

Part 2. Defence Major Projects Report

Secretary's Foreword

I am pleased to provide the 2018-19 Major Projects Report, which reports on 26 Defence major capability acquisition projects, delivered by the Capability Acquisition and Sustainment Group.

The 12th annual Major Projects Report provides transparency on the progress of Defence's largest and complex acquisition projects. The Major Projects Report developed with the ANAO continues to inform parliament and the public on Defence capability and related expenditure.

The 2018-19 year has been focussed on continued organisational and cultural reform and a transition to continuous improvement. Reform is not a 'set and forget' process; continuous improvement must become part of the One Defence culture. It is through this approach to reform that Defence can continue to improve agility and ensure the efficient and effective delivery of capability projects and their sustainment.

As part of this reform process, Defence continues to strengthen the engagement with central agencies and the partnership with defence industry. The accountabilities required to successfully deliver projects has also been reinforced through the First Principles Review reforms.

Defence is currently investigating ways to actively enhance Australian Industry Capability (AIC) and provide greater transparency into the current status and level of AIC. Defence plans to accelerate the delivery of key reforms to the AIC Program to return AIC as a real priority to the Defence sector. As part of this, Defence will establish and implement an AIC Promotion Plan. This plan will articulate specific improvement options and reporting transparency, including AIC information in future Major Projects Reports.

At 30 June 2019, Defence was managing 205 major and minor capital equipment acquisition projects in support of the Australian Defence Force with a total acquisition value of \$132.0 billion.

The 26 major capability projects within the 2018-19 Major Projects Report have a combined total approved value of \$64.1 billion and a total in-year budget of \$5.2 billion. Of note are the

following project achievements which support delivery of important capability for the Australian Defence Force and wider Pacific region:

- Joint Strike Fighter – In the 2018/19 financial year, Australia accepted delivery of eight aircraft bringing the total fleet to 14. At 30 June 2019, 10 of these aircraft were operating at the United States Luke Air Force Base Pilot Training Centre in support of pilot training and four were based at Williamstown in NSW.
- The Chief of Navy in December 2018 declared HMAS *Hobart* had achieved Initial Operating Capability, achieving a major milestone for the Air Warfare Destroyer Program.
- Under the Pacific Patrol Boat Program (SEA 3036 Phase 1), the second Guardian Class Patrol Boat, *Te Mataili II*, was gifted to the Government of Tuvalu on 6 April 2019, and the third boat, *Ngahau Koula*, was gifted to the Kingdom of Tonga on 21 June 2019.
- Offshore Patrol Vessel - The keel laying ceremony for the first vessel, NUSHIP *Arafura*, was conducted in May 2019 at Osborne, SA. Construction commenced on the second vessel in June 2019, ahead of schedule.

The Department has also been proactively closing projects and diverting resources to higher priority areas. Thirty-five Major and Minor Acquisition Projects were closed in this period, seven more than in 2017-18, with a total cost of \$72 million less than that approved by the Government.

The Vice Chief of the Defence Force, Chiefs of the Navy, Army and Air Force, the Chief of Joint Capability, the Chief Information Officer, and the Chief Finance Officer as well as our major contractors involved in each project have reviewed the relevant project data and their views have been considered in finalising this report.

I would like to take the opportunity to thank the Auditor-General, Mr Grant Hehir, and his staff for their contribution to the overall report.

I would welcome feedback on ways to improve the information and processes involved in producing the report to align it with similar international reports which have evolved to consider broader reporting across the Whole of Government. While this will take time, more

efficient processes could be established in the short term to support the disclosure of information provided in this report.

A handwritten signature in black ink, appearing to read 'Rebecca Skinner', with a long horizontal flourish extending to the right.

Rebecca Skinner
Acting Secretary
Department of Defence
10 December 2019

Purpose of the Major Projects Report

The Major Projects Report was first published for Financial Year 2007-08 to enhance transparency and accountability of the (then) Defence Materiel Organisation's major projects. It was established in a context of the Kinnaird and Mortimer Review reforms, where increased rigour was placed on capability development processes and documentation. These reforms introduced improvements to the pre-2003 processes.

The Major Projects Report was expected to evolve over time to best meet the information needs of key stakeholders on the status of the Department of Defence (Defence) capital acquisition projects.¹³⁰ With the application of the First Principles Review, consideration of the potential of the report may now warrant review.

Reporting Framework

In order to consider the Major Projects Report's purpose, it is important to consider the current legislative authority and Standards related to the assurance activity.

The Major Projects Report is prepared as a Priority Assurance Review under subsection 19A(5) of the Auditor-General Act 1997, undertaking a limited assurance review under standard ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. As part of this Standard, for a limited engagement, the objectives are:

- (a) To obtain [a] limited assurance ... about whether the subject matter information is free from material misstatement;
- (b) To express a conclusion regarding the outcome of the measurement or evaluation of the underlying subject matter through a written report that conveys ... a limited assurance conclusion and describes the basis for the conclusion; and
- (c) To communicate further as required by this ASAE and any other relevant ASAEs.¹³¹

¹³⁰ ANAO Report No.9 2008-09 Defence Materiel Organisation Major Projects Report 2007-08, p.11

¹³¹ Standard on Assurance Engagements ASAE 3000 (May 2017), paragraph 10, parts relating to a 'limited assurance' are included and those relating to a 'reasonable assurance' are omitted.

The information reporting requirements are captured under the Major Projects Report Guidelines (See Part 4 of the Report). The Guidelines are submitted for endorsement to the Joint Committee of Public Accounts and Audit (JCPAA) by the Australian National Audit Office (ANAO) in August each year. The projects selected for inclusion, the structure of the report, and the level of detail to be provided has already been agreed by the Committee for FY 2019-20, noting final project selections were pending advice from the Capability Managers (see Part 1, paragraphs 7–8).

First Principles Review Framework

The First Principles Review (FPR) published in 2015 noted that some of Defence’s organisational processes were complicated, slow, and inefficient in an environment which requires simplicity, greater agility and timely delivery.¹³² Creating a One Defence culture and generating the efficiencies identified has been a focus of Defence. It is the view of Defence that the Major Projects Report has not changed significantly in the last twelve years, and could be improved by aligning it to the FPR focus on agility and efficiency.

The United Kingdom (UK) Government have moved away from the detailed MPR process that Australia based its approach to the Major Projects Report on. The previous processes were deemed unsustainable and focus was redirected towards the broader Defence Equipment Plan. There were also improvements in the UK Ministry of Defence’s (MoD) internal data systems and controls, and it was agreed that the MoD would assume responsibility for reporting, through the Project Performance Summary Sheets to Parliament on the delivery of its largest equipment procurement projects. While it would take time to reform the reporting in this way, Defence would welcome moves in the shorter term to streamline the current reporting approach in conjunction with the ANAO and the JCPAA.

¹³² First Principles Review: Creating One Defence, page 13

Major Projects Report – Current situation

The Major Projects Report costs Defence an estimated \$2.4 million to produce, in addition to the \$2.2 million in Australian National Audit Office costs reported in Part 1. The approximate \$4.6 million total cost to produce the report is more than four projects featured in this report individually spent in 2018-19 delivering capability: ANZAC ASMD 2B - SEA 1448 Phase 2B (\$2.9m); Collins R&S - SEA 1439 Phase 3 (\$3.5m); Battle Comms Sys - JP 2072 Phase 2A (\$3.6m); and LHD Landing Craft - JP 2048 Phase 3 (\$4.3m).

There are opportunities to improve the timeliness of the report, noting that it is expected to be published five months after the end of the financial year, but has not met this timeframe for a number of years. This is due, in part to the issues requiring resolution prior to tabling, but also the detailed processes required to extract and assure the data, that is then out-of-date by the time it is published. There are also multiple reporting demands on Project Managers, who provide a number of reports for different purposes on a monthly, quarterly and annual basis, while also completing their core duties of delivering capability to the ADF.

The Major Projects Report Guidelines are submitted in August each year, 11 months prior to the end of the reporting period. This means that opportunities to adapt to change or focus the report are limited. The timing does not allow lessons of the previous report to be learned and recorded in the Guidelines for the next report, resulting in a two year delay for improvements to be appropriately captured.

The information included in the Major Projects Report remains focussed on the Kinnaird and Mortimer framework, and some aspects have lost their utility, for example:

- the focus on Project Maturity Scores which is an outdated concept post-First Principles Review;
- the simplified categorisation of projects into Commercial Off-the-Shelf, Military Off-the-Shelf and Developmental may overlook the type and level of partnership with industry;
- the move to agile contracting; and

- other standardised information that is not tailored to individual project or program circumstances such as the test and evaluation processes, the level of capability delivery aligning to scope rather than effects, and the type of risks reported.

The Major Projects Report was established to achieve a number of outcomes. With some changes to procedures, improvements could be realised. For example, the Project Data Summary Sheet (PDSS) template attempts to provide data on a broad cross-section of Capability Acquisition and Sustainment Group projects while also having a disproportionate focus on the ‘mega projects’. This has led to a high level of detailed tactical level information being provided for all projects, with the strategic view becoming lost in the detail. Further, the report also appears to be testing the project management practices and compliance against policy, rather than investigating whether the capability effect as envisioned has been delivered. Currently, the report is being welcomed for providing a range of information that is not otherwise available.

Adaptive nature of the Integrated Investment Program

Defence is taking a more holistic view of capability delivery, and moving from an individual project level approach towards an integrated program management model. A Programmatic approach reduces the number of formal ‘passes’ to Government, and keeps Government informed of progress or changes through ‘updates’. This approach allows Defence to adapt and respond to changing circumstances, providing the ability to undertake activities which are known, while examining unknowns, in a structured manner. This a new and effective approach to capability delivery when the full program cost, scope, schedule, and capability to be delivered is unknown at Government approval.

This approach also aims to make a number of improvements, such as simplifying the transition to sustainment and building on knowledge gained throughout the acquisition phase in rolling programs. This approach will also enable the grouping similar projects together to allow efficiencies to be realised, limiting the number of artificial hand-overs, and providing more meaningful information to Government.

Elements of the concept are not new, and have been applied in previous programs, such as the AIR 6000 Joint Strike Fighter program where the full set of capabilities was programmed into

multiple phases, allowing Defence to procure more advanced technology when it was likely to be available. Recently approved LAND 121 Phase 5B also built on the work of MPR project LAND 121 Phase 3B (Overlander Medium/Heavy), to utilise the extant program to complete the LAND 121 vehicle replacement program. Other tranching or rolling programs, such as LAND 53 Phase 1BR (Night Fighting Equipment Replacement), will allow Defence to take lessons learned during procurement activities and apply these to follow-on tranches.

A number of organisational and governance reforms, including the context of the Major Program Report, will need to be undertaken if the benefits of this new approach are to be fully realised. These approaches will require agility in the acquisition process to be successful. The reporting environment may need to consider a transition from a structure that provides detail on standard processes, defined scope, budgets and schedules. Traditional project milestones like Final Operational Capability (FOC) may be used differently within the programmatic context. This may result in 'Projects' like LAND 53 Phase 1BR delivering required outcomes without exiting the Major Projects Report under the current criteria, as the follow-on tranches under Phase 1BR will have follow-on FOC milestones. A review to consider more flexible entry and exit criteria might be warranted to allow a broader range and throughput of different types of projects to improve the transparency and accountability.

Is a Review of the Process Required?

A review was conducted by Defence in 2011-12 to analyse the report and provide recommendations for improvement. To achieve this, the then Defence Materiel Organisation engaged Ernst & Young to undertake a survey assessing the usefulness and value of the report to external stakeholders.¹³³

Defence would welcome a broader strategic discussion at the Joint Committee on Public Accounts and Audit to consider the format, focus and timeframes of the report. Conducting a review through the Committee would allow both Parliament and a broader cross-section of stakeholders to submit their improvement ideas, and direct focus where the best value can be achieved. Defence considers that work is needed to ensure the Major Projects Report is

¹³³ 2012-13 ANAO Report No.15: 2011-12 Major Projects Report, pp.121-124

focussed on outcomes, rather than process and compliance. Noting the significant costs involved of producing this report (outlined above), Defence trusts this would help ensure the report (or other mechanisms) can provide accountability and transparency, while providing efficient disclosure of information that is useful to Parliament, the Public Sector, and the Australian public.

Defence Strategic Environment

Force Structure Plan 2019

The 2015 First Principles Review recommended Defence adopt a business-as-usual approach to the force design of the Australian Defence Force (ADF). Accordingly, Defence implemented a Force Design Cycle which, executed through the Defence Capability Assessment Program, has facilitated the annual review of the ADF force structure within the provisions of the Defence Integrated Investment Program as currently defined by the 2016 Defence White Paper. Building on this annual program, once every four years Defence conducts a fundamental review of the ADF force structure called a Force Structure Plan.

While the direction of the 2016 Defence White Paper remains valid, there has been an acceleration of the described trends which necessitate adjustments to ADF capabilities. Led by Force Design Division, the 2019 Force Structure Plan is an Enterprise level activity and draws upon subject matter expertise from all branches of the Department. The Force Structure Plan is considering the planned investment profile against changes in the strategic environment including evolving threats and disruptive technologies. Therefore, the objective of the Force Structure Plan is to review and propose changes to the ADF's force structure to ensure it is capable of undertaking the tasks Government expects of it out to 2040. The focus is to provide an Australian Defence Force that is a lethal, agile, affordable and sustainable force.

The Force Structure Plan will be delivered through an evidence-based, transparent and repeatable process. Using a Capability Based Planning methodology, the Force Structure Plan is employing parametric cost estimation, decision support, and assurance tools. Additionally,

the 2019 Force Structure Plan is supported by a Joint Experimentation Campaign of a scale never before undertaken in the review of the ADF's force structure.

Importantly, the Force Structure Plan will identify options to address operational and strategic risks with commensurate funding offsets that will allow the Department to balance capability with strategic direction and budgetary constraints. The outcome will provide Government with a series of costed portfolio options, within the current Defence funding profile, projected out 10 years in detail and 20 years as a forecast.

The Force Structure Plan will be presented for Government consideration in early 2020 and will include:

- Force Structure Options to achieve Strategic Defence Objectives based on a continuation of Defence's current funding profile over the 10 and 20 year period.
- Force Structure risks and options to treat these risks.
- A review of, and recommendations for, potential adjustment to the Defence Workforce allocation.
- A review of, and recommendations for, updates to the Future Defence Estate Profile.
- An updated Integrated Investment Program for the period 2020-30 with a Future Capability Investment Program forecast for the period 2030-40.

Overview of MPR Projects

One of the key roles of Defence is to align Australia's defence strategy with capabilities and resourcing. A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period.¹³⁴ To achieve these outcomes, Defence continues to deliver the major projects outlined in the Integrated Investment Program and invest in the Defence and industry partnership.

The Major Projects Report outlines 26 projects, delivered by the Capability Acquisition and Sustainment Group, with a total approved value of \$64.1 billion and a total 2018-19 budget

¹³⁴ Australian Defence Force Doctrine, Preparedness and Mobilisation

of \$5.2 billion. This accounts for 48.6 per cent of the projects by total value and 12.7 per cent by number.

Key achievements

In 2018-19 the 26 reported major projects and their industry partners have worked together to progress delivery of important capability to the Australian Defence Force. There have been a number of key milestone achievements for many projects including:

- Final Operational Capability for the ANZAC Class Anti-Ship Missile Defence project (SEA 1448 Phases 2A and 2B) was achieved on 18 June 2019. As a former Project of Concern, both Industry and Defence overcame significant challenges to produce what is now a leading-edge capability.
- Initial Operational Capability for the EA-18G Growler Electronic Attack Aircraft (AIR 5349 Phase 3) was declared in February 2019, noting that in-country training is expected to be delivered later.
- On 13 June 2019, the Maritime Patrol and Response Aircraft acquisition project (AIR 7000 Phase 2B) formally accepted the eighth P-8A Poseidon aircraft from the US Navy.

Entry to and exit from the 2018-19 Major Projects Report

Of the 26 projects included in this report, 22 projects have carried over from last year's report.

Four projects are new inclusions:

- SEA 1180 Phase 1 - Offshore Patrol Vessel
- SEA 1439 Phase 5B2 - Collins Class Communications and Electronic Warfare Improvement Program
- SEA 1448 Phase 4B - ANZAC Air Search Radar Replacement
- LAND 53 Phase 1BR - Night Fighting Equipment Replacement

Four projects have been removed:

- LAND 75 Phase 4 Battlefield Command Systems was removed from the Major Projects Report Program following achievement of Final Materiel Release in December 2017
- SEA 1439 Phase 4A Collins Replacement Combat System achieved Final Operational Capability on 13 February 2019
- SEA 1429 Phase 2 Replacement Heavyweight Torpedo achieved Final Operational Capability on 13 February 2019
- SEA 1448 Phase 2A ANZAC Anti-Ship Missile Defence (2A) achieved Final Operational Capability on 18 June 2019

[Appendix 1](#) lists all the projects that have been removed from the report since its inception, their reasons for their removal, and their expenditure to date at 30 June 2019.

The lessons learned for each project that was been removed from the 2018-19 report are included at [Appendix 2](#).

Defence's review of project performance

Cost

The Defence Chief Finance Officer provides overall financial assurance, on the actual cost and budget data of individual projects included in this report. Defence also has ongoing confidence in individual projects ability to deliver the remaining intended scope within their approved project budgets on the basis of the project manager assurance sign-off processes.

Project budgets approved by Government take into account the estimated impact of inflation over the life of a project which is known as 'out-turning'. At the time of project approval, project managers estimate the impact of indices tendered (or estimated) for the life of the project. These estimates are built into the project budget as part of the out-turning process, which are revised as part of each budget review and update process.

The Department of Defence's appropriation for this reporting period is cash based. Accordingly, all financial data related to Defence's capital projects and capital programs

provided within the Defence Portfolio Budget Statements, Portfolio Additional Estimates Statements and Annual Report, are presented on a cash basis. For consistency, Defence also reports its 2018-19 capital projects on a cash basis in the Major Projects Report.

The total in-year budget (2018-19) for all the projects listed is \$5.2 billion and the total approved budget is \$64.1 billion. [Table 1](#) lists the 26 projects by total Government approval from highest to lowest.

These projects represent 12.7 per cent by number of the projects in the Military Major and Minor investment program and 48.6 per cent by value, so caution must be applied when extrapolating analysis to the entirety of Defence's acquisition effort.

Understanding Budget Variation

The planned risk-based returns to Government leading to project "budget variation" (outlined in [Table 2A](#) Column B) includes activities such as:

- follow-on Second Pass approvals,
- tranced or rolling approval processes that have been agreed by Government, or
- where projects have merged or transferred cost or scope to realise more efficient project management practices.

In some instances, Real Cost Increases (RCI) require a Government approved budget variation due to unplanned cost and/or scope variation. Historically, there have been minimal requirement to apply RCIs to the project budgets, these instances are outlined in [Column E](#).

[Table 2A](#) gives a summary of life-to-date budget approvals from Second Pass Approval to current budget including variables such as price indexation, foreign exchange and scope change impacts. Percentages of the variances are also provided.

[Table 2B](#) and [Table 2C](#) provide a further detailed breakdown of the budget variance, to separate risk-based returns to Government from unplanned cost/scope variation. This is to provide a more detailed breakdown of the Department's performance in cost and scope management, and highlight the projects with unplanned cost and/or scope variation in the interests of transparency.

Table 1 – List of 2018-19 MPR Projects by Total Approved Budget

Project Number	Project Name	Project Name Abbreviation	2018-19 In-Year Budget \$m	Total Approved Project Budget \$m
AIR 6000 Phase 2A/2B	New Air Combat Capability	Joint Strike Fighter	1,977.6	16,522.6
SEA 4000 Phase 3	Air Warfare Destroyer Program	AWD Ships	226.6	9,103.7
AIR 7000 Phase 2B	Maritime Patrol and Response Aircraft System (Boeing P-8A Poseidon)	P-8A Poseidon	472.6	5,375.7
AIR 9000 Phase 2/4/6	Multi-Role Helicopter	MRH90 Helicopters	133.7	3,771.1
SEA 1180 Phase 1	Offshore Patrol Vessel	Offshore Patrol Vessel	210.0	3,724.3
AIR 5349 Phase 3	EA-18G Growler Airborne Electronic Attack Capability	Growler	175.3	3,510.3
LAND 121 Phase 3B	Medium Heavy Capability, Field Vehicles, Modules and Trailers	Overlander Medium/Heavy	628.9	3,399.9
AIR 9000 Phase 8	Future Naval Aviation Combat System (MH-60R Seahawk Romeo)	MH-60R Seahawk	142.1	3,212.5
JP 2048 Phase 4A/4B	Amphibious Ships	LHD Ships	31.7	3,092.2
LAND 121 Phase 4	Protected Mobility Vehicle - Light	Hawkei	117.5	1,979.6
AIR 8000 Phase 2	Battlefield Airlift – Caribou Replacement	Battlefield Airlifter	55.7	1,442.1
SEA 1654 Phase 3	Maritime Operational Support Capability	MOSC	216.5	1,070.6
AIR 5431 Phase 3	Civil Military Air Traffic Management System	CMATS	115.4	975.8
JP 2072 Phase 2B	Battlespace Communications System (Land) Ph 2B	Battle Comm. Sys. (Land) 2B	150.7	942.6
AIR 7403 Phase 3	Additional KC-30A Multi-role Tanker Transport	Additional MRTT	53.1	894.3
SEA 1448 Phase 2B	ANZAC Anti-Ship Missile Defence	ANzac ASMD 2B	3.1	678.7
SEA 1439 Phase 5B2	Collins Class Communications and Electronic Warfare Improvement Program	Collins Comms and EW	76.8	607.8
SEA 3036 Phase 1	Pacific Patrol Boat Replacement	PPB-R	70.0	504.0
AIR 9000 Phase 7	Helicopter Aircrew Training System	HATS	88.5	481.6
SEA 1439 Phase 3	Collins Class Submarine Reliability and Sustainability	Collins R&S	8.3	445.3
LAND 53 Phase 1BR	Night Fighting Equipment Replacement	Night Fighting Equip Repl	97.0	442.6
SEA 1442 Phase 4	Maritime Communications Modernisation	Maritime Comms	21.8	440.0
JP 2072 Phase 2A	Battlespace Communications System (Land) Ph 2A	Battle Comm. Sys. (Land) 2A	5.6	438.1
SEA 1448 Phase 4B	ANZAC Air Search Radar Replacement	ANZAC Air Search Radar Repl	74.7	428.7
JP 2008 Phase 5A	Indian Ocean Region UHF SATCOM	UHF SATCOM	14.8	421.8
JP 2048 Phase 3	Amphibious Watercraft Replacement	LHD Landing Craft	5.0	236.7
Total			5,173.0	64,142.6

Table 2A – Project Budget Status

Project Number and Name	(a) Government Approved Budget at Second Pass \$m	(b) Subsequent Government Approvals \$m	(c) Price Indexation \$m	(d) Foreign Exchange Variation \$m	(e) Real Cost/ Scope Variation \$m	(f) Transfers \$m	(g) Budgetary Adjustments \$m	(h) Budget Cost Savings \$m	(i) (a+b+c+d+e+f+g+h) Current Budget \$m	(a)/(i) Government Approved Budget at Second Pass %	(b)/(i) Subsequent Govt Approvals %	(c+d)/(i) Price / Exchange %	(e)/(i) RCI %	(f+g+h)/(i) Other %
AIR 6000 Ph 2A/B - Joint Strike Fighter	2751.6	10515.4	351.0	2915.9	0.0	-8.4	-2.9	0.0	16522.6	16.7	63.6	19.8	0.0	-0.1
SEA 4000 Ph 3 - AWD Ships	7207.4	0.0	1173.2	-366.5	1199.5	-109.9	0.0	0.0	9103.7	79.2	0.0	8.9	13.2	-1.2
AIR 7000 Ph 2B - P-8A Poseidon	3577.7	1295.4	20.5	481.1	0.0	1.0	0.0	0.0	5375.7	66.6	24.1	9.3	0.0	0.0
AIR 9000 Ph 2/A/6 - MR160 Helicopters	957.2	2565.6	679.8	-136.4	31.5	-239.2	-87.4	0.0	3771.1	25.4	68.0	14.4	0.8	-8.7
SEA 1150 Ph 1 - Offshore Patrol Vessel	3639.1	0.0	0.0	85.2	0.0	0.0	0.0	0.0	3724.3	97.7	0.0	2.3	0.0	0.0
AIR 5349 Ph 3 - Growler	1155.3	1789.4	0.0	960.5	0.0	0.0	-394.9	0.0	3510.3	32.9	51.0	27.4	0.0	-11.2
LAND 121 Ph 3B - Overlander Medium/Hawk	2549.2	735.5	0.0	145.2	0.0	0.0	-30.0	0.0	3399.9	75.0	21.6	4.3	0.0	-0.9
AIR 9000 Ph 8 - MH-60R Seahawk	3029.6	0.0	0.1	222.0	0.0	-39.2	0.0	0.0	3212.5	94.3	0.0	6.9	0.0	-1.2
JP 2046 Ph 4A/B - LHQ Ships	2958.3	0.0	428.4	-303.8	0.0	9.3	0.0	0.0	3092.2	95.7	0.0	4.0	0.0	0.3
LAND 121 Ph 4 - Hawk	1945.0	0.0	0.4	34.2	0.0	0.0	0.0	0.0	1979.6	98.3	0.0	1.7	0.0	0.0
AIR 8000 Ph 2 - Battlefield Airlifter	1156.5	0.0	0.0	285.6	0.0	0.0	0.0	0.0	1442.1	80.2	0.0	19.8	0.0	0.0
SEA 1654 Ph 3 - MOSC	1004.6	0.0	0.0	-3.4	0.0	69.4	0.0	0.0	1070.6	93.8	0.0	-0.3	0.0	6.5
AIR 5431 Ph 3 - CMATS	731.4	0.0	0.0	3.7	247.5	-6.8	0.0	0.0	975.8	75.0	0.0	0.4	25.4	-0.7
JP 2072 Ph 2B - Battle Comm. Sys (Land) 2B	915.7	0.0	0.0	26.9	0.0	0.0	0.0	0.0	942.6	97.1	0.0	2.9	0.0	0.0
AIR 7403 Ph 3 - Additional IMRTT	681.9	187.7	0.0	29.5	0.0	0.0	-4.8	0.0	894.3	76.2	21.0	3.3	0.0	-0.5
SEA 1448 Ph 2B - Anzac ASMD 2B	248.8	155.4	76.1	-9.6	214.7	-6.7	0.0	0.0	678.7	36.7	22.9	9.8	31.8	-1.0
SEA 1439 Ph 5B2 - Collins Comms and EW	599.1	0.0	0.4	8.3	0.0	0.0	0.0	0.0	607.8	98.6	0.0	1.4	0.0	0.0
SEA 3036 Ph 1 - PPB-R	504.5	0.0	0.0	-0.5	100.1	0.0	0.0	0.0	504.0	100.1	0.0	-0.1	0.0	0.0
AIR 9000 Ph 7 - HATS	483.8	0.0	2.4	-4.5	0.0	-0.1	0.0	0.0	481.6	100.5	0.0	-0.4	0.0	0.0
SEA 1439 Ph 3 - Collins R&S	72.0	344.0	74.4	-6.0	0.0	-38.3	-0.8	0.0	445.3	16.2	77.3	15.4	0.0	-8.8
LAND 53 Ph 1BR - Night Fighting Equips Red	460.3	0.0	0.0	-17.7	0.0	0.0	0.0	0.0	442.6	104.0	0.0	-4.0	0.0	0.0
SEA 1442 Ph 4 - Maritime Comms	385.6	0.0	0.0	54.4	0.0	0.0	0.0	0.0	440.0	87.6	0.0	12.4	0.0	0.0
JP 2072 Ph 2A - Battle Comm. Sys (Land) 2A	436.4	0.0	0.0	27.3	0.0	-25.6	0.0	0.0	438.1	99.6	0.0	6.2	0.0	-5.8
SEA 1448 Ph 4B - ANZAC Air Search Radar Red	427.8	0.0	0.0	0.9	0.0	0.0	0.0	0.0	428.7	99.8	0.0	0.2	0.0	0.0
JP 2008 Ph 5A - UHF SATCOM	460.9	0.0	18.0	-39.1	0.0	0.0	0.0	-18.0	421.8	109.3	0.0	-5.0	0.0	-4.3
JP 2046 Ph 3 - LHQ Landing Craft	235.7	0.0	0.1	-8.6	0.0	0.0	-7.7	0.0	236.7	98.6	0.0	3.7	0.0	-3.3
Total \$m / Total %	38575.4	17568.4	2824.8	4401.8	1693.2	-394.5	-528.5	-18.0	64142.6	60.1	27.4	11.3	2.6	-1.5

Table 2B – Breakdown of Subsequent Government Approvals

Project Number	Project	(b) Subsequent Government Approvals \$m	Explanation
AIR 6000 Phase 2A/2B	Joint Strike Fighter	10515.4	Second Pass approval for Stage 2, acquiring an additional 58 aircraft. This figure also includes some budget corrections to keep the budget aligned with the Government approval.
AIR 7000 Phase 2B	P-8A Poseidon	1295.4	Government Second Pass Approval to fund the acquisition of an additional four P-8A aircraft and associated support systems. Funding was provided under AIR7000 Phase 2D, but merged with AIR7000 Phase 2B for efficiencies.
AIR 9000 Phase 2/4/6	MRH90 Helicopters	2565.6	Second Pass approval of Phase 4 (Black Hawk Upgrade Replacement) and Phase 6 (Maritime Support Helicopter).
LAND 121 Phase 3B	Overlander Medium/Heavy	735.5	A range of programmatic decisions have been made in relation to this project. This is aligned to the revised second pass approval.
AIR 5349 Phase 3	Growler	1789.4	Government approval to change acquisition strategy to a new-build aircraft, rather than modification of existing aircraft. This also includes the Growler Enabling capabilities and the integration of CEA systems into the Mobile Threat Training Emitter System.
AIR 7403 Phase 3	Additional MRTT	187.7	The approved scope increase associated with interim pass approval for the Government Transport and Communications modification.
SEA 1448 Phase 2B	Anzac ASMD 2B	155.4	This was a programmatic decision involving a transfer from SEA 1448 Phase 2A to replace the initial Very Short Range Air Defence with the Phased Array Radar System from CEA Technologies.
SEA 1439 Phase 3	Collins R&S	344.0	A range of programmatic funding decisions have been made with Collins-related projects to achieve optimum capability within the funding provided. For full details, please see the PDSS.
Total		17588.4	

Table 2C – Breakdown of Real Cost / Scope Variation

Project Number	Project	(e) Real Cost / Scope Variation \$m	Explanation
SEA 4000 Phase 3	AWD Ships	1199.5	This was a real cost increase (RCI) approved by Government in 2015. Following a number of independent reports, it was evident that the existing budget would be insufficient to complete the full project scope.
AIR 9000 Phase 2/4/6	MRH90 Helicopters	31.5	A RCI was approved by Government in 2008 to fund the Full Flight Mission Simulator, not included in the original scope.
AIR 5431 Phase 3	CMATS	247.5	A RCI was approved by Government in February 2018 to cover additional costs related to the acquisition.
SEA 1448 Phase 2B	Anzac ASMD 2B	214.7	A RCI of \$214.7m approved by Government in 2011 to allow the full scope to be provided and installed on ships 2-8.
Total		1693.2	

In-Year Cost

A summary of in-year project budget expenditure against the Portfolio Budget Statements and the Portfolio Additional Estimate Statements is shown in [Table 3](#).

The financial variation was primarily due to slippage in project plans, and the Quarter 4 Foreign Military Sales payment and other invoices being delayed for payment to July 2019. These variations were part of managing the overall end of financial year portfolio cash position. The variation explanations for each project can be found within Section 2.2A – In-year Budget Estimate Variance of the Project Data Summary Sheets (found in Part 3 of this Report).

Table 3 – Project in-year budget status

Project Number	Project	Portfolio Budget Statements \$m	Portfolio Additional Estimate Statements \$m	Final Plan \$m	Actual Spend \$m	Variation \$m (PBS-Actual Spend)	Variation \$m (Final Plan-Actual Spend)	Variation % (Final Plan - Actual Spend)
AIR 6000 Phase 2A/2B	Joint Strike Fighter	1,821.1	1,933.3	1,977.6	1,942.0	120.9	-35.6	-1.8%
SEA 4000 Phase 3	AWD Ships	375.9	226.2	226.6	198.9	-177.0	-27.7	-12.2%
AIR 7000 Phase 2B	P-8A Poseidon	592.3	408.9	472.6	472.4	-119.9	-0.2	0.0%
AIR 9000 Phase 2/4/6	MRH90 Helicopters	185.5	147.7	133.7	104.8	-80.7	-28.9	-21.5%
SEA 1180 Phase 1	Offshore Patrol Vessel	274.4	220.7	210.0	203.6	-70.8	-6.4	-3.0%
AIR 5349 Phase 3	Growler	197.4	193.1	175.3	127.2	-70.2	-48.1	-27.4%
LAND 121 Phase 3B	Overlander Medium/Heavy	627.6	638.8	628.9	586.7	-40.9	-42.2	-6.7%
AIR 9000 Phase 8	MH-60R Seahawk	136.6	167.0	142.1	117.7	-20.9	-24.4	-17.2%
JP 2048 Phase 4A/4B	LHD Ships	37.1	40.2	31.7	28.7	-8.4	-3.0	-9.5%
LAND 121 Phase 4	Hawkei	395.6	202.8	117.5	89.3	-306.3	-28.2	-24.0%
AIR 8000 Phase 2	Battlefield Airlifter	68.3	69.0	55.7	48.0	-20.3	-7.7	-13.8%
SEA 1654 Phase 3	MOSC	280.0	285.7	216.5	194.0	-86.0	-22.5	-10.4%
AIR 5431 Phase 3	CMAATS	116.4	125.0	115.4	109.3	-7.1	-6.1	-5.3%
JP 2072 Phase 2B	Battle Comms Sys Ph2B	136.3	164.7	150.7	157.8	21.5	7.1	4.7%
AIR 7403 Phase 3	Additional MRTT	76.2	59.6	53.1	42.1	-36.1	-11.0	-20.7%
SEA 1448 Phase 2B	Anzac ASMD 2B	4.6	4.9	3.1	2.9	-1.7	-0.2	-6.5%
SEA 1439 Phase 5B2	Collins EW	69.9	77.8	76.8	63.8	-6.1	-13.0	-16.9%
SEA 3036 Phase 1	PPB-R	71.9	70.9	70.0	61.9	-10.0	-8.1	-11.6%
AIR 9000 Phase 7	HATS	90.3	89.0	88.5	92.0	1.7	3.5	4.0%
SEA 1439 Phase 3	Collins R&S	2.6	5.1	8.3	3.5	0.9	-4.8	-57.8%
LAND 53 Phase 1BR	Night Fighting Equip Repl	89.8	95.8	97.0	95.3	5.5	-1.7	-1.8%
SEA 1442 Phase 4	Maritime Comms	36.7	36.7	21.8	8.7	-28.0	-13.1	-60.1%
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	5.7	6.7	5.6	3.6	-2.1	-2.0	-35.7%
SEA 1448 Phase 4B	ANAC Air Search Radar Repl	83.6	88.9	74.7	63.6	-20.0	-11.1	-14.9%
JP 2008 Phase 5A	UHF SATCOM	20.3	18.4	14.8	9.4	-10.9	-5.4	-36.5%
JP 2048 Phase 3	LHD Landing Craft	5.0	5.0	5.0	4.3	-0.7	-0.7	-14.0%
Total		5,805.1	5,381.9	5,173.0	4,831.5	-973.6	-341.5	-6.6%

Project Progress

There are a number of quantitative and qualitative methods used for showing project progress. [Table 4](#) shows the project complexity and the Project Maturity Score as a number out of 70 (as outlined in the Project Data Summary Sheets), and the percentage of project budget expenditure of the MPR projects.

The percentage of budget spent is dependent on the characteristics of the project and the levels of early investment needed, so the relationship between budget and progress does not necessarily match. In addition, programs with multiple tranches and/or follow-on Final Operational Capability milestones may distort the per cent of budget expended data in the future.

This table also shows that 17 projects have expended more than half their total budget, and a number are at the final stages of project delivery.

Table 4 - Project Complexity and Maturity

Project Number	Project	Complexity (ACAT) ¹	Project Maturity Score ²	Per cent of budget expended ³
AIR 6000 Phase 2A/2B	Joint Strike Fighter	I	51	28
SEA 4000 Phase 3	AWD Ships	I	61	86
AIR 7000 Phase 2B	P-8A Poseidon	II	61	73
AIR 9000 Phase 2/4/6	MRH90 Helicopters	I	57	85
SEA 1180 Phase 1	Offshore Patrol Vessel	II	44	10
AIR 5349 Phase 3	Growler	II	58	69
LAND 121 Phase 3B	Overlander Medium/Heavy	I	60	66
AIR 9000 Phase 8	MH-60R Seahawk	II	61	73
JP 2048 Phase 4A/4B	LHD Ships	I	63	92
LAND 121 Phase 4	Hawkei	I	60	28
AIR 8000 Phase 2	Battlefield Airlifter	II	55	58
SEA 1654 Phase 3	MOSC	II	50	51
AIR 5431 Phase 3	CMATS	I	41	27
LAND 2072 Phase 2B	Battle Comms Sys Ph2B	I	53	52
AIR 7403 Phase 3	Additional MRTT	III	61	71
SEA 1448 Phase 2B	Anzac ASMD 2B	I	69	95
SEA 1439 Phase 5B	Collins EW	II	54	41
SEA 3036 Phase 1	PPB-R	II	60	22
JP 9000 Phase 7	HATS	II	69	80
SEA 1439 Phase 3	Collins R&S	III	60	85
LAND 53 Phase 1BR	Night Fighting Equip Repl	III	63	47
SEA 1442 Phase 4	Maritime Comms	II	50	40
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	III	68	86
SEA 1448 Phase 4B	ANZAC Air Search Radar Repl	II	52	46
JP 2008 Phase 5A	UHF SATCOM	II	54	88
JP 2048 Phase 3	LHD Landing Craft	III	67	76

Note 1: for the full list and description of ACAT levels, please see Appendix 3.

Note 2: Project Maturity Score is a number out of 70. Further information is at Appendix 4.

Note 3: Per cent of budget expended is the total project budget compared to expenditure as at 30 June 2019.

Contingency Management

Defence's contingency policy "Management of contingency budgets in Defence Acquisition Projects" was agreed by the Investment Committee in April 2019.

A core element of delivering Defence capital projects is the ability for project managers to manage risk around cost, schedule and scope that inevitably arise through executing projects. The purpose of a contingency provision is to estimate the inherent cost, schedule and technical uncertainties of in-scope work. This is a standard component of risk management as practiced under the Capability Life Cycle (CLC) and the Smart Buyer decision framework.

Not all projects have been allocated a contingency provision within its overall acquisition provision, which varies across projects depending on the complexity and risk of the activities it will undertake.

When a project is approved by Government, the Government agrees to an overall project acquisition budget, which includes:

- a cash budget of programmed expenditure for delivery of the project over its life; and
- a contingency budget which is not programmed or funded in cash terms.

Once Cabinet has approved a project, both the project's cash budget of programmed expenditure and the unfunded contingency budget are separately recorded in Defence's financial systems.

Projects must only seek to access their Government approved contingency budgets upon the agreed identification of a contingent risk to be mitigated. Contingency funding cannot be utilised to increase the scope of a project beyond that agreed by Government.

Projects are first encouraged to meet contingency funding requirements from within their currently programmed cash funding.

If this cannot be achieved, contingency funding will be sought from across the relevant capital program. If this is not affordable, then the contingency call will be presented to the Investment Committee, to be potentially be met from budget offsets across the whole Integrated Investment Program.

Each project data summary sheet reports on whether contingency has been applied to the project during the financial year.

Across the life of the 26 projects in this year's report (that is, from September 2000 to June 2019), projects have called upon approximately \$1.2 billion. This represents 2.0 per cent of the 26 projects combined project approval value of (\$64.1 billions).

The areas where risks have been retired using contingency include:

- systems development;
- systems integration;
- logistics and support;
- schedule constraints; and
- project resourcing.

Three projects have had contingency approved this financial year:

- AIR 9000 Phase 2,4 and 6 Multi-Role Helicopter of \$12.1 million;
- JP 2072 Phase 2B Battlespace Communications System of \$29.0 million; and
- SEA1654 Phase 3 Maritime Operational Support Capability of \$40.2 million.

For further details on reasons for accessing contingency, please refer to the project data summary sheet in Part 3 for each project.

Schedule

At the broader portfolio level, as reported in the Defence Annual Report, military equipment projects are being delivered within the agreed parameters of scope and cost. Where schedule slippage has occurred, project managers are working with the Capability Manager Representatives to manage the impacts without compromising capability.

Of the 22 projects carried over from the last report, there are 12 projects that reassessed their Final Operational Capability forecast date within 2018-19, with 11 of the 12 projects pushing out their Final Operational Capability date by between one and 24 months.

The average Final Operational Capability variance of projects reviewed in 2018-19 at 30 June 2019 is 27.8 per cent, which is similar to the 29.7 per cent in 2017-18. The project schedule status of the 26 projects in this year's report is shown in Table 4 from Second Pass through to Final Materiel Release and Final Operational Capability.

Table 4 – Project Schedule Status

Project Number	Project	(a) 2nd Pass Approval	(b) Originally Estimated FMR	Forecast FMR at 30 Jun 18	Forecast FMR at 30 Jun 19	(c-b) FMR variation (months)	(c-a)/(b-a) Variation Percentage FMR	(d) Originally estimated FOC	Forecast FOC at 30 Jun 18	Forecast FOC at 30 Jun 19	(e-d) FOC variation (months)	(e-a)/(d-a) Variation Percentage FOC	
AIR 6000 Phase 2A/2B	Joint Strike Fighter	Nov 09	Dec 23	Sep 23	Sep 23	-3	-1.8%	Dec 23	Oct 23	Oct 23	-2	-1.2%	
SEA 4000 Phase 3	AWD Ships	Jun 07	Dec 17	Jan 20	Mar 20	27	21.4%	May 18	Jan 21	Jun 21	38	28.3%	
AIR 7000 Phase 2B	P-8A Poseidon	Feb 14	Oct 19	May 22	Jun 22	32	47.1%	Jan 20	May 22	Jun 22	29	40.8%	
AIR 9000 Phases 2/4/6	MRH90 Helicopters	Aug 04	Oct 14	Jun 20	Jun 21	81	65.6%	Jul 14	Dec 21	Dec 21	90	74.8%	
SEA 1180 Phase 1	Offshore Patrol Vessel	Nov 17	Dec 29	-	Dec 29	0	0.0%	Jun 30	-	Jun 30	0	0.0%	
AIR 5439 Phase 3	Growler	Apr 13	Jul 22	Jul 22	Aug 22	1	0.9%	Jul 22	Jul 22	Aug 22	1	0.9%	
LAND 121 Phase 3B	Overlander Medium/Heavy	Jul 13	Dec 22	Dec 22	Dec 22	0	0.0%	Dec 23	Jun 23	Jun 23	-6	-4.8%	
AIR 9000 Phase 8	MH-60R Seahawk	Jun 11	Dec 23	Dec 23	Dec 23	0	0.0%	Dec 23	Dec 23	Dec 23	0	0.0%	
JP 2048 Phase 4A/4B	LHD Ships	Jun 07	Aug 15	Dec 18	Dec 19	53	53.1%	Nov 16	Dec 19	Dec 19	38	32.7%	
LAND 121 Phase 4	Hawkei	Aug 15	Dec 21	Dec 21	Dec 21	0	0.0%	Jun 23	Jun 23	Jun 23	0	0.0%	
AIR 8000 Phase 2	Battlefield Airlifter	Apr 12	Oct 17	Oct 19	Oct 19	24	36.3%	Dec 17	Dec 19	Dec 19	24	35.3%	
SEA 1654 Phase 3	MOSC	Apr 16	Mar 21	Mar 21	Mar 21	0	0.0%	Dec 22	May 22	Dec 22	0	0.0%	
AIR 5431 Phase 3	CMATS	Dec 14	Aug 25	TBA	Aug 25	0	0.0%	Jun 23	Oct 25	Oct 25	28	27.5%	
JP 2072 Phase 2B	Battle Comms Sys Ph2B	Apr 15	Nov 20	Dec 20	Mar 22	16	23.8%	Sep 20	Sep 20	Sep 22	24	36.9%	
AIR 7403 Phase 3	Additional MRTT	Jun 15	Mar 18	Oct 19	Oct 19	19	57.7%	Mar 18	Oct 19	Dec 19	21	63.7%	
SEA 1448 Phase 2B	Anzac ASMD 2B	Sep 05	Jul 17	Jul 18	Nov 18	16	11.3%	Mar 13	Aug 18	Jun 19	76	83.4%	
SEA 1439 Phase 6B2	Collins EW	Jun 15	Jul 22	-	Jun 26	48	55.3%	Dec 24	-	Dec 27	37	31.5%	
SEA 3036 Phase 1	PPB-R	Apr 16	Nov 23	Nov 23	Nov 23	0	0.0%	Sep 23	Nov 23	Nov 23	2	2.3%	
JP 9000 Phase 7	HATS	Aug 14	Dec 18	Mar 19	Apr 19	4	7.6%	Dec 20	Sep 20	Dec 20	0	0.0%	
SEA 1439 Phase 3	Collins R&S	Sep 00	Oct 22	Dec 22	Dec 22	2	0.8%	Jun 14	Jun 23	Jun 23	110	65.5%	
LAND 53 Phase 1BR	Night Fighting Equip Repl	Aug 16	Mar 23	-	Mar 23	0	0.0%	Sep 23	-	Sep 23	0	0.0%	
SEA 1442 Phase 4	Maritime Comms	Jul 13	May 23	Jun 24	Jun 24	13	11.1%	Dec 23	Jul 24	Jan 25	13	10.4%	
JP 2072 Phase 2A	Battle Comm. Sys. (Land)	Nov 11	Sep 16	Nov 18	Jan 19	28	48.2%	Jun 16	Dec 18	Sep 19	40	70.9%	
SEA 1448 Phase 4B	ANAC Air Search Radar Repl	Jun 17	Apr 24	-	Apr 24	0	0.0%	Jun 24	-	Jun 24	0	0.0%	
JP 2008 Phase 5A	UHF SATCOM	Mar 09	Mar 14	Dec 19	Mar 20	73	120.0%	Jun 18	Mar 20	Dec 21	43	37.9%	
JP 2048 Phase 3	LHD Landing Craft	Sep 11	Feb 16	Dec 16	Dec 16	10	18.8%	Feb 16	TBA	Dec 19	47	86.7%	
Average Variations												25	27.8%

Schedule Variation in context

As outlined previously, the projects listed in the Major Projects Report are generally the larger acquisition projects that contain inherent risk, and as such, are more likely to encounter schedule delay, compared to other projects not included in this report. Most are legacy projects that have not otherwise benefited from the improvements to the risk management practices where the aim is to reduce the level of risk as the project progresses.

Defence has broken down the additional schedule variance factors which can be attributed to the projects which have greater than 10 per cent Final Operational Capability variance across the life of the project.

Table 5A lists those that have had an unplanned real cost or schedule increase, as outlined in the Cost Performance section of the report (see page 80). Projects with both planned programmatic returns and unplanned returns to Government have been included in this table only.

Table 5A – Schedule Variance for Projects with unplanned Real Cost / Scope Variation

Project	Key Drivers of FOC Schedule Variance
Air Warfare Destroyer	Underestimation of developing a modified design, undertaking a block construction method, and re-establishing Australia's shipbuilding capability.
MRH90 Helicopter	This project is currently managed as a Project of Concern and has encountered a range of technical challenges leading to schedule delay.
CMATS	A number of technical issues and challenges associated with the unique commercial arrangements have impacted the schedule.
ANZAC ASMD 2B	The project was scoped to deliver high risk, leading edge and developmental technology.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Table 5B lists projects where there have been subsequent government approvals, as outlined in the Cost Performance section of the report (see page 80). The two projects in this table experienced transferred scope to realise more efficient project management practices. This report uses the originally estimated milestone for comparison (rather than the re-baselined schedule as part of this Government approval). The projects with planned returns to Government for follow-on Second Pass approvals, tranching or rolling program approvals have not needed to modify their original planned Final Operational Capability date, as the original acquisition strategy would have accounted for follow-on approvals.

Table 5B – Schedule Variance for Projects with Subsequent Government Approvals

Project	Key Drivers of FOC Schedule Variance
P-8A Poseidon	A third set of four aircraft was approved by Government in February 2016. Schedule variance occurred as a result of the increased scope.
Additional MRTT	Schedule Variance is directly linked to the inclusion of the Government Transport and Communications modification.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Table 5C lists all other projects in this report that have had schedule variation of over 10 per cent. This table provides transparency of projects with schedule slip not attributed to other Government decisions.

For further detail on project schedule dates and variance explanations see Section 3 – Schedule Performance within the Project Data Summary Sheets.

Table 5C – Schedule Variance for Other Projects

Project	Key Drivers of FOC Schedule Variance
LHD Ships	Technical issues impacted the availability of the LHDs to progress test and evaluation activities, leading to a delay of key schedule milestones.
Battlefield Airlifter	Schedule delays due to: aircraft production delays associated with the transfer of the fuselage assembly line; aircraft availability reducing training throughput; the delayed start to US-based training; and establishing facilities.
Collins EW	Key risks relate to the complexity of the required capability, stakeholder engagement and challenges in achieving software security accreditation. Installation is also dependant on the Submarine docking cycle, noting installation on a 2nd platform has been brought forward from a Full Cycle Docking to an earlier Mid Cycle Docking.
Collins RCS	This project was approved in September 2000 (pre-Kinnaird) and contains legacy elements from a range of other Collins projects. Variance is primarily due to changes in docking maintenance schedule since original MAA.
Maritime Comms	Delivery and installation schedule changed to align with the Anzac Midlife Capability Assurance Program.
Battle Comm. Sys. (Land)	Variation was due to administrative process delays that did not adversely affect capability.
UHF SATCOM	Schedule variation due delays in in software development, the provision of Government Furnished Equipment, and integration and security challenges.
LHD Landing Craft	The delays were primarily due to deferment of the outstanding operational testing of heavy loads.

Note: only projects with a 10% or greater Final Operational Capability variance are included.

Materiel scope and capability

A capability in Defence terms is the power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. As outlined previously, Defence prioritises the delivery of safe and effective capability to support the ADF over schedule.

Materiel scope performance measures indicate a forecast of the materiel element of capability against the Final Materiel Release milestones, identified in the Materiel Acquisition Agreement at 30 June 2019. It should be noted that this measure does not include the fundamental inputs to capability (such as workforce) and are not necessarily indicative of each project's ultimate ability to deliver the final intended capability effect.

The subjective 'traffic light' assessment of each element is indicative of:

- green – a high level of confidence that the capability outcome will be met;
- amber – the capability outcome being under threat but still considered manageable and able to be met; and
- red – at this stage, the capability outcome is unlikely to be fully met.

Of 26 projects in this year's report:

- 21 projects had 100 per cent of the measures as green;
- Four projects have measures which are under threat (amber); and
- One project is reporting an element that is unlikely to be fully met.

Details of amber and red portions included are outlined in Table 6 below. As outlined above, this is not indicative of Defence's expected capability delivery. For further detail on the Capability/Scope Delivery Performance for individual projects please see Section 4 – Materiel Capability Delivery Performance in the Project Data Summary Sheet.

Detail of the capital equipment assets to be delivered for projects (the materiel scope), is defined in the Materiel Acquisition Agreement, the Operational Concept Document and the Function and Performance Specification.

Table 6 – Details of projects reporting Amber or Red measures

Project	Pie Chart Traffic Light	Narrative for Amber / Red Rating
JP 2048 Phase 3 - LLC	Amber (1%)	The testing of heavy loads in May 2016 was not completed as planned for safety reasons. Navy is planning to complete the trial and confirm design and LLC capacity to carry heavy loads in July 2019.
AIR 8000 Phase 2 - Battlefield Airlifter	Amber (10%)	AIR 8000 Phase 2 remains committed to the timely delivery of capabilities to support operational intent of the C-27J. AIR 8000 Phase 2 is forecasting the project will be unable to complete FMR in Oct 2019 and that further work to support an ongoing automatic dependent surveillance broadcast modification upgrade, achievement of the full military type certification, and final spares delivery (less than 1% remaining).
LAND 121 Phase 4 - Hawkei	Amber (14%)	The Initial Materiel Release milestone will be delayed by 12 months to May 2020. This is due to ongoing Hawkei Reliability issues, design maturity, and production delays caused by Steyr Motors voluntary administration. The above issues have also put two subsequent Materiel Release milestones at high risk.
AIR 9000 Phases 2,4,6 - MRH-90	Amber (25%)	MRHPO continues to work with industry to contract, redesign and deliver outstanding role including the Taipan Gun Mount, Common Mission Management System and new Mission Troop Seats.
SEA 4000 Phase 3 - Air Warfare Destroyer	Red (1%)	This project will not deliver a Radar - Electronic Attack capability. Funding will be used to help develop an indigenous Electronic Attack system for use in the Hobart Class and other Navy vessels.

Acquisition Governance

Smart Buyer

The Smart Buyer program has matured over the last financial year, and is likely to continue to adapt to the changing environment. Surveys on whether the process adds value have seen strong positive results with 98 per cent confirming the process adds value and offers unique insights to Defence Projects.

Smart Buyer supports key stakeholders working together to identify and analyse risks and drivers, and use that analysis to develop appropriate strategies – relating to projects or to other complex undertakings. It is expected that the Smart Buyer will focus on the Australian Industry Capability (AIC) improvements and obtain a deeper engagement with industry to ensure AIC strategies reflect the local industry capability.

In 2018-19 the Capability Acquisition and Sustainment Group held 91 Smart Buyer workshops supporting projects and products. The Capability Acquisition and Sustainment

Group Smart Buyer workshop numbers are detailed by stage in the Capability Life Cycle in the [Table 7](#) below. In addition, the Smart Buyer program has supported:

- Sustainment products such as Non-Combat Clothing and Surveillance and Control to maximise the opportunities a sustainment re-tender offers Defence and Industry;
- other large capability procurements, such as the Fuel Services Program and Defence Force Recruiting; and
- Information Communications Technology and Estate projects.

Table 7 – Capability Acquisition and Sustainment Group Smart Buyer Assessments in 2018 - 19

Smart Buyer Assessments	No. held
Gate Zero	39
Gate One	24
Gate Two	12
Other activities	15

Defence Independent Assurance Reviews

Defence Independent Assurance Reviews are conducted by Capability Acquisition and Sustainment Group and provide high quality and reliable advice to Defence regarding the health and outlook of programs, acquisition projects and sustainment products across the capability life cycle. Review teams are selected for their experience and expertise in a variety of disciplines relevant to the matter under consideration.

Depending on the risks or issues identified during the course of the review, which typically includes interviews with stakeholders such as the Project Manager, Program Sponsor and Capability Manager, a formal Board meeting is normally held to better understand the positions of the various parties. The Board will also begin to review the progress against AIC plans as part of the review process. The Board Chairperson may make recommendations regarding the ongoing conduct of the project or product under consideration, including whether it should be considered a candidate for Project of Interest or Project of Concern status by senior executives.

During FY 2018-19 there were 135 Defence Independent Assurance Reviews covering 164 project phases or products. In addition to reviews of Capability Acquisition and Sustainment Group matters, the Defence Independent Assurance Review process is increasingly being applied to selected Chief Information Officer Group projects, and range of projects delivered by the Australian Signals Directorate and the Australian Geospatial Organisation.

Defence Independent Assurance Reviews are broken down by project phase in the Capability Life Cycle in [Table 8](#) below.

Table 8 – Defence Independent Assurance Reviews

Defence Independent Assurance Reviews by project phase	No. held
Gate Zero	13
Gate One	12
Gate Two	22
Performance (during delivery)	87
Sustainment	30

Of these, 17 of the 26 projects listed in the Major Projects Report had an Independent Assurance Review conducted in 2018-19.

Agreements

Materiel Acquisition Agreements are the key governance document for project monitoring and reporting and detail the capability, cost and schedule expected to be delivered. This document forms the basis for monthly and quarterly project performance reporting, and is used extensively in the Major Projects Report.

Defence has undertaken a review of the current Materiel Acquisition Agreement templates, with an aim to improve the capture of information. As a result, Agreements have been updated to better reflect “One Defence” requirements, and to eliminate the need to capture additional baseline information for performance reporting.

Performance Management

Overall, performance of the Department's major capital equipment program in the 2018-19 financial year is strong. Of the 124 post Second Pass approved major capital equipment projects, two projects (or 1.6 per cent) had issues with capability, schedule or cost which were significant enough to be included in the Projects of Concern report. A further 13 projects (or 10.5 per cent) were identified as Projects of Interest, with risks associated with capability, schedule or cost that warrant further attention from internal Defence line management and senior executives.

In the context of the Major Projects Report, one of the 26 projects is a Project of Concern (3.8 per cent) and a further six were managed as Projects of Interest (23.1 per cent). Further details on Projects of Concern and Projects of interest can be found on pages 99–100.

Quarterly Performance Report

The Capability Acquisition and Sustainment Quarterly Performance Report (QPR) provides the Department and the Ministers with insight into the performance of Defence's major capital equipment acquisition and sustainment program. The QPR also fulfils Deputy Secretary Capability Acquisition and Sustainment's obligation in accordance with the First Principles Review under recommendation 2.12:

“...the Deputy Secretary Capability Acquisition and Sustainment must sign off and assure the Secretary of the operational output of each of his/her divisions every quarter...”

The QPR is a summary of performance at the end of each quarter on the key acquisition projects and sustainment products. These are comprised of the Top 30 projects and sustainment products listed in the Defence Portfolio Budget Statements and the projects featured in the Major Projects Report.¹³⁵

The QPR provides the Defence Ministers and senior Defence stakeholders with information about emerging risks and issues. It is one of the tools that support decision-making on

¹³⁵ SEA 1439 Phase 5B2 was not in the Quarterly Performance Report for 2018-19. This project and all expected MPR projects for 2019-20 are included in the 2019-20 QPR reporting.

management actions such as assessing Projects of Interest or Projects of Concern. This is in addition to the regular engagement senior stakeholders across Defence have through the monthly project and sustainment performance reporting.

A continuous improvement approach has benefitted both the monthly performance reporting and the QPR. These have included system enhancements to capture information more efficiently and increase consultation. Feedback on the content and format is regularly sought from all stakeholders including members of the Defence Investment Committee and the Defence Audit and Risk Committee.

The Australian National Audit Office conducted a Performance Audit into Defence's Quarterly Performance Report on Acquisition and Sustainment, tabled on 23 July 2019. The objective of the audit was to examine the effectiveness of the Quarterly Performance Report as a mechanism to inform senior stakeholders about risks and issues in the delivery of the capability to the Australian Defence Force. The Australian National Audit Office concluded the report is largely effective. Defence has agreed to and implemented the recommendation to improve the Quarterly Performance Report with trend performance data for sustainment products; and emerging candidates for the Projects/Products of Concern list and Products/Projects of Interest list.

Projects of Interest

Projects (and products) showing heightened risks in the areas of cost, scope, schedule, capability, commercial strategy and/or other issues are monitored through a variety of sources, and consultation with senior stakeholders occurs before determining a Project of Interest. Once listed, reporting requirements are increased with a more detailed summary of issues, along with proposed remediation strategies to get the project/product back on track. This information forms part of the QPR. The Projects of Interest 'list' is used for internal departmental and Ministerial reporting and management purposes. The broad goal is to provide senior management oversight, returning projects to satisfactory performance, and preventing projects from becoming Projects of Concern.

Projects of Concern

Projects (or sustainment activities) identified as a Project of Concern have technical, cost or schedule challenges that benefit from additional support from senior executives and Ministers. Projects are removed from the list through project remediation or project contract cancellation with the approval of the Ministers. Projects of Concern receive a higher level of oversight and management and undertake more detailed reporting to Government.

As at 30 June 2019, MRH90 Helicopters (AIR 9000 Phase 2, 4 & 6) is the only project in this year's Major Projects Report that is being managed under the Projects of Concern regime.

Since 2008, 25 projects, with a total value of \$32.4 billion, have been managed this way. As at 30 June 2019, the two active Projects of Concern had a total value of \$3.9 billion.

Table 9 lists the Projects of Concern as at 30 June 2019.

Table 9: Projects of Concern at 30 June 2019

Project Number	Project Name	Date Added
AIR 9000 Phases 2, 4 & 6	MRH90 Helicopters	Nov 2011
AIR 5431 Phase 1	Deployable Defence Air Traffic Management and Control System	Aug 2017

The Australian National Audit Office Performance Audit conducted a Performance Audit into Defence's Management of its Projects of Concern, tabled on 26 March 2019. Defence agreed to the two recommendations made that:

1. Defence introduce, as part of its formal policy and procedures, a consistent approach to managing entry to, and exit from, its Projects of Interest and Projects of Concern lists. This should reflect Defence's risk appetite and be made consistent with the new Capability Acquisition and Sustainment Group Risk Model and other, Defence-wide, frameworks for managing risk. To aid transparency, the policy and the list should be made public.
2. Defence evaluates its Projects of Concern regime.

Improvement Initiatives

Risk Reform

The 2018-19 Defence Annual Report notes that, at the Portfolio level, Defence continues to manage and balance risk to deliver performance outcomes.

Defence reviewed and updated its risk reporting framework to strengthen alignment between enterprise risk management, corporate planning and performance reporting to improve the quality of decision-making.

The Capability Acquisition and Sustainment Group (CASG) is reforming its management of risk to align enterprise-level and specialist risk management practice within the One Defence Enterprise Risk Management Framework. A cultural and behavioural change to the way risk is managed in CASG will ensure the success of the Risk Management Framework.

CASG is committed to continuously improving its approach to risk management. A DEPSEC CASG directive, and accompanying CASG Risk Management Framework will be released in Quarter 1, 2020 requiring CASG, at all levels, to align, integrate, interface and continuously improve risk management with Government, Capability Managers, and Defence Industry.

The CASG Risk Management Framework sets out the objectives of the Group's risk management program and details the approach to risk management across the Group. CASG's Risk Management Framework includes artefacts, applications, tools and templates providing guidance and practical assistance on how risk is managed in a One Defence approach.

Particular artefacts that have been developed include an Application Map for considering the areas of risk in CASG, and four Handbooks: Introduction to Risk Management, Risk Management Process, Risk Management Framework and Risk Conversations. These artefacts will be released concurrently with the Directive and Framework. A Risk Management Strategy 2020-2022 has also been developed and subordinate plans to reflect the priorities within the strategy are in development. It is anticipated the CASG Risk Management Strategy will be approved and released early in 2020.

A CASG Risk Management Manual is being developed, which will refresh risk guidance for

CASG Project, Product and Program Managers. It is expected this will be finalised by end of Q1, 2020.

Project Maturity Scores

An updated draft Project Maturity Score policy has been developed and is being reviewed as part of a wider evaluation of the Program Management governance frameworks. The Capability Acquisition and Sustainment Group has changed the policy name to Project Progress Score which describes the updated policy as it is intended to be used by project managers to assess the project's progress through the Capability Life Cycle. The updated Project Progress Score policy is also being more clearly aligned with the Smart Buyer policy language for consistency.

In a mature state, the policy will be supported by the Capability Acquisition and Sustainment Group reporting solution and reported in a later Major Projects Report (if still considered relevant).

System Program Office Reform

Systems Program Offices (SPO) Reform is a mechanism for the Capability Acquisition and Sustainment Group (CASG) to implement the agreed outcomes following from the First Principles Review (FPR).

Through SPO reform, it is envisioned that CASG will be able to deliver capability in a more efficient manner to Capability Managers. The core business will change from a primarily transactional role to focus on contracting, assurance, planning and governance. Industry will play a key role in project execution, working in genuine partnership with CASG. For the SPOs this involves understanding and clearly articulating the requirements, and allowing the suppliers to maximise efficiency and finding innovative solutions to deliver the outcomes. The increased focus on governance will allow the SPO to rapidly identify problems in the business and work with industry to solve these problems in an agile manner.

This is achieved by designing each SPO to ensure that they have the right size workforce, with the right skills and the most appropriate commercial model to deliver improved

capability, on time and within budget, within a complex environments. Currently, 63 per cent of SPOs are now aligned with the First Principles Review model, and the total number of SPOs has reduced from 78 to 61 through a consolidation process.

Restructures are complex because the process may depend on extant contracts. The full revision to a new commercial model may not be realised until legacy arrangements have ceased. In addition, the timing of reform may be impacted by Industry's capacity to support the new approach, and the associated upskilling and professionalisation of staff. Where necessary a formal organisational change management process, including union consultation, is conducted in company with the reform activities.

Improved Contract Management

Defence is currently reviewing the Contract Management Framework, with the aim to deliver Best Practice Contract Management in Defence, focussed on delivery of value for money outcomes, and collaborative, non-adversarial engagement with industry. It focuses on the leadership behaviours and cultural change needed to deliver effective contract outcomes to improve the way contracts are established and managed.

Australian Industry Capability (AIC)

Whilst Defence has always retained operational capability as the key driver in defence procurements, the level of Australian Industry Capability (AIC) has varied. AIC was highly valued in Defence 20 years ago, however, the previous decades saw a growth in the mining sectors and workforce priorities naturally shifted to this sector. This coincided with the nature of many Defence projects being Military Off-the-Shelf with minimal modifications.

Defence is currently investigating ways to actively enhance AIC and provide greater transparency into the current status and level of AIC. Defence plans to accelerate the delivery of key reforms to the AIC Program introduced through the 2016 Defence Industry Policy Statement and the 2019 Defence Policy for Industry Participation, returning AIC as a real priority to the Defence sector.

As part of this, Defence will establish and implement an AIC Promotion Plan. This plan will articulate specific improvement options and reporting transparency, including AIC information in future Major Projects Reports. As outlined above, AIC will also form part of the Smart Buyer and Independent Assurance Review processes. The aim is to ensure Government has visibility of the level of industry capabilities being developed and has the ability to make policy adjustments to drive industry capability growth and development.

Case Study: Warship Asset Management Agreement Alliance – Partnering with Industry

The Warship Asset Management Agreement (WAMA) is a four-way alliance between the Commonwealth's Capability Acquisition and Sustainment Group (CASG), Saab Australia (Saab), BAE Systems Australia and Naval Ship Management Australia (a joint venture between Babcock and UGL) for the provision of total asset management of the Royal Australian Navy's ANZAC Class Frigate.

This arrangement is in line with the First Principles Review System Program Office (SPO) reform objectives, and supports long-term relationships with industry that will underpin sovereign capabilities essential to delivery of continuous shipbuilding and sustainment, as outlined in the Defence White Paper.

The scope of work under the WAMA Contract covers a wide range of activities required to support the ANZAC Class and associated shore training facilities. Scheduling both capability upgrades and obsolescence management activities, in line with the Anzac Class Mid-life Capability Upgrade Program (AMCAP), will be particularly important and will help Defence better manage the transition between the ANZAC Class and the Hunter Class to be delivered under SEA 5000.

The following projects have links to the WAMA, including a number included in this year's Major Projects Report:

- AIR 9000 Phase 8 – MH60-R Helicopter
- JP 2069 Phase 2 – High Grade Cryptographic Equipment Modernisation
- JP 2089 Phase 2A – VMF and Link 16 Integration
- NMP 1883 Phase 1&2 – Warship Automatic Identification System
- SEA 1352 Phase 1 – Evolved Sea Sparrow Missile Upgrade and Inventory Replenishment
- SEA 1397 Phase 5B – Nulka Launch Subsystem Improvements
- SEA 1408 Phase 2 – Torpedo Self Defence Installation
- SEA 1442 Phase 4 – Maritime Communications Modernisation
- SEA 1448 Phase 4A – ANZAC Class Electronic Support System Improvements
- SEA 1448 Phase 4B – ANZAC Class Air Search Radar Replacement
- SEA 3035 Phase 1 – Navy Training Pipeline Simulation Requirements
- SEA 5000 Phase 1 – Hunter Class Frigate Acquisition Program

Appendices

Appendix 1: List of projects removed from the Major Projects Report since its inception

Table A1 – Removed MPR projects

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to date \$m	Remaining Budget \$m	FMR Achieved/Forecast	FOC Achieved/Forecast	Reason for Exit
AIR 5376 Phase 3.2	F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)	2008-09	2010-11	319.1	319.1	0.0	N/A	N/A	JCPAA Approval ¹
AIR 8000 Phase 3	C-17 Heavy Airlift	2008-09	2011-12	1,423.4	1,423.4	0.0	Dec-11	Dec-11	FOC achieved
AIR 5349 Phase 1/2	Bridging Air Combat Capability	2008-09	2012-13	3,661.4	3,045.9	651.5	Dec-12	Dec-12	FOC achieved
SEA 1444 Phase 1	Armidade Class Patrol Boat	2007-08	2012-13	537.2	530.3	6.9	Nov-07	Oct-12	FOC achieved
LAND 19 Phase 7A	Counter-Rocket/Artillery and Mortar	2011-12	2012-13	265.7	186.1	79.6	Jan-13	Jan-13	FOC achieved
AIR 5376 Phase 2	F/A 18 Hornet Upgrade	2007-08	2013-14	1,882.5	1,663.8	218.7	Sept 12	Oct-14	FMR achieved
AIR 5418 Phase 1	Follow On Stand Off Weapon	2009-10	2013-14	319.0	287.1	31.9	Sept 13	Jan-14	FOC achieved
JP 2008 Phase 4	Next Generation SATCOM Capability	2009-10	2013-14	869.5	569.1	300.4	Jun-14	Jul-15	FMR achieved
JP 2043 Phase 3A	High Frequency Modernisation	2007-08	2013-14	580.2	498.1	82.1	Dec-17	Dec-17	JCPAA Approval ²
LAND 17 Phase 1A	Artillery Replacement	2010-11	2013-14	158.5	158.5	0.0	Sept-13	Oct-14	FMR achieved
SEA 1390 Phase 2.1	Guided Missile Frigate Upgrade Implementation	2007-08	2013-14	1,453.8	1,374.7	79.0	Jun-16	Jun-16	JCPAA Approval ³
SEA 1390 Phase 4B	SM-1 Missile Replacement	2010-11	2013-14	416.1	356.5	59.7	Feb-15	Jun-15	JCPAA Approval ⁴
AIR 5077 Phase 3	Airborne Early Warning and Control Aircraft	2007-08	2014-15	3,885.3	3,559.6	285.7	Feb-15	May-15	FOC achieved

Project Number	Project	First Reported in MPR	Last Reported in MPR	Government Approved Budget \$m	Expenditure to date \$m	Remaining Budget \$m	FMR Achieved/Forecast	FOC Achieved/Forecast	Reason for Exit
LAND 75 Phase 3.4	Battlefield Command Support System	2010-11	2014-15	315.7	271.9	43.8	Mar-15	Apr-15	FOC achieved
AIR 5402	Air to Air Refuelling	2008-09	2015-16	1,818.7	1,764.3	54.4	May-16	Jul-16	FOC achieved
AIR 87	Armed Reconnaissance Helicopter	2007-08	2016-17	1867.7	1867.7	0.0	Mar-14	Apr-16	FOC achieved with Caveats
AIR 9000 Ph5C	Additional Medium Lift Helicopter	2010-11	2016-17	643.9	459.5	175.4	Jul-17	Jul-17	FOC achieved
LAND 116	Bushmaster Protected Mobility Vehicle	2007-08	2016-17	1,036.1	1,036.1	0.0	Oct-17	Jan-17	FOC achieved
LAND 121 Ph3A	Overlander Vehicles (Light)	2009-10 (as Ph 3) 2012-13 (as Ph 3A)	2016-17	900.3	900.3	0.0	Oct-16	Oct-16	FOC achieved
LAND 75 Ph4	Battlefield Command Systems	2015-16	2017-18	316.4	280.8	35.6	Dec-17	Dec-17	FOC achieved
SEA 1439 Ph4A	Collins Replacement Combat System	2007-08	2017-18	438.8	438.8	0.0	Oct-18	Dec-18	JCPAA Approval ⁵
SEA 1429 Ph2	Replacement Heavyweight Torpedo	2009-10	2017-18	428.7	337.5	91.2	Oct-18	Dec-18	JCPAA Approval ⁶
SEA 1448 Ph2A	ANZAC Anti-Ship Missile Defence	2009-10	2017-18	386.7	379.6	7.1	Jul-18	Aug-18	JCPAA Approval ⁷

Notes:

- Approval granted after project scope and budget were approved for transition to the in-service sustainment support system in 2010-11
- Approval granted in 2014 based on a risk assessment performed by the then DMO and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low
- Approval granted in 2018 based on a risk assessment performed by CASG and endorsed by the Capability Manager, which concluded the overall risk rating for remaining work was low.

Appendix 2: Lessons learned

The 2018-19 Guidelines state that “for each project which has been removed, the lessons learned at both the project level and the whole-of-organisation level should be included as a separate section in the *following* Defence MPR”.¹³⁶

Previously, lessons learned for all MPR projects have been included in this section. Many of these lessons were learned were outdated and applied to a different operating environment under the Defence Materiel Organisation. Including the outdated lessons has also led to difficulties finding newer lessons in the table below. Historical lessons can be found in previous published MPRs.

Table A2. Lessons learned

Categories of systemic lessons	Project lesson	Project learned from
Contract management	Ensuring that stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	SEA 1448 Phase 2A - ANZAC Anti-Ship Missile Defence
First of Type Equipment	Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program can introduce project management, cost, technology, gaps in OQE and schedule risk that needs to be addressed.	SEA 1439 Ph4A – Collins Replacement System
First of Type Equipment	Discipline in writing robust and understandable descriptions for failed requirements, deficiencies and non-compliances is essential. The deficiencies should be written to inform both technical and operational personnel. The benefit is better quality documentation and less re-work by other staff in the future.	SEA 1439 Ph4A – Collins Replacement System
Requirements Management	Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	SEA 1439 Ph4A – Collins Replacement System
Requirements Management	Robust procedures, processes and discipline must be implemented when managing requirements for multiple baseline combat systems. Maintaining expertise with a Requirements Management tool is essential to ensure reliable outputs and reduced re-work.	SEA 1439 Ph4A – Collins Replacement System

¹³⁶ 2018-19 Major Projects Report Guidelines, paragraph 1.13, emphasis applied.

Categories of systemic lessons	Project lesson	Project learned from
Requirements Management	Adequate implementation of Project Systems Engineering processes. In light of this, the ASMD Project has rigidly followed a disciplined systems engineering process that has ensured the complete traceability from requirements through to final acceptance testing.	SEA 1448 Phase 2A - ANZAC Anti-Ship Missile Defence
Resourcing	Ensure that adequate staffing and resources are available, in particular if Defence is to be both the prime systems integrator and Project Authority.	SEA 1439 Ph4A – Collins Replacement System
Schedule Management	Ensure that all project dependencies are established before schedule is established.	SEA 1439 Ph4A – Collins Replacement System

Appendix 3: Acquisitions categories

Defence categorises its acquisition projects to enable it to differentiate between the complexities of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four acquisition categories (ACATs):

- ACAT I – These are major capital equipment acquisitions that are normally the ADF’s most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical difficulty, operating, support and commercial arrangements;
- ACAT II – These are major capital equipment acquisitions that are strategically significant. They are characterised by significant project and schedule management and high levels of technical difficulty, operating, support arrangements and commercial arrangements;
- ACAT III – These are major or minor capital equipment acquisitions that have a moderate strategic significance to the ADF. They are characterised by the application of traditional project and schedule management techniques and moderate levels of technical difficulty, operating, support arrangements and commercial arrangements; and
- ACAT IV – These are major or minor capital equipment acquisitions that have a lower level of strategic significance to the ADF. They are characterised by traditional project and schedule management requirements and lower levels of technical difficulty, operating, support and commercial arrangements.

As the complexity of a project will vary over its life cycle, Defence reviews project acquisition categories at defined milestones between entry into the Integrated Investment Program and project completion.

The ACAT framework provides a recognised, consistent and repeatable methodology for categorising projects and aligning project managers’ certified experience and competencies to the complexity and scale of projects under management.

The ACAT level of a project is assessed against six project attributes:

- acquisition cost - the approved budget for the project;
- project management complexity - the complexity of project management necessary for its execution;
- schedule complexity - the inherent complexity brought about by delivery pressures on the project;

- technical difficulty - the complexities associated with technical undertakings such as design and development, assembly, integration, test and acceptance;
- operation and support - the complexity associated with preparing the organisation and environment in which the system will be operated, supported and sustained; and
- commercial experience - the readiness and capability of industry to develop, produce and support the required capability, and the complexity of the commercial arrangements being managed.

Appendix 4: Project Maturity

CASG's project maturity score quantifies the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. This score is then compared against an ideal or benchmark score for that milestone. A project's maturity is assessed on 16 milestones across its lifecycle and for each of these milestones the ideal or benchmark condition is represented by a benchmark score as shown in Figure A1.

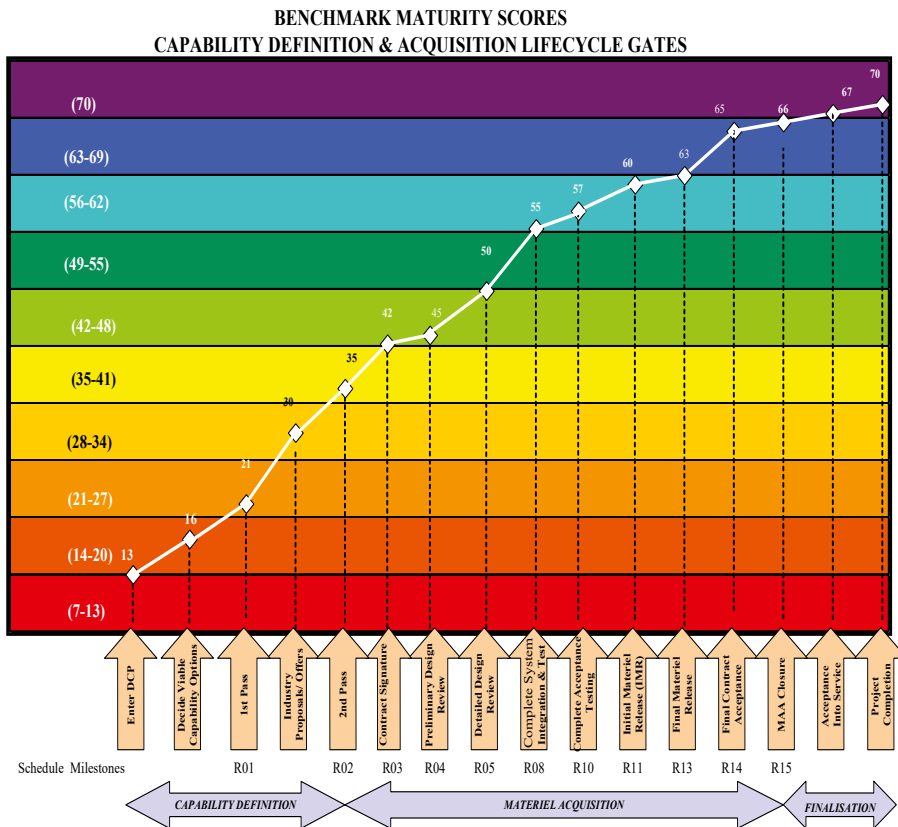
The project maturity score comprises a matrix of seven attributes:

- schedule;
- cost;
- requirement;
- technical understanding;
- technical difficulty;
- commercial; and
- operations and support.

The project manager assesses the level of maturity that a project reaches at a particular milestone for each of these attributes on a scale of 1 to 10. Score assessment is made by selecting the most appropriate description that fits the question under the attributes columns.

Project maturity scores provide a means of communicating in a simple fashion an indicative 'as is' versus a 'should be' condition to inform decision making for each project. The scores are not precise and are not intended to enable exact comparisons across projects. Following is a description of the project maturity score attributes.

Figure A1 - Benchmark maturity scores



Project maturity score matrix						
Attributes	Schedule	Cost	Requirements	Technical understanding	Technical difficulty	Operation and support
Delivery performance						
Maturity Score	How are the IMR & FMR milestones tracking against project approval?	How well is the cost tracking against project approval?	How well are the requirements defined in the MAA being realised?	Defence's understanding of the technical solution and arrangements to operate and support the capability.	How well are the design and its validation coming along?	How well prepared is the project to transition from Acquisition to Sustainment?
10	Achieved	Proven	Demonstrated	Fully understood	Proven	Operational
9	Confident	Contingency remains	Tested	Transferred	Tested	Transitioning
8	Acceptable	Confident	Designed	Arranged	Integrated	Integrated
7	In tolerance	Within contingency	Acceptable	Needs understood	Designed	Being procured
6	Manageable	Negotiated	Contracted	Provided for	Planned	Defined
Process maturity						
Maturity score	How realistic is the schedule?	What is the quality of the project estimate?	How well are the requirements defined and understood?	How well are the solutions understood?	How difficult is to integrate the component parts?	Is the impact on the existing operating and support environment understood?
5	Confirmed	Pre- endorsed capability	Endorsed	Understood	Manageable	Planned
4	Understood	Industry tested	Documented	Feasible	Feasible	Known
3	Feasible	Reasonable	Solution classes	Coalescing	Building blocks	Issues understood
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Conceivable
1	Speculative	Speculative	Deficiency	Not at all	Not defined	Not identified

Project life cycle gates ¹³⁷	Represents	Benchmark maturity score
Enter Defence Integrated Investment Program	The stage at which a project is recommended to Government for inclusion in the Defence Integrated Investment Program	13
Decide viable capability options	The stage in the capability definition/ development process when 1 st Pass options that will be put to Government are decided by Chief CDG	16
1 st pass approval	The stage at which 1 st Pass options to be put to Cabinet are endorsed by the Defence Integrated Investment Program Committee	21
Industry proposals/ offers	The stage at which formal responses from industry to a request for price or request for tender have been received and evaluated	30
2 nd pass approval	The stage in the capability definition/development process when 2 nd pass approval is sought from Cabinet	35
Contract signature	On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project	42
Preliminary design review(s)	On completion of system requirements reviews and when preliminary design reviews are completed	45
Detailed design review(s)	On completion of detailed design reviews	50
Complete system integration and test	On completion of verification and validation activities at the system and subsystem levels	55
Complete acceptance testing	On completion of all contractual acceptance testing and associated testing activities nominated in the Test and Evaluation Master Plan	57
Initial materiel release	Occurs when the materiel components that represents the CASG contribution to initial operational release are ready for transition to the capability manager	60
Final materiel release	Occurs when all the products and services within the MAA have been transitioned to the capability manager.	63
Final contract acceptance	On final acceptance as defined in the contract.	65
MAA closure	Occurs when all of the actions necessary to finalise the MAA have been completed, including completion of all financial transactions and records, completion of contracts and transfer of remaining fund.	66
Acceptance into service	The point at which the capability manager accepts the materiel system, supplies and services for employment in operational service ¹³⁸	67
Project completion	Project closure is achieved when the project is financially closed, support arrangements have been transitioned and all MAA requirements have been demonstrated and transitioned.	70

¹³⁷ Defence is in the process of replacing this as the Capability Life Cycle implementation progresses. This will still be relevant for the historical data presented in the 2016-17 Major Projects Report.

¹³⁸ Where multiple elements of a mission system are involved (e.g. three surface combatants) this date represents Initial Operational Capability (IOC) of the initial Subset, including its associated operational support, i.e. when the IOC is achieved.

Appendix 5: Capability Life Cycle

The Capability Life Cycle commenced in April 2016 to address First Principles Review Recommendation 2, which called for Defence to “Establish a single end-to-end capability development function within the Department to maximise the efficient, effective and professional delivery of military capability”. The Capability Life Cycle is Defence’s response to this recommendation.

The Capability Life Cycle is an end-to-end delivery model, but has four key stages, as outlined in the Figure below. The projects in this year’s MPR are in the Acquisition stage, but refer to decisions made in the Risk and Requirement Setting stage. Details about the Gates and Passes are listed below.

Figure A2: Capability Life Cycle Model



- **Gate Zero:** is the decision point at which the Investment Committee considers an investment proposal developed by a Capability Manager. It may agree to a proposal to develop a range of options with agreed timeframes, requirements and financial commitments to proceed to a Gate 1 decision, or, agree a single option for accelerated proceed directly to Gate 2.
- **Gate One:** (if required) is the decision point where the Investment Committee considers the progress made since Gate 0. The Investment Committee either clears the proposal for Government consideration, or provides direction to remediate projects.
- **First Pass:** (if required) is the Government decision to select a specific option(s) and proceed with agreed timeframes, technical requirements and financial commitments to Gate 2.
- **Gate Two:** is the stage where the Integrated Project Manager initiates formal engagement with industry, in accordance with the agreed delivery strategy. The Investment Committee considers the updated proposal and either clears the proposal for Government consideration, or provides direction to remediate projects.
- **Second Pass:** is the Government decision to acquire a fully defined and costed capability.
- **Initial Operational Capability:** is the capability state relating to the in-service realisation of the first subset of a capability system that can be

employed operationally. Declaration of initial operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.

- Final Operational Capability: is the capability state relating to the in-service realisation of the final subset of a capability system that can be employed operationally. Declaration of final operating capability is made by the Capability Manager, supported by the results of operational test and evaluation and declaration by the Delivery Group(s) that the fundamental inputs to capability have been delivered.

Appendix 6: Glossary

Acquisition Categories	See Appendix 1.
Additional Estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional estimates process.
Australianised Military-off-the-shelf	An adapted military-off-the-shelf product where modifications are made to meet particular ADF operational requirements.
Capability	The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. Capability is generated by the Fundamental Inputs to Capability.
Capability manager	A capability manager (CM) has the responsibility to raise, train and sustain capabilities. In relation to the delivery of new capability or enhancements to extant capabilities through the Defence Integrated Investment Plan, CMs are responsible for delivering the agreed capability to Government, through the coordination of the fundamental inputs to capability. Principal CMs are Chief of Navy, Chief of Army, Chief of Air Force, and Chief of Joint Capabilities.
Capital equipment	Substantial end items of equipment such as ships, aircraft, armoured vehicles, weapons, communications systems, electronics systems or other armaments that are additional to, or replacements for, items in the Defence inventory.
Contract change proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract.
Corporate governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.

Developmental	A product that is not available off-the-shelf and has to be developed specifically to meet the ADF's particular operational requirements.
Fixed price contract	A fixed price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract amendment which alters that contract price.
Foreign Military Sales	The US Department of Defense's Foreign Military Sales program facilitates sales of US arms, Defense services, and military training to foreign governments.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and performance specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the capability documentation.
Materiel Acquisition Agreement	An agreement between Defence and CASG which states in concise terms what services and products will be delivered, for how much and when.
Memorandum of understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two government agencies.
Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-the-shelf	A system or equipment that is available for purchase, which is already established in-service with another military or government body or commercial enterprise and requires only minor, if any, modification to deliver interoperability with existing ADF assets.
Operational concept document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.

Operational test and evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prime system integrator	The entity that has prime responsibility for delivering the mission and support systems.
<i>Public Governance, Performance and Accountability Act 2013</i>	<i>The Public Governance, Performance and Accountability Act 2013</i> came into effect on 1 July 2014 and superseded the <i>Financial Management and Accountability Act 1997</i> . It is a Commonwealth Act about the governance, performance and accountability of, and the use and management of public resources by, the Commonwealth, Commonwealth entities and Commonwealth companies, and for related purposes.
Test concept document	The basis for the development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Variable price contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.