years.

Parliamentary interest in Defence sustainment reporting

The JCPAA and other committees have continued to recommend the development of approaches to achieve improved transparency in Defence sustainment reporting, given its financial and operational significance.[4] In May 2014, the JCPAA made the following recommendation, Recommendation 4 in Report 442, *Review of the 2012–13 Defence Materiel Organisation Major Projects Report*[5]:

> The Committee recommends that the Defence Materiel Organisation prepares a suitable and separate methodology for reporting sustainment activity and expenditure, and that this methodology be reported to the Committee within six months of the tabling of this report.

Defence did not agree with this recommendation, for the reasons outlined in their formal response (see Appendix 1, at page 21).

The JCPAA subsequently requested and reviewed an ANAO Sustainment Reporting Options Paper. During this process, and noting that preparedness information is classified, Defence offered to assist the Committee by providing an in-camera briefing on sustainment matters, currently scheduled for 13 November 2015.

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3 Joint includes command, surveillance and intelligence systems, weapons, clothing, health equipment, fuels and lubricants.

4 Joint Standing Committee on Foreign Affairs, Defence and Trade, *Inquiry into the Review of the Defence Annual Report 2011–2012*, Government Response - 3(a), October 2014.

5 JCPAA, Report 442, R*eview of the 2012–13 Defence Materiel Organisation Major Projects Report*, JCPAA, Canberra, May 2014, List of recommendations, p. xiv.

Sustainment reporting and analysis

Public reporting by Defence

Defence provides reporting against sustainment elements through its Portfolio Budget Statements, Annual Reports and online. The ANAO previously provided information in the Sustainment Reporting Options Paper (replicated at Appendices 2 and 3 for ease of reference), however, the following summarises the range of material available, including:

- information on the sustainment arrangements for the Top 30 sustainment products[6], by cost, in the Portfolio Budget Statements, as well as an outline of the focus of the sustainment efforts for the budget year.[7] The deliverables for each of the Services in relation to capability performance, including Navy Unit Ready Days and Army and Air Force Rate of Effort are also explained[8];
- capability reporting by the Capability Managers, against Outcome 1 in the Defence Annual Report.[9] This includes reporting against the capability performance deliverables outlined in the Portfolio Budget Statements and separately, reporting of the management of capability sustainment by the DMO, which includes capability performance summaries[10]; and
- internet only (online) financial information for the Top 30 sustainment products in the Defence Annual Report, namely the Budget estimate; revised estimate; actual expenditure; variation between the revised estimate and actual expenditure; and an explanation of the variation.[11]

Following the re-integration of the DMO into Defence, it is unclear if the level of publicly available sustainment reporting will remain at the same level. The 2015–16 Defence Portfolio Budget Statements did not yet reflect the FPR's changes to Defence's structure.

First Principles Review: Creating One Defence

While CASG will include key responsibilities performed by the DMO, the implementation of the FPR is expected to be undertaken over the next two years.[12] While this implementation is undertaken, and decisions are being made in relation to the allocation of responsibilities, reporting mechanisms and Defence policies and procedures, it will be important to ensure current oversight and reporting processes are maintained.

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6 This represents an increase in the reporting on Top 20 sustainment products in the 2013–14 Portfolio Budget Statements. Department of Defence, DMO, *Submission No. 3 to the JCPAA*, Question on Notice No. 4 – Improvements to Reporting.

7 Australian Government, *Portfolio Budget Statements 2015–16*, Budget Related Paper No.1.4A, Defence Portfolio, Defence, Canberra, May 2015, pp. 188–202.

8 Australian Government, *Portfolio Budget Statements 2015–16*, Budget Related Paper No.1.4A, Defence Portfolio, Defence, Canberra, May 2015, pp. 36–47.

9 Outcome 1: 'The protection and advancement of Australia's national interests through the provision of military capabilities and the promotion of security and stability'. Department of Defence, *Defence Annual Report 2013–2014*, Volume 1, Chapter 3 – Defence outcomes and programs—Outcome 1, Defence, Canberra, October 2014, pp. 22–40.

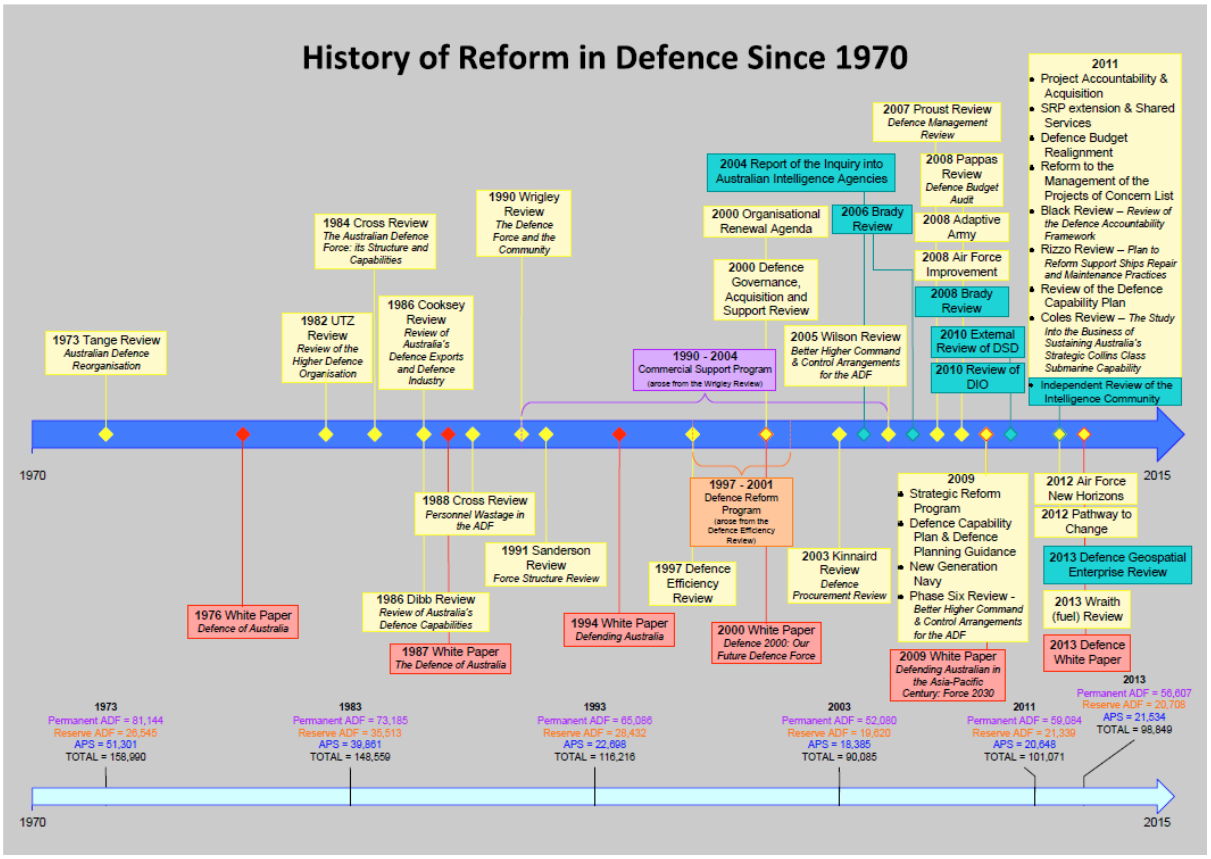
10 Department of Defence, *Defence Annual Report 2013–14*, Volume 1, Chapter 6 – Defence Materiel Organisation, Defence, Canberra, October 2014, pp. 99–106.

11 Department of Defence, *Defence Annual Report 2013–14*, *Supplementary Information for Chapter 6, Table W6.17* [Internet], Defence, Canberra, available from <http://www.defence.gov.au/annualreports/13-14/part-two/chapter-six/program-1-02.asp> [accessed 25 September 2015].

12 Department of Defence, *First Principles Review: Creating One Defence,* Defence, Canberra, April 2015, p. 72.

However, successive governments have conducted an ongoing stream of Defence reviews, or reviews targeted at specific facets of its operations. Over time, these reviews have occurred with more frequency as depicted in the FPR (see Figure 3, below).

Figure 3: A history of the ongoing and increasingly frequent reviews of Defence



Source: Department of Defence, *First Principles Review: Creating One Defence* [Internet], Defence, Canberra, April 2015, p. 72, available from <http://www.defence.gov.au/publications/reviews/firstprinciples/Docs/FirstPrinciplesReviewB.pdf> [accessed 23 September 2015].

The FPR commented on its numerous predecessors as follows:

> Since the 1973 Tange Review, there have been over 35 significant reviews and many more supplementary reviews of Defence. The sheer frequency of reviews over the past decade has meant that many were short-lived or simply overtaken by the next review. Often the recommended changes were not allowed to bed in before another review began.
>
> Despite this, Defence has implemented significant changes and improvements since the 1990s, for example, recommendations associated with the Kinnaird, Mortimer, Coles and Rizzo reviews along with the Pathway to Change initiatives. Compared to a decade ago, Defence has better governance and greater transparency. It has delivered on some difficult efficiency targets and has a more capable Australian Defence Force and Defence system generally.[13]

13 Department of Defence, *First Principles Review: Creating One Defence*, Defence, Canberra, April 2015, p. 13.

The FPR made a total of 76 recommendations, which cover four key areas:

- a stronger and more strategic centre able to provide clear direction and contestability of decision making, along with enhanced oversight of resources and monitoring of organisational performance;
- an end-to-end approach to capability development with a robust and tailored investment approval process and a new 'smart buyer' arrangement for the acquisition and sustainment of defence capability;
- improved delivery of corporate services with a focus on enterprise approaches, integration and customer-centric practice, including a new approach to estate management; and
- a planned and professional workforce with a strong performance management culture at its core.

Seventy-five of the 76 recommendations were agreed or agreed in-principle by the Government.[14]

ANAO Report No.6 2013–14 *Capability Development Reform*, considered the themes which successive reviews had presented, and noted many themes were repeated (see Appendix 4 of this paper, at pages 24–26). In relation to sustainment management, it is reasonable to expect that the issues existing in the capability development and acquisition processes, if not resolved, invariably enter the sustainment management process. For example, the underestimation of the acquisition and ongoing operating costs of new equipment, known as 'whole-of-life' costs, impacts Defence's ability to make informed capability and cost decisions. With the extended life of many of Defence's platforms, and the estimation error over this period, sustainment management and predictability for planning purposes becomes more difficult over the platform's life span, which tends to cast some doubt on the forecasts shown in Figure 1.

In particular, in ANAO Report No.52 2013–14 *Multi-Role Helicopter Program* it was noted that: 'The history of the MRH90 Program shows that when these crucial stages of program development are not appropriately performed, then there are likely to be serious and potentially long-term consequences for capability delivery and Commonwealth expenditure'.[15]

Study into the Business of Sustaining Australia's Strategic Collins Class Submarine Capability (Coles Review, November 2012)

The Coles Review commenced in August 2011 and actions in response are ongoing, a timeframe which reflects the complexity of the management issues to be addressed. In December 2011, during Phase 1, the issues were summarised as shown in Table 1, below.

14 The then Minister for Defence, the Hon. Kevin Andrews, *First Principles Review of Defence* [Internet], Canberra, 1 April 2015, available from <www.minister.defence.gov.au/2015/04/01/first-principles-review-of-defence/> [accessed 22 September 2015].

15 ANAO Report No.52 2013–14 *Multi-Role Helicopter Program*, p. 22.

Table 1: Summary of the issues identified in the Coles Review

Issue
Poor submarine availability caused by a crew shortfall, lack of spares and unreliable equipment
A lack of cohesion in strategic leadership
Department of Finance and Deregulation, the DMO, Navy and Industry not working collectively as an "Enterprise"
A lack of clarity around accountability, authority and responsibility
Submarine knowledge thinly spread
Lack of robustness of Navy's contribution to manning and sustainment
No long term strategic plan for efficient use of assets
DMO seeking direct involvement at the tactical level
A performance-based ethos not being embedded in ASC [Pty Ltd]
No long term strategic plan for efficient asset utilisation
Unclear requirement and unrealistic goals

Source: The then Minister for Defence, the Hon. Stephen Smith, *Submarine Sustainment Review Phase 1 Report* [Internet], Canberra, 13 December 2011, available from <http://www.minister.defence.gov.au/2011/12/13/minister-for-defence-and-minister-for-defence-materiel-submarine-sustainment-review-phase-1-report/> [accessed 18 September 2015].

The review, which focussed strongly on sustainment matters, was released in November 2012 and provided 25 recommendations substantially based on the summary issues noted above. The recommendations were well received by government, which stated that: 'the implementation of these recommendations are expected to deliver a consistently higher level of availability for the Collins'.[16]

The March 2014 progress review found that, while many recommendations had yet to be fully implemented, in terms of tangible impacts on the Collins Class to availability, there had been positive changes:

> In summary, I have seen a lot to be admired in what is a remarkable transformation. Much has been achieved in a very short time, leading to improved availability which is on track to reach the International Benchmark in FY17. Ensuring personnel with the required skill sets in the breadth and depth necessary for Defence to discharge its more limited but essential roles and responsibilities is the most likely cause for the Transformation Program to falter or even fail.[17]

Collectively, the recommendations reflect issues which are fundamentally the management issues of large complex platforms, with multiple separate organisations, without clear accountability for the overall outcomes of the sustainment program. While the observations and recommendations are made in the context of the Coles Review, it could be expected to provide broader learning applicable to sustainment management and improvement opportunities for Defence as a whole.

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16 The then Minister for Defence, the Hon. Stephen Smith, *Release of Final Report of Coles Review into Submarine Sustainment* [Internet], Canberra, 12 December 2012, available from <http://www.minister.defence.gov.au/2012/12/12/minister-for-defence-minister-for-defence-materiel-and-minister-for-finance-and-deregulation-joint-media-release-release-of-final-report-of-coles-review-into-submarine-sustainment/> [accessed 22 September 2015].

17 Coles, John, *Study into the business of sustaining Australia's strategic Collins class submarine capability: progress review* [Internet], Defence, Canberra, March 2014, p. ii, available from <http://www.defence.gov.au/casg/Multimedia/Coles_Progress_Review_March2014-9-5124.pdf> [accessed 18 September 2015].

Plan to Reform Support Ship Repair and Management Practices (Rizzo Review, July 2011)

The two excerpts from the Rizzo Review, below, present a summary of the report's findings:

1. The inadequate maintenance and sustainment practices have many causal factors. They include poor whole-of-life asset management, organisational complexity and blurred accountabilities, inadequate risk management, poor compliance and assurance, a 'hollowed out' Navy engineering function, resource shortages in the System Program Office in DMO, and a culture that places the short-term operational mission above the need for technical integrity. In addition, Navy and DMO need to improve coordination and integrate their interdependent activities more effectively. Whilst the overall outcome is a poor reflection on Defence and DMO, actions by individuals were taken, in the main, to meet the operational demands of the day with inadequate resources and tools.[18]
2. The need for the sustainment of assets is understood in Defence and DMO, but it is not given the same rigorous attention as asset acquisition. Sustainment costs can exceed those of the original procurement and the challenges can be more complex.[19]

Overall the Rizzo Review made 24 recommendations, but considered that there were seven which were strategic due to their scope, impact and longevity, as outlined in Table 2, below.

Table 2: Seven strategic recommendations from the Rizzo Review

Number	Strategic recommendation
1	Formalise asset and sustainment methodologies
2	Take whole-of-life decisions
3	Establish closer working arrangements between Defence and DMO
4	Establish an integrated risk management system
5	Rebuild Navy engineering capability
6	Reinstate the cultural importance of technical integrity
7	Confirm Defence Capability Plan (Maritime) Resourcing

Source: Rizzo, Paul J, *Plan to Reform Support Ship Repair and Management Practices* [Internet], Defence, Canberra, July 2011, pp. 7–8, available from <http://www.defence.gov.au/publications/Reviews/Rizzo/Review.pdf> [accessed 22 September 2015].

All 24 recommendations were accepted by government, with the government acknowledging that 'the Rizzo Report has identified a clear need for change'.[20]

Going to the next level: the report of the Defence Procurement and Sustainment Review (Mortimer Review, September 2008)

As summarised by Defence, the Mortimer Review[21] made 46 recommendations and covered five principal areas, as shown in Table 3, below.

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18 Rizzo, Paul J, *Plan to Reform Support Ship Repair and Management Practices* [Internet], Defence, Canberra, July 2011, p. 7, available from <http://www.defence.gov.au/publications/Reviews/Rizzo/Review.pdf> [accessed 22 September 2015].

19 Rizzo, Paul J, *Plan to Reform Support Ship Repair and Management Practices* [Internet], Defence, Canberra, July 2011, p. 8, available from <http://www.defence.gov.au/publications/Reviews/Rizzo/Review.pdf> [accessed 22 September 2015].

20 The then Minister for Defence, the Hon. Stephen Smith, *Release of Plan to Reform Support Ship Repair and Management Practices* [Internet], Canberra, 18 July 2011, available from <http://www.minister.defence.gov.au/2011/07/18/minister-for-defence-and-minister-for-defence-materiel-release-of-plan-to-reform-support-ship-repair-and-management-practices/> [accessed 22 September 2015].

Table 3: Five principal areas covered by the Mortimer Review recommendations

Number	Strategic recommendation
1	The need for new capability systems or upgrades to be initiated on the basis of a long-term defence strategy. High quality strategic and capability advice must be provided to Government to enable it to set strategy and prioritise needs.
2	The need to improve the effectiveness of the process which transforms Government-endorsed capability projects into costed, defined solutions which are presented to Government for approval.
3	The need to continue to improve the military equipment acquisition process.
4	The need to improve the sustainment requirements definition and management.
5	The need to drive cultural change in the DMO to ensure it is best able to deliver the outcomes required by its customers in Defence.

Source: Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review* [Internet], Defence, Canberra, September 2008, available from <http://www.defence.gov.au/dmo/AboutCASG/CurrentReviews/MortimerReview/> [accessed 22 September 2015].

The response from the Government was DMO focussed, given that the DMO was the actioning agency at the time, however, some of the recommendations from the review have been overtaken by time and the outcomes of the later FPR.

The Government agreed to 42 of the Mortimer Review recommendations in full, and to three recommendations in part, but disagreed with one recommendation.[22]

Australian Strategic Policy Institute

The Australian Strategic Policy Institute (ASPI) publishes papers on the business of the Australian Defence Organisation. ASPI describes itself (in part) as follows:

> ASPI is an independent, non-partisan think tank that produces expert and timely advice for Australia's strategic and defence leaders. ASPI generates new ideas for government, allowing them to make better-informed decisions for Australia's future. ASPI is one of the most authoritative and widely quoted contributors to public discussion of strategic policy issues in Australia and a recognised and authoritative Australian voice in international discussion of strategic issues, especially in the Asia-Pacific.[23]

ASPI was established by the Australian Government in 2001, and is partially funded by Defence, and supplements that income with activities related to its subject matter expertise.

To assist the Committee, the ANAO provides the following references.

The Cost of Defence: ASPI Defence Budget Brief 2015–2016 (May 2015)[24]: Annually, ASPI examines the context of Defence spending. The comprehensive report covers a range of

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21 Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review* [Internet], Defence, Canberra, September 2008, available from <http://www.defence.gov.au/dmo/AboutCASG/CurrentReviews/MortimerReview/> [accessed 22 September 2015]. This reference also provides access to the Government response.

22 The then Minister for Defence, the Hon. Joel Fitzgibbon, *The Government's Response to the Mortimer Review* [Internet], 2 May 2009, available from <http://www.defence.gov.au/whitepaper/2009/mr/81_thegovernmentsresponsemortimerreview.pdf> [accessed 1 October 2015].

23 Australian Strategic Policy Institute (ASPI), *About ASPI* [Internet], available from <https://www.aspi.org.au/about-aspi> [accessed 1 October 2015].

24 Australian Strategic Policy Institute (ASPI), *The Cost of Defence: ASPI Defence Budget Brief 2015–2016* [Internet], ASPI, Canberra, May 2015, available from <https://www.aspi.org.au/publications/the-cost-of-defence-aspi-defence-budget-brief-20152016/ASPI-Cost-of-Defence-2015.pdf> [accessed 23 September 2015].

issues including a breakdown of Top 30 sustainment products and major platform sustainment expenditures, (commencing at page 115). ASPI also comments on Collins through-life support, which ASPI considers to be expensive, (discussion commences at page 194).

Graph of the week: a short history of over-programming in defence acquisition (December 2013)[25]: This short article examines the implications of over programming in the previous Defence Capability Plan and makes linkages to schedule performance to explain the practice. While not mentioned in this paper, there may also be linkages between acquisition over-programming and the consequent cost patterns of sustainment; the ANAO observed in Report No.30 2014–15 *Materiel Sustainment Agreements* (see below) that there were frequent transfers of sustainment funding to areas of greater demand. It is not clear whether this process reflects over-programming in sustainment, similar to acquisition, and a consequent 'sustainment debt' that must be paid at some point. An example of sustainment debt was the 'logistics shortfall' for the ANZAC fleet, which required allocation of $1 billion in additional sustainment funding in 2008–09.[26]

Strategy, agenda for change – strategic choices for the next government (August 2013)[27]: This paper raises contemporary questions for sustainment budgeting. In particular, it considers, amongst a broad range of issues, the relationship between acquisition and sustainment, and the sufficiency of the sustainment budget.

25 Australian Strategic Policy Institute (ASPI), *Graph of the week: a short history of over-programming in defence acquisition* [Internet], ASPI, Canberra, December 2013, available from <http://www.aspistrategist.org.au/graph-of-the-week-a-short-history-of-over-programming-in-defence-acquisition/> [accessed 23 September 2015].

26 ANAO Report No.30 2014–15, *Materiel Sustainment Agreements*, p. 88.

27 Australian Strategic Policy Institute (ASPI), *Agenda for change: strategic choices for the next government* [Internet], ASPI, Canberra, August 2013, available from <https://www.aspi.org.au/publications/agenda-for-change-strategic-choices-for-the-next-government> [accessed 23 September 2015].

ANAO Audits and Reviews

Following the Sustainment Reporting Options Paper provided to the Committee earlier this year, the ANAO published Report No.30 2014–15 *Materiel Sustainment Agreements* (MSAs)[28], on 21 April 2015. A synopsis of the report, its recommendations and entity responses, (previously provided to the Committee), are included below for ease of reference.

ANAO Report No.30 2014–15 *Materiel Sustainment Agreements*

Background: In 2014–15, Defence budgeted over $7.1 billion, or some 20 per cent of total Defence resourcing, for the sustainment of specialist military equipment operated by the Australian Defence Force. Defence sustainment involves the provision of in-service support, including repair and maintenance, engineering, supplies, configuration management and disposal action. The majority of Defence sustainment services are provided either directly or indirectly through the DMO, which applies some 50 per cent of its budget to sustainment. Defence has been using MSAs since 2005 to formalise its requirements for sustainment services from the DMO, with the aim of facilitating effective and business-like relationships within the Defence Organisation. MSAs are contract-like arrangements that set out the level of performance and support required by Defence from the DMO, within an agreed price, as well as the Key Performance Indicators (KPIs) by which service delivery will be measured.

The DMO's sustainment budget of $6.185 billion for 2014–15 includes some $5.683 billion that is to be expended through seven MSAs incorporating 116 Product Schedules. The main MSAs are those between the DMO and each of the three Services. For 2014–15, the Chief of Navy MSA includes 36 Product Schedules valued at $1.976 billion; the Chief of Air Force MSA comprises 28 Product Schedules valued at $1.976 billion; and the Chief of Army MSA includes 45 Product Schedules valued at $1.504 billion.

Audit Objective: To examine Defence's administration of MSAs and the contribution made by MSAs to the effective sustainment of specialist military equipment.

Summary of Conclusion: Over the past decade, Defence and the DMO have established and continued to refine a generally sound MSA framework to facilitate the management of sustainment activity for specialist military equipment. The framework has enabled the Defence Organisation to clearly identify roles and responsibilities at a functional level, and individual MSAs document funding, deliverables, risks and performance measures for each sustainment product. Further, the development and maintenance of the MSA framework has encouraged and facilitated collaboration between Defence and the DMO at both the management and operational levels.

The MSA framework has evolved over time, in light of practical experience and the risk appetite of the parties to individual agreements, and there is an ongoing role for Defence senior leadership to shape the direction of the framework so as to realise its full potential. More generally, there remains scope for Defence to enhance its sustainment management through the implementation, use and refinement of newly developed performance measures.

28 All tabled ANAO audits are available from <http://www.anao.gov.au>.

Key Findings:

- The MSA process was revised in 2012–13 to replace a bureaucratic and inflexible process with streamlined arrangements, and MSAs were generally revised in accordance with the new procedure in a timely manner.
- Management reviews of the case study MSA Product Schedules examined by the ANAO were effective in focusing the attention of management on capability planning and changes, and related changes in funding.
- Army and Air Force implementation of the revised process for updating MSAs has been relatively smooth, but there is scope to review the change management process for Navy Product Schedules and their level of detail.
- In the case study MSA Product Schedules, Defence senior leadership was kept up-to-date about the risks to the relevant capabilities, and risk mitigation strategies were generally in place.
- Although the Portfolio Budget Statements suggest that a relatively clear-cut distinction exists between acquisition and sustainment activities and funding, experience indicates that the distinction is not hard and fast in practice, and the ANAO noted a number of instances of overlap in the use of acquisition and sustainment funding.
- The number of funding transfers between sustainment products increased from seven in 2011–12 to 55 in 2013–14, and the total value of these transfers across financial years increased from $170 million to $1.1 billion. Capability Managers informed the ANAO that they valued the ability to flexibly use sustainment resources according to operational and maintenance needs.
- There have been persistent inaccuracies in Defence's sustainment cost estimates, including many variances of over 25 per cent from the original budget cost estimates. The variances highlight scope for the DMO to strengthen cost estimation techniques and understanding of cost variances.
- In 2013–14, Navy and Army developed revised sustainment performance measures, and these will be reported through a newly-developed DMO reporting system. However, the first stage of the rollout of the DMO's new reporting system has been delayed from November 2014 until May 2015, and the measures need to be tested and refined. No update on this was available at the time of preparing this report.
- Defence's sustainment reporting provides stakeholders with a basic summary of sustainment activity and costs, but does not facilitate assessment of performance in terms of materiel availability, cost-effectiveness and key inputs. Defence still has some way to go before it meets the intent of recent parliamentary recommendations for enhanced public reporting of its sustainment performance.

Recommendations: To build on the progress made to date through MSAs, the ANAO has made two recommendations focusing on: the review of change management processes for Navy Product Schedules and their level of detail, to support more flexible management of MSAs and avoid undocumented workarounds in their administration; and clarifying the internal treatment of acquisition and sustainment funding.

Summary of Defence's response: Defence is committed to the review of procedures around Materiel Sustainment Agreements and the internal treatment of acquisition and sustainment funding as noted in the recommendations. After the outcomes are known from the FPR, Defence will be better positioned to meet the intent of, and implement, the recommendations from the report.

Recommendations and entity responses

Recommendation 1:

The ANAO recommends that Navy and the DMO review change management processes for Navy Product Schedules, and the level of detail in the Schedules, to support more flexible management of the Navy Materiel Sustainment Agreement.

Department of Defence response – *Agreed*.

Recommendation 2:

To clarify the internal treatment of acquisition and sustainment funding, the ANAO recommends that Defence review relevant business rules and guidance.

Department of Defence response – *Agreed*.

ANAO Report No.22 2013–14 *Air Warfare Destroyer Program*

While the audit focussed on acquisition, it is worthy to note as the future sustainment requirements of the Air Warfare Destroyer (AWD) will be significant, it is likely that Defence will be well advanced in applying the necessary management rigour to its establishment. The importance of the AWD program is heightened due to the ageing Adelaide Class Frigates reaching the end of their service life, with two already decommissioned. The report observed:

> As the RAN is the 'parent navy' of the Hobart-class DDG, it is required to invest in and manage a cost-effective Support System. This Support System includes: engineering services, configuration control, supply support, training, intellectual property, and the industrial capacity to undertake repairs, upgrades and maintenance. Defence has sought to mitigate risks by commencing the development of the Hobart-class DDG Support System early in the AWD Program's build phase. Progress is being monitored by the RAN, including by the one-star and three-star Program Management Stakeholder Groups. While these are positive developments, the sustainment phase of the DDGs' lifecycle is not expected to begin until 2016, and it is too early to assess the adequacy of the Support System arrangements.

The report made three recommendations aimed at reinvigorating the AWD Alliance's Principals Council, reducing the risk of detailed design errors, and improving the development and monitoring of productivity metrics. All three recommendations were agreed to by Defence.

ANAO Report No.6 2012–13 *Management of Australian Air Combat Capability – F-35A Joint Strike Fighter Acquisition*

Like the AWD audit above, the acquisition of the Joint Strike Fighter represents a significant investment in Australia's future Defence capability. However, its sustainment will depend upon a global sustainment network.

When the ANAO conducted the performance audit in 2012–13, the sustainment organisation for the Joint Strike Fighter was developing as highlighted in this extract:

> Australia has defined the minimum F-35 sustainment activities that must be performed locally, based on sovereign needs and performance requirements. Australian F-35 sustainment planning was influenced by the intent to keep the RAAF workforce constant between the F/A-18A/B and F-35 fleets, and to ensure that, once the aircraft have arrived in Australia, all Australian aircraft maintenance and pilot training occurs in Australia. The ANAO was informed that the range of in-country contracted support needs has been supplied by the NACC IPT to both Lockheed Martin and the JSF Program Office, to determine the business and contracting approach to Australian sustainment, and so that Autonomic Logistics Global Sustainment arrangements and local delivery can be integrated. The ANAO was further informed that Lockheed Martin has agreed to be the Australian Sustainment Integrator for global and local supplies, with local delivery potentially being delivered by a direct contract.
>
> …At the time of the audit, overall sustainment costs were not tender quality due to the early stage of the program, and will not achieve high confidence until JSF system maturity is achieved around 2018…[29]

On 10 February 2015, the then Minister for Defence announced that Australia would become a regional support hub for the aircraft and that 'the assignment of regional maintenance, repair, overhaul and upgrade responsibility to BAE [Systems Australia] and TAE will enable them to demonstrate the capability and capacity of Australian industry to support this leading edge capability'.[30]

The audit report did not include any formal recommendations noting, 'in the context of the JSF Program where there are many dependencies not under Australia's control, the approach adopted to-date by Australian Governments and the Defence Organisation has provided appropriate insight into the program, in support of informed decision-making, commensurate with the cost and complexity of the planned acquisition'.[31] However, the report highlighted that 'the successful coordination of this highly complex and costly procurement with the effective sustainment of the ageing F/A-18A/B fleet and the planned transition to an F-35-based air combat capability in the required timeframe, so that a capability gap does not arise between the withdrawal from service of the F/A-18A/B fleet and the achievement of full operational capability for the F-35, remains challenging'.[32]

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29 ANAO Report No.6 2012–13 *Management of Australian Air Combat Capability – F-35A Joint Strike Fighter Acquisition*, pp. 134–135.

30 The then Minister for Defence, the Hon. Kevin Andrews, *Joint Strike Fighter regional support in Australia* [Internet], Canberra, 10 February 2015, available from <http://www.minister.defence.gov.au/2015/02/10/minister-for-defence-joint-strike-fighter-regional-support-in-australia/> [accessed 23 September 2015].

31 ANAO Report No.6 2012–13 *Management of Australian Air Combat Capability – F-35A Joint Strike Fighter Acquisition*, paragraph 47, p. 30.

32 ANAO Report No.6 2012–13 *Management of Australian Air Combat Capability – F-35A Joint Strike Fighter Acquisition*, paragraph 48, pp. 30–31.

ANAO Report No.24 2009–10 *Procurement of Explosive Ordnance for the Australian Defence Force*

This report examined the important area of explosive ordnance[33], and through the issues raised demonstrated the criticality of sustainment in explosive ordnance management. Inventory serviceability is an area requiring ongoing attention. At 30 June 2009, Defence's total stock holdings of explosive ordnance inventory were valued at $2.9 billion with some 46 per cent of the value of the explosive ordnance inventory categorised as other than 'serviceable' by the DMO. While not directly comparable with the figures contained in the 2005–06 audit report, due to differences in methodology, they do indicate that this is a significant ongoing issue requiring resolution. Table 4, below, shows the composition of the explosive ordnance inventory as at 30 June 2009.

Table 4: Explosive ordnance stock availability at 30 June 2009

DMO Serviceability Category	Value at 30 June 2009 ($ millions)	Proportion of total explosive ordnance inventory holdings at 30 June 2009
Beyond repair	124.2	4%
Potential serviceable[A]	1 204.0	42%
Sub total – other than 'serviceable'	***1 328.2***	***46%***
Serviceable	1 572.8	54%
Total Explosive Ordnance Inventory	**2 901.0**	**100%**

Note:

[A] Potentially serviceable includes items identified by the DMO as:

'Repairable' – item is identified as repairable; 'Serviceable contingent' – items that have a contingency certification and can be used in a limited fashion only; 'Life expired' – item is life expired at the time the report is run; 'Pending action' – item falls into one of two categories: 'pending contractor action' where item is pending inspection or 'pending Explosive Ordnance Division action' where Explosive Ordnance Division is to approve sentence or provide technical data on the item; and 'Other' – includes items which do not fall into any of the above categories.

Source: ANAO Report No.24 2009–10 *Procurement of Explosive Ordnance for the Australian Defence Force*, Table 4.4, p. 130.

While there are no audits of explosive ordnance sustainment in the ANAO's *2015 Audit Work Program*, the ANAO will consider a future audit in this area of sustainment.

Audits underway and potential audits

The ANAO is presently undertaking a performance audit into the ARH Tiger Helicopters project. One of the key focus areas of the audit will be the sustainment of the ARH Tiger Helicopter fleet. This performance audit is expected to be tabled in 2016.

The MPR team is working closely with the Performance Audit Services Group of the ANAO and the team undertaking the audit. The ARH Tiger Helicopters project has been used as a case study, based on previously published information, in Appendix 5, at page 27, for the

33 Recognising the importance of the management of explosives in the sustainment context the ANAO has conducted a number of audits which address explosive ordnance matters:

- ANAO Report No.30 2002–03 *Defence Ordnance safety and suitability for service.*
- ANAO Report No.24 2009–10 *Procurement of Explosive Ordnance for the Australian Defence Force.*
- ANAO Report No.37 2010–11 *Management of the Explosive Ordnance Services Contract.*
- ANAO Report No.14 2013–14 *Explosive Ordnance and Weapons Security Incident Reporting.*

Committee's consideration to provide context to some of the sustainment matters raised throughout this document.

In addition, the ANAO's *2015 Audit Work Program*[34] includes the potential performance audits 'Sustainment of Defence Materiel' and 'Reforming Sustainment of the Collins-class Submarine Fleet' outlined below.

Sustainment of Defence Materiel

Defence undertakes the sustainment of specific platforms (such as a ship or aircraft fleet), commodities (such as clothing or combat rations) and services (such as the provision of maritime target ranges). Sustainment involves the provision of in-service support, including repairs and maintenance, engineering, supplies, configuration management and disposal action. The Top 30 sustainment products by expenditure accounted for some $3.8 billion in spending in 2013–14. Effective sustainment of these products is critical to maintain the preparedness of the ADF and enable the conduct of Defence operations.

An audit would examine Defence's management of sustainment for one or more platforms or services from the top 30 by expenditure, including risk management, scheduling and performance against key performance indicators.

Reforming Sustainment of the Collins-class Submarine Fleet

The Royal Australian Navy has six Collins-class submarines that entered service between 1996 and 2004. The submarine force is funded to conduct multiple roles, including maritime strike and interdiction, maritime surveillance, reconnaissance and intelligence collection, undersea warfare, and special forces operations. The 2000 Defence White Paper included a plan to bring all six submarines to an improved capability, to meet current and future requirements, by the end of 2008. In April 2007, Defence advised the ANAO that the achievement of the planned improvement to capability was unlikely to occur before 2012 because of the need to align implementation with the submarines' full-cycle docking (maintenance) schedule. In June 2012, DMO and ASC Pty Ltd entered into a new five-year rolling Collins-class sustainment contract. The aim is to deliver more efficient and effective sustainment services that improve the availability and reliability of the Collins submarine fleet. The estimated cost to sustain the Collins-class submarines for 2015–16 is $521 million.

An audit would examine the effectiveness of the reformed sustainment arrangements for the Collins-class submarine fleet in delivering both improved value for money and better availability and reliability.

Observations from the Major Projects Report

While the MPR focusses on acquisition, the transition to sustainment occurs through part of the project acquisition process, as depicted in Appendix 6, at page 29. Issues which are observable through the MPR and that have relevance to the consideration of materiel sustainment include:

- Military-Off-the-Shelf (MOTS) equipment, with a robust in-service track record, provide for more accurate assessment of future sustainment costs and supply chain stability;

34 The ANAO's *2015 Audit Work Program* is available from <http://www.anao.gov.au>.

- supply chains can be complex (as noted above in relation to the JSF). For example, the MPR reviews two United States (US) helicopter procurements (Additional Chinook, MH-60R Seahawk) and two European procurements (MRH90 Helicopters, ARH Tiger Helicopters). While these are very different aircraft, the MOTS acquisitions have been less problematic throughout acquisition, with fewer supply chain issues being noted;
- 'Interoperability', which is often considered in terms of the ADF's capability to integrate with other military services, provides additional sustainment options;
- operational requirements reduce platform maintenance availability, extending planned completion schedules and increasing sustainment costs, given the time value of money and risks to further degradation to platforms;
- procurement is generally a planned process, whereas sustainment is responsive to original equipment issues (failure rates), Rate of Effort (use), battle damage, and spares availability; and
- both the ARH Tiger Helicopters and Collins Replacement Combat System projects are currently transitioning into sustainment, raising new issues from the MPR perspective, including the decentralised and less mature management processes.

Transition between acquisition and sustainment

The JCPAA has previously sought clarification of the boundaries between acquisition and sustainment, as highlighted in the JCPAA's Report 448 *Review of the 2013–14 Defence Materiel Organisation Major Projects Report* 'for different projects, 'sustainment' may mean different things and while drawing a line between 'acquisition' and 'sustainment' might be clear for one project, that line might be quite blurry for another'[35]. The DMO previously provided the JCPAA with a diagram which captures the capability systems lifecycle, and in particular notes the transition that occurs from acquisition to sustainment, see Appendix 6, at page 29.

On 20 March 2014, the DMO provided advice to the JCPAA addressing the transition of a project from acquisition to sustainment, a partial reproduction of which is below:

> There is a period when the acquired capability transitions into sustainment. This normally occurs when the Capability Manager declares Initial Operational Capability (IOC) meaning that the capability is sufficiently mature that it can be operationally deployed. Capability that can be operationally deployed is then managed through sustainment. Acquisition of the remaining materiel is managed through the project until completion of Final Materiel Release. The period between IOC and Final Operational Capability is commonly referred to as the transition period. The Major Projects Report (MPR) effectively provides transparency of the funding and expenditure for acquisition elements, which is managed separately from sustainment. Additional reporting on sustainment products is now provided through the Defence Annual Report.[36]

35 JCPAA, Report 448, *Review of the 2013–14 Defence Materiel Organisation Major Projects Report*, JCPAA, Canberra, May 2015, pp. 29–30.

36 DMO, *Submission to the JCPAA Review of Major Projects Report 2012–13*, Question on Notice No. 5 – Effective Reporting, 20 March 2014.

International sustainment reporting and analysis

ANAO Report No.30 2014–15 *Materiel Sustainment Agreements* considered the international experience in budgeting and reporting on sustainment expenditure. This information is outlined below.

National Audit Office (United Kingdom)

The National Audit Office (NAO) reports on public spending for the British Parliament. Similar to the ANAO, the NAO publishes independent audit reports that assess the efficiency and effectiveness of public sector performance. The following references are NAO reports that are related to the sustainment of capabilities in the Ministry of Defence.

HC 941-I Session 2014-15 Major Projects Report 2014 and the Equipment Plan 2014 to 2024, January 2015

This report is similar to the ANAO's MPR. The report contains an example of a sustainment program—the Warrior Capability Sustainment Programme—being assessed and reported on in the same style as acquisition projects. The report also includes the Attack Helicopter Capability Sustainment Programme as a 'concept phase project'.[37]

HC 755 Session 2010-2011 Management of the Typhoon Project, March 2011

One of the major findings in this report is that operating the Eurofighter Typhoon 'within the support cost budget will be challenging'.[38] The NAO assesses 'how effectively the Department is managing the Typhoon project to achieve full cost and operational value from its continuing investment.'[39]

Congressional Budget Office (United States)

Preserving the Navy's forward presence with a smaller fleet[40]

This report considers the US Navy's fleet size and forward operations against the annual ship-building budget through an analysis of different approaches to the time spent in deployment, maintenance, training and sustainment[41] of the fleet.

An analysis of the Navy's fiscal year 2015 shipbuilding plan[42]

This report discusses the ability of the US Navy to meet its inventory goal[43] by producing new ships or extending the service life of existing ships where it is cost-beneficial to do so.

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37 National Audit Office, *Major Projects Report 2014 and the Equipment Plan 2014 to 2024* [Internet], NAO, UK, 13 January 2015, available from <http://www.nao.org.uk/wp-content/uploads/2015/01/Major-projects-report-2014-and-the-equipment-plan-2014-to-20151.pdf> [accessed 1 October 2015].

38 National Audit Office, *Management of the Typhoon Project* [Internet], NAO, UK, 2 March 2011, p. 8, available from <http://www.nao.org.uk/wp-content/uploads/2011/03/1011755.pdf> [accessed 1 October 2015].

39 National Audit Office, *Management of the Typhoon Project* [Internet], NAO, UK, 2 March 2011, p. 4, available from <http://www.nao.org.uk/wp-content/uploads/2011/03/1011755.pdf> [accessed 1 October 2015].

40 Congressional Budget Office, *Preserving the Navy's Forward Presence With a Smaller Fleet* [Internet], CBO, US, March 2015, available from <https://www.cbo.gov/publication/49989> [accessed 23 September 2015].

41 The CBO reference to Sustainment is defined as 'a period in which a ship is in port but ready to deploy quickly'.

42 Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2015 Shipbuilding Plan* [Internet], CBO, US, December 2015, available from <https://www.cbo.gov/publication/49818> [accessed 23 September 2015].

43 The inventory goal of the US Navy is to have 306 battle force ships until 2019.

Growth in Department of Defense's budget from 2000 to 2014[44]

This report analyses the changes in the US Department of Defense's (DOD's) growth between 2000 and 2014. It notes that operation and maintenance costs increased by 34 per cent across the period while acquisition costs only increased by 25 per cent.

Linking the readiness of the armed forces to DOD's operation and maintenance spending[45]

This report analyses the US DOD's advised relationship between the readiness of military units to perform their missions in wartime and the operation and maintenance budget. The report identifies that the DOD has not been able to clearly represent this relationship using available data.

Government Accountability Office (United States)

The Government Accountability Office (GAO) supports the US Congress in improving performance and accountability in federal government programs. Similar to the ANAO, the GAO publishes independent reports on the performance of public sector agencies, including the US DOD. The following references are GAO reports that are related to the sustainment of capabilities in the DOD.

GAO-14-778 F-35 Sustainment: Need for Affordable Strategy, Greater Attention to Risks, and Improved Cost Estimates, September 2014

This report assesses the US DOD's plans and strategies to sustain their F-35 Lightning II fleet (Joint Strike Fighter). The GAO examined 'the extent to which DOD has (1) developed an F-35 sustainment strategy and addressed potential risks related to affordability and operational readiness and (2) developed a reliable O&S [operating and support] cost estimate for the program's life cycle.'[46]

As Australia is also acquiring the Joint Strike Fighter, this report is directly relevant to Australia's own efforts in sustaining this capability.

GAO-12-558 Defense Acquisitions: Further Action Needed to Improve DOD's Insight and Management of Long-term Maintenance Contracts, May 2012

This report examines the US DOD's maintenance/sustainment of capabilities through long-term maintenance contracts. The GAO evaluates '(1) the extent to which DOD uses long-term maintenance contracts, (2) DOD's ability to select alternative maintenance providers, and (3) how these contracts have been structured to incentivize performance and manage cost.'[47]

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44 Congressional Budget Office, *Growth in DOD's Budget from 2000 to 2014* [Internet], CBO, US, November 2014, available from <https://www.cbo.gov/publication/49764> [accessed 23 September 2015].

45 Congressional Budget Office, *Linking the Readiness of the Armed Forces to DOD's Operation and Maintenance Spending* [Internet], CBO, US, April 2011, available from <https://www.cbo.gov/publication/22105> [accessed 23 September 2015].

46 United States Government Accountability Office, *F-35 Sustainment Need for Affordable Strategy, Greater Attention to Risks, and Improved Cost Estimates* [Internet], GAO, US, September 2014, GAO Highlights, available from <http://www.gao.gov/assets/670/666042.pdf> [accessed 1 October 2015].

47 United States Government Accountability Office, *Defense Acquisitions Further Action Needed to Improve DOD's Insight and Management of Long- term Maintenance Contracts* [Internet], GAO, US, May 2012, GAO Highlights, available from <http://www.gao.gov/assets/600/591319.pdf> [accessed 1 October 2015].

GAO-09-41 Defense Logistics: Improved Analysis and Cost Data Needed to Evaluate the Cost-effectiveness of Performance Based Logistics, December 2008

This report examines whether Performance Based Logistics (PBL) have reduced support costs. The GAO evaluated 'the extent to which DOD has used business case analyses to guide decisions related to PBL arrangements and the impact PBL arrangements have had on weapon system support costs.'[48]

Director, Operational Test and Evaluation (United States)

Director, Operational Test and Evaluation, FY 2014 Annual Report, Department of Defense, United States, January 2015

The Director, Operational Test and Evaluation (OT&E) is the senior advisor to the Secretary of Defense on OT&E in the US DOD. The DOT&E Annual Report is a major publication publicly available, which summarises the DOD's OT&E activities during the preceding financial year. Platforms tested as part of the DOT&E's program in this report include the following 2014–15 MPR Projects: Joint Strike Fighter (pp. 39–72), Growler (pp. 179–180), MH-60R Seahawk (pp. 209–210), and Poseidon (pp. 231–234).[49]

While the report does not have a sustainment focus, sustainment is viewed holistically as part of the platform lifecycle. Issues such as operational readiness are examined in the context of the platform's viability to perform its mission. For example, the Joint Strike Fighter DOT&E report provides information on the fleet availability (the percentage of time individual aircraft are in an 'available' status), fleet reliability (the average time an aircraft can fly prior to replacement due to failure, need for maintenance, or other) and fleet maintainability (time spent on aircraft maintenance). Equivalent OT&E reports are not publicly available from the Australian Department of Defence. There is no Australian equivalent to the DOT&E Annual report.

48 United States Government Accountability Office, *Defense Logistics Improved Analysis and Cost Data Needed to Evaluate the Cost- effectiveness of Performance Based Logistics* [Internet], GAO, US, December 2008, GAO Highlights, available from <http://www.gao.gov/assets/290/284583.pdf> [accessed 1 October 2015].

49 Director, Operational Test and Evaluation, *FY 2014 Annual Report* [Internet], DOT&E, US, January 2015, available from <http://www.dote.osd.mil/pub/reports/FY2014/pdf/other/2014DOTEAnnualReport.pdf> [accessed 1 October 2015].

Appendix 1: Defence response to the JCPAA—Sustainment reporting

Department of Defence, *Government Response to Report 442*, 4 December 2014, Recommendation No.4, paragraph 3.75, pp. 4–5.

The Committee recommends that the Defence Materiel Organisation prepares a suitable and separate methodology for reporting sustainment activity and expenditure, and that this methodology be reported to the Committee within six months of the tabling of this report.

Response: Disagree

The Vice Chief of Defence Force advises in relation to this recommendation that Defence's position is that the current arrangements of Portfolio Budget Statements (PBS) and Defence Annual Report reporting to Parliament, and Preparedness reporting to Government, balance effectively the obligation to allow Parliamentary scrutiny of the expenditure of Commonwealth funds on sustainment efforts, while protecting the classified information on capability readiness and availability which is associated with those sustainment efforts and which is separately provided to Government.

Assessments around the readiness and availability of major Defence capabilities are by necessity classified. In addition to the DMO reporting, the managers of major Defence capabilities (Service Chiefs and certain Group Heads) also provide broad capability targets in the PBS and their achievement against these targets in the Defence Annual Report. However the level of information in the PBS and Defence Annual Report is constrained to that which is publicly releasable. This publicly releasable reporting to Parliament complements the classified assessment and reporting which is provided to Government.

Each quarter a Defence Preparedness Assessment (DPAS) is undertaken, the report from which is considered by the Chief of Defence Force and the Secretary at their Strategic Command Group. This assessment considers any constraints or risks associated with the concurrent demands of undertaking current operations and being prepared to meet future operations or commitments as required by Government. Issues of sustainment are key inputs in the assessment process. The DPAS has a two year outlook and is informed by a Quarterly Strategic Review which considers likely developments in Australia's security situation and possible military responses that might be directed by Government. The outcomes and key judgements from this assessment process are provided to the Minister as the classified Preparedness and Concurrency Ministerial Submission. This process has been refined considerably over the last four years, and provides a high level of assurance to Government as to the capability of Defence to meet current commitments and conduct future operations.

Appendix 2: Defence Annual Report—Sustainment elements

The following elements are reported in the *Defence Annual Report 2013–14*. This list is primarily populated from Program 1.2 'Management of Capability Sustainment'. The elements below may not be comprehensive, and, may not include sustainment reporting included in other sections of the Defence Annual Report or other forms of public accountability.

- Management unit responsibilities
- Number of units under care
- Achievements (i.e. positive significant events)
- Negative significant events (fire – Collins, Armidales)
- Platform specific information performance information
- Contractual descriptive information, financial value information mostly not disclosed
- Upgrade to systems, in some cases quite detailed, e.g. C130J
- Rate of Effort information
- Reflections on the maturity of in-service support arrangements
- Reviews of key performance and health indicators (e.g. land systems)
- Availability (e.g. Collins, Armidales)
- Additionally, Defence provides (online only) access to sustainment financial information, an extract is in Appendix 3, at page 23.

The *Defence Annual Report 2013–14* contains a number of sustainment related disclosures; these are distributed throughout the report, significantly:

- Pages 29–40 (*Program 1.2* to *Program 1.4*), capability information for Navy, Army and Air Force. Other business units are mentioned later in the report. The information presented includes deliverables and accountability information, unit ready days, flying hours per platform and reporting against key performance indicators (broader Defence focus).
- Page 91 (*Program 1.2 Management of Capability Sustainment*), financial information on appropriations and other resources (DMO focus).
- Page 99 (*Program 1.2 Management of Capability Sustainment*), substantially outlined above, this section contains a considerable amount of contextual information on sustainment performance (DMO focus).
- Volume 2 (Audited Financial Statements) also contains high level financial information, including resourcing against a combined Material Sustainment Agreement category.

Source: Department of Defence, *Defence Annual Report 2013–14*.

Appendix 3: Defence Annual Report (online)—Top 30 sustainment products

Table W6.17: Top 30 sustainment products by expenditure as forecast in the Portfolio Budget Statements 2013–14

	Budget estimate 2013-14	Revised estimate 2013-14	Actual expenditure 2013-14	Variation	Reason for significant variation in product expenditure 2013–14
	$m	$m	$m	$m	
>General Manager Joint, Systems & Air					
Aerospace Systems					
Airborne Early Warning and Control System	163	167	167	0	
F/A-18 Hornet Weapon System	158	173	179	6	Due to contract milestone delivery achieved ahead of schedule.
F/A-18F Super Hornet Weapons System	123	131	140	9	Early realisation of software requirement resulted in an overspend for 2013-14.
P-3C/AP-3C Orion Weapons System	110	113	108	-5	The variation is due to lower than anticipated engine failure rates and lower than anticipated costs in transitioning to a new engine maintenance contract.
C130J-30 Weapon System	95	100	95	-5	The underspend is a result of lower than anticipated maintenance costs due to the condition of aircraft and savings realised due to the outsourcing of the C130J Capability Enhancement Project Management to Australian Aerospace Ltd.
Lead-In Fighter Hawk 127 Weapon System	78	79	75	-4	The variation is due to efficiencies realised in deeper maintenance and a reduction in rate of effort.
KC-30A Weapon System	59	46	56	10	The overspend is a result of hail damage repairs.
C-17 Heavy Air Lift Weapons System	58	51	51	0	

Source: Department of Defence, *Defence Annual Report 2013–14*, *Supplementary Information for Chapter 6, Table W6.17* [Internet], Defence, Canberra, available from <http://www.defence.gov.au/annualreports/13-14/part-two/chapter-six/program-1-02.asp> [accessed 25 September 2015]. The 2014–15 Annual Report was not available when this paper was being drafted, but is expected to be available shortly.

Appendix 4: Defence reviews and their recent capability development themes

Table 2.1: Recurring themes in reviews of capability development in Defence

Theme	Review				
	April 2000 Defence Governance, Acquisition and Support	Aug. 2003 Kinnaird Review	Sept. 2008 Mortimer Review	April 2009 Pappas Review	Jan. 2011 Black Review
Turnover of capability development staff (*See discussion of staff turnover in Chapter 3.*)	High turnover of capability development staff prevents the development of skills and experience necessary in such a complex and specialist area.				
	✓[a]	✓[b]	✓	✓	✓
Chronic and critical shortage of skills essential to develop robust major capability proposals (*See discussion of skills in Chapter 3.*)	Cost estimation is a technical discipline and requires specialist skills. High levels of skill are critical to delivering capability and making accurate cost estimates that enable informed capability/cost decisions. CDG personnel (both cost estimators and Desk Officers—now known as 'project managers') have low average cost-estimating experience. Cost estimates must reflect whole-of-life costs.				
	✓[a]	✓	✓	✓	✓
Initial entry of a project into the DCP warrants close attention. The DCP should be realistic, affordable, prioritised and consistent with government expectations. (*See Chapter 5.*)	Underestimation of the cost of new equipment specified in the DCP and of the associated operating costs, and lack of prioritisation of DCP projects. Over-programming and over-planning, which include both including more projects in the DCP than Defence can afford, and starting more projects than required, to accommodate potential schedule slippage in projects.				
	×	✓[c]	✓[d]	✓	✓
Lack of independent scrutiny of proposals undermines quality. *(See discussion of tech-nical risk, Chapter 6, external verification of cost, Chapter 8 and independent advice from CEO DMO, Chapter 10.)*	Absence of scrutiny of capital investment proposals to assess affordability, schedule risk and commercial aspects of acquisition by staff who are organisationally independent of the proposal sponsor.[e]				
	✓	✓	✓[f]	✓	✓
Technical risk is critical and should be clearly and consistently assessed and communicated to government. (*See discussion of technical risk in Chapter 6.*)	Technical risk is a major factor to be considered in the acquisition of new defence capabilities. It is the major cause of both post-approval project slippage and cost escalation.				
	×	✓	✓	✓	✓

Theme	Review				
	April 2000 Defence Governance, Acquisition and Support	Aug. 2003 Kinnaird Review	Sept. 2008 Mortimer Review	April 2009 Pappas Review	Jan. 2011 Black Review
Acquisition decisions should be based on a comprehensive **whole-of-life cost estimate**.[g] *(See discussion of whole-of-life costs in Chapter 7.)*	Understanding whole-of-life costs is essential to effective decision-making on capability options. Inadequate attention given to managing and costing defence capabilities on a whole-of-life basis results in funding shortfalls for ongoing operating, maintenance and support costs.				
	✓	✓	✓	✓	✓
Effective **information systems that provide cost information** for major capabilities (*See discussion of costs in Chapter 7.*)	Defence systems cannot readily provide consistent, reliable or complete information of the operating cost of current capabilities. Incomplete cost information about current capabilities prevents Defence from making reliable fact-based estimates of future operating costs, and means estimates of those costs are based on general assumptions rather than reliable historical data on cost drivers.[h]				
	✓	✓	✓	✓	✓
Rigorous analysis of costs and risks associated with requirements set beyond those of **off-the-shelf** equipment[i] (*See discussion of COTS/ MOTS in Chapter 9.*)	Requirements beyond OTS equipment generate what Mortimer described as 'disproportionately large increases to the cost, schedule and risk of projects'[j] and therefore should be based on 'a rigorous cost-benefit analysis of the additional capability sought against the cost and risk of doing so'.[k] This analysis must be clearly communicated to government.[l] Each and every decision to pursue a unique Australian solution needs to be made with a full understanding of not just the benefits but also the extra cost and risk of doing so.[m]				
	✓	✓	✓	✓[n]	✓
Committees and accountability *(See discussion of accountability in Chapter 3 and Chapters 11–14, and committees in Chapter 4.)*	Too many committees with too many members; representational in nature rather than limited to those essential to provide informed advice to accountable decision-makers; features of committees result in dissipated accountability and responsibility; improved committee processes required.[o]				
	✓	✓[p]	✓	✓	✓

Source: ANAO analysis

Notes to Table 2.1:

a Finding relates to capability development and acquisition staff in the Defence organisation before the creation of DMO and CDG.

b The review recommended appointment of a three-star officer, military or civilian, full-time, responsible and accountable for managing capability definition and assessment with a defined tenure (minimum five years) to ensure a coherent, cohesive, holistic and disciplined approach.

c Kinnaird envisaged first-pass approval would precede DCP entry: 'the capability gap, options for which have received first-pass approval, would form part of the DCP'. Kinnaird Review, pp. 15 and 21.

d Mortimer noted that government approval points had evolved from those recommended in the Kinnaird Review and that 'most significantly, DCP entry is now separate and distinct from first-pass approval.' Mortimer recommended a strengthened DCP entry, which would then form the foundation of a two-pass approval process that would be tailored according to a project's complexity. Mortimer Review, pp. 11–16.

e Also discussed in Thomson, M., *Improving Defence Management*, 2007; and Davies, A., *Let's test that idea—contestability of advice in the Department of Defence*, 2010.

f Recommendation 2.10 of the review was that the CEO DMO provide government with independent expert advice on cost, schedule, risk and commercial aspects of major capital acquisitions at DCP entry, first and second-pass approval.

g The aim of whole-of-life costing is to provide decision-makers with the total cost of acquiring equipment, operating and maintaining it throughout its entire life, and then retiring and disposing of it. It includes the acquisition cost, the cost of integrating, operating, maintaining and supplying the equipment, training the operators and maintenance staff, and the cost of retiring and disposing of the equipment. Post-acquisition costs can be equal to or greater than the acquisition cost.

h Finding also in *Defence Management Review* 2007 and *Improving Defence Management*, Australian Strategic Policy Institute (ASPI), 2007.

i That is, equipment already established in-service with the armed forces of another country or Australia; sourced from an established production facility (not just a MOTS design); and has, at most, minor modifications to deliver interoperability with existing ADF and/or allied assets. ASPI, *The Cost of Defence: ASPI Defence Budget Brief 2008–09*, pp. 161–2, cited in Mortimer Review, p. 17.

j Mortimer Review, p. 18.

k Mortimer Review, p. 20.

l Kinnaird, Mortimer and Pappas recommended that a MOTS alternative be among options put to government to provide a benchmark against which all proposals could be assessed. As reported in the 2010–11 DMO Major Projects Report (pp. 160–2), generally, MOTS projects are more likely to finish on time. Australianised MOTS and developmental acquisitions are prone to underestimating technical complexity, platform unavailability and systems integration. See also *Three views of risk—Selecting and acquiring military equipment*, (ASPI 2011).

m Mortimer Review, p. 19.

n The Defence Budget Audit Report endorsed Mortimer's recommendation and added the recommendation that 'Defence should classify any modifications required to an existing platform into four categories: (i) external regulatory requirements; (ii) internal technical regulations; (iii) integration requirements; and (iv) capability enhancements. The rationale for, and the cost, benefit and risk of, each type of modification should be specified. This assessment should form part of the first-pass and second-pass documentation.' Pappas Review, p. 80.

o Also findings in *Defence Efficiency Review* 1997, *Defence Management Review* 2007, *Improving Defence Management* (ASPI) 2007, and *Plan to Reform Support Ship Repair and Management Practices* 2010, *Serving Australia, Control and Administration of the Department of Defence* (ASPI) 2011.

p Accountability for managing the definition and assessment of capability and achieving robust outcomes was found to be diffuse and overlaid by a complex system of committees. A review of Defence's committee system was one of the 12 'minor' Kinnaird recommendations.

Source: ANAO Report No.6 2013–14 *Capability Development Reform*, pp. 86–88.

Appendix 5: Case Study—ARH Tiger Helicopters

With second pass approval by government in March 1999, and as of the 2013–14 Major Projects Report, projected to be 79 months late to achieve FOC, the ARH Tiger Helicopters project has been a difficult project with many risks and issues requiring addressing throughout the acquisition stage. Government intended that the ARH Tiger Helicopters aircraft acquisition be an 'off-the-shelf' delivery of proven, operational technology, lowering the risk of schedule, cost and performance shortfalls. However, the ARH Tiger Helicopters acquisition anticipated future developments in the platform to make it MOTS, which has resulted in heightened exposure to schedule, cost and capability risks. The lack of operational experience in maintaining the capability in other defence forces also meant that original cost estimates associated with through-life support were immature, and exposed Defence to significant budgetary risks.[50]

The project achieved 'caveated FMR' on 19 March 2014. FMR is defined as '…the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Final Operational Capability'.

In Section 1.3 Project Context (Major Risks and Issues) on page 281 of the 2013–14 Major Projects Report, the DMO depicted the situation as follows:

> Although all major risks identified in the 2012-13 Major Projects Report have been retired from an Acquisition perspective and project closure activities are in progress, the Final Materiel Release (FMR) Approval Certificate, signed by all stakeholders on 19 March 2014, was caveated by the Capability Manager.
>
> The caveats to FMR relate to Rate of Effort generation, suitability of the Ground crew Training Device, Electronic Warfare Self Protection performance, and high cost of ownership. These issues, other than the Ground crew Training Device suitability which was delivered to the contracted requirements, stem from the less than expected maturity level of Airbus Helicopter's Tiger program at the time of Acquisition. Their effect, however, is being realised as poor performance in the Tiger Sustainment System. The DMO is actively working with Airbus Group Australia Pacific, and their parent, Airbus Helicopters, to address these issues through the Tiger Sustainment System, noting that the Rate of Effort and cost of ownership issues in particular are significant, complex and are unlikely to be resolved in the short term.[51]

Ultimately, the DMO concluded that: 'There is a chance that the FOC milestone will be affected by the inability to generate the required Rate of Effort, leading to an impact on cost and schedule.

The historically reported Rate of Effort is depicted in Table 5, below.

50 ANAO Report No.36 2005–06 *Management of the Tiger Armed Reconnaissance Helicopter Project*, p. 16.
51 ANAO Report No.14 2014–15 *2013–14 Major Projects Report*, p. 281.

Table 5: ARH Tiger Helicopters Rate of Effort (RoE) 2009–10 to 2013–14

Financial year	RoE target (hours)	RoE achieved (hours)	RoE achieved (%)
2013–14	3,360.0	3,019.3	89.9
2012–13	7,147.0	2,361.0	33.0[(a)]
2011–12	6,075.0	2,449.0	40.3
2010–11	4,150.0	413.3[(b)]	10.0[(c)]
2009–10	4,000.0	1,798.0	45.0
Total (hours)/Average (%)	**24,732.0**	**10,040.6**	**40.6**

Source: Defence Annual Report 2013–14, p. 35; Defence Annual Report 2012–13: Supplementary Online Content, p. 16; Defence Annual Report 2011–12, p. 48; Defence Annual Report 2010–11, p. 91; Defence Annual Report 2009–10, p. 70.

Notes: (a) The RoE percentage achieved was reported in the Defence Annual Report 2012–13: Supplementary Online Content as 74 per cent.

(b) This figure is reported in the Defence Annual Report, a correction did not appear in the 2010–11 or 2011–12 Annual Report. The ANAO notes that the figure appears to break with the trend, and may indicate an error.

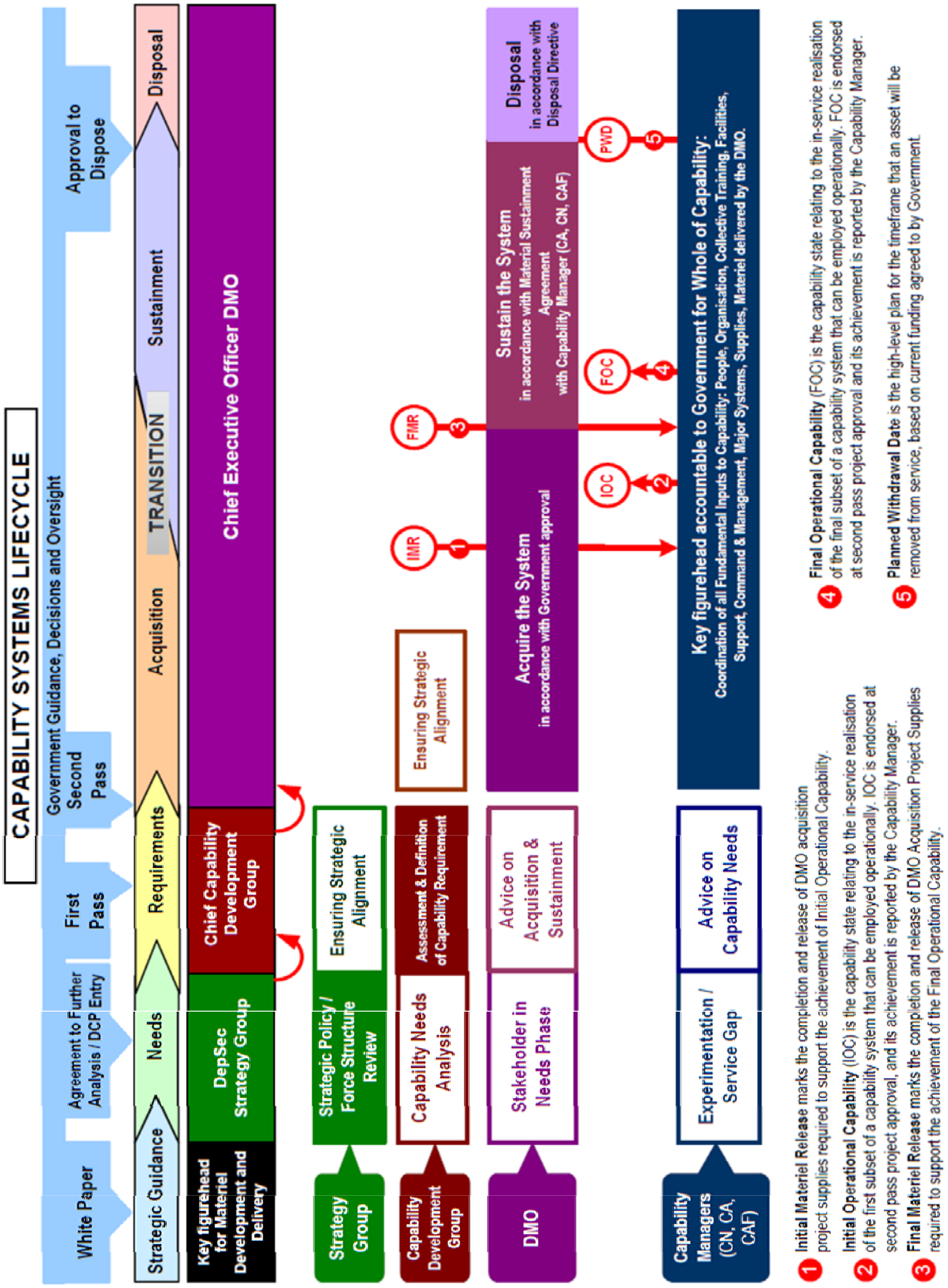
(c) The RoE percentage achieved was reported in the Defence Annual Report 2010–11 as 58 per cent.

The acquisition of the ARH platform, a highly complex combat helicopter platform, has presented a significant challenge for Defence, that has required the application of considerable management expertise, not least because the platform was actually more developmental than first thought. The acquisition history of the platform may influence the sustainability of the platform, via the issues with the:

- Electronic Self Protection System, (currently managed in sustainment);
- GPS receivers yet to be formally delivered and accepted, (since the 2012–13 MPR);
- consideration of the cost/benefits to procure upgraded/additional Ground Training Devices; and
- the cost of ownership of the Tiger Helicopter capability, (flagged previously by Army as a concern). The resolution of this problem remains an ongoing task for the Defence in sustainment.

As noted earlier, the ANAO has commenced a performance audit in relation to the ARH Tiger Helicopters platform.

Appendix 6: Capability Systems Lifecycle Diagram



Source: Department of Defence, *Capability Systems Lifecycle* [Internet], Defence, Canberra, available from <http://www.defence.gov.au/dmo/Multimedia/Capability_Lifecycle-9-4569.pdf> [accessed 23 September 2015].