Project Data Summary Sheet[147]

Project Number	**JP 2048 Phase 4A/4B**
Project Name	**AMPHIBIOUS SHIPS (LHD)**
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Budget at 2nd Pass Approval	$2,958.3m
Total Approved Budget (Current)	$3,092.2m
2018-19 Budget	$31.7m
Project Stage	Initial Materiel Release
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

Joint Project (JP) 2048 Phase 4A/4B is providing the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Dock (LHD) ships and associated supplies and support.

Together, these 27,000 tonne LHDs will be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.

1.2 Current Status

Cost Performance

In-year

As at 30 June 2019 in-year expenditure of $**28.7**m represents an underspend of $**3.0**m. This is primarily due to **fluctuations in engineering support requirements and delays in on-board work now scheduled for 2019-20**.

Project Financial Assurance Statement

As at **30 June 2019**, JP 2048 Phase 4A/4B has reviewed the approved scope and budget for those elements required to be delivered. Having reviewed the current financial and contractual obligations of the project, current known risks and estimated future expenditure, Defence considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Contingency Statement

The project has not applied contingency in the financial year.

Schedule Performance

There have been no major project milestones achieved in 2018-19.

Technical issues have impacted the **LHD** Final Acceptance **contract** milestone. Resolution of those technical issues, **and achievement of this milestone, is forecast for February 2020 (53 months behind schedule). LHD Final Acceptance is dependent upon closing certain contractual requirements (both technical and commercial) that are not necessarily affecting the achievement of Materiel Release or Operational Capability milestones.**

The technical issues have also impacted the availability of the LHDs to progress operational test and evaluation activities. A plan to achieve **FMR, and subsequently for Navy to declare** FOC, **has been** redeveloped with the completion of operational test and evaluation activities **forecast for 2019**, in balance with existing operational and training commitments. The project anticipates achievement of **FMR in October 2019 (50 months behind schedule), and Navy's subsequent declaration of** Final Operational Capability (FOC) in December 2019 (37 months behind schedule).

147 Notice to reader

Forecast dates and Sections: 1.2 (Materiel Capability Delivery Performance), 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), and 5 (Major Risks and Issues) are excluded from the scope of the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Assurance Report* by the Auditor-General in **Part 3** of this report.

Materiel Capability Delivery Performance

To date, the project has accepted both LHD Ships, and associated technical documentation, spares and training support. Rectification of defects and closure of outstanding functional requirements is being progressed with the Prime Contractor, as allowed by ship availability. While a number of these requirements will not be closed until HMA Ships *Canberra* and *Adelaide* are docked in 2020 and 2021, delivery of all materiel capability is expected to be achieved.

The amphibious capability sought through the provision of two LHDs is as follows:

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2,400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

Note

Forecast dates and capability assessments are excluded from the scope of the review.

1.3 Project Context

Background

The Defence Capability Plan 2004–14 identified a requirement to replace the Heavy Landing Ship HMAS *Tobruk* (JP 2048 Phase 4A) and one Amphibious Landing Ship, either HMAS *Manoora* or *Kanimbla* (JP 2048 Phase 4B). In the Defence Capability Plan 2006–16, Phases 4A and 4B of JP 2048 were amalgamated.

A Request For Information was undertaken to gather vessel capability and industry capacity information from international and Australian ship designers and shipbuilders. A Risk Reduction and Design Study and a preliminary Request for Quotation were also undertaken to provide commercial, technical, financial and schedule information for First Pass.

First Pass approval was obtained in August 2005 with the identification of two existing LHD designs that could meet the capability requirements (Armaris' Mistral and Navantia's LHD 'Juan Carlos') and the identification of potential Australian shipbuilders.

After First Pass, a Design Development Activity was conducted at the designers' respective premises to clarify the necessary Australian environmental and technical requirements, resulting in Australianised designs.

During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia and Thales Australia with Armaris.

A Request for Tender was released in April 2006 to the shipbuilders for the construction of the Australianised designs. Both builders submitted compliant tenders which were evaluated, and Second Pass Approval for the Tenix-Navantia solution was obtained in June 2007.

A contract was signed in October 2007 between the Commonwealth and Tenix Defence (now BAE Systems Australia Defence), for the acquisition of the two Spanish designed *Canberra* Class LHD ships and support systems; the contract came into effect in November 2007.

Navy accepted HMAS *Canberra* (LHD 01) on 25 November 2014 and HMAS *Adelaide* (LHD 02) on 2 December 2015, **and the project transferred to the Maritime Systems Division in July 2017. A Transition and Remediation Program (TARP) was established to complete the outstanding acquisition scope, and the project office has worked with the Prime Contractor to accept and close out outstanding acquisition scope items. The TARP has continued as part of the ongoing progress to FMR and project closure, including to resolve Warranty, Latent Defect claims, Defects and outstanding technical requirements**.

Uniqueness

The LHDs are based on an existing Spanish LHD design and incorporate the Australian Navy Combat System provided by SAAB. The internal and external communication systems have also been altered to align with Australian Navy standards which results in a unique vessel.

Despite the experience gained in amphibious operations with the current amphibious ships in the Royal Australian Navy (RAN), the LHDs will bring a new and unique capability to the ADF by virtue of their size, aviation, well dock, and communications capabilities.

A unique build strategy has been employed. The LHD hulls were built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They were transported to Australia as individual lifts on a 'float on/float off' heavy lift ship, the Blue Marlin. Construction of the superstructure and its consolidation with the hull was conducted by BAE Systems Australia Defence (BAE Systems) at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will be maintained and upgraded in Australia. BAE Systems also undertook the final out-fit, set-to-work, and trials.

Major Risks and Issues

As the project moves towards closure, there has been a reduction in the strategic risk profile. The project is currently managing a remaining risk surrounding the Prime Contractor retaining sufficient qualified and experienced staff, and a number of issues relating to:

- **The completion of outstanding contractual and Functional Performance Specification requirements on LHD01 and LHD02, as initial acceptance of the LHDs occurred prior to the achievement of some of these elements;**
- **The review of contract deliverables, witnessing of tests and defect rectification;**
- **System shortfalls in both Ships that have been identified during the Navy Operational Test and Evaluation (NOTE) period;**
- **The suitability of spares and equipment deliveries required by the RAN usage profile; and**
- **Delays affecting CASG milestones, FMR, contract Final Acceptance and project closure, as well Navy declaration of FOC, due to a combination of outstanding technical issues and subsequent delays.**

Other Current Related Projects/Phases

JP 2048 Phase 3: Watercraft system acquisition used in conjunction with the JP 2048 Phase 4A/4B Amphibious Ships (LHD) Mission System. This watercraft is the ship to shore connector for the LHDs.

Note

Major risks and issues are excluded from the scope of the review.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	$m		Notes
	Project Budget			
Nov 03	Original Approved	3.1		1
Sep 04	Real Variation – Scope	4.8		2
Aug 05	Real Variation – Scope	29.6		3
Jun 07	**Government Second Pass Approval**	2,920.8		
	Total at Second Pass Approval		2,958.3	4
Oct 08	Real Variation – Transfer		9.3	
Jul 10	Price Indexation		428.4	5
Jun 19	Exchange Variation		(303.8)	
Jun 19	**Total Budget**		3,092.2	
	Project Expenditure			
Prior to Jul 18	Contract Expenditure – BAE Systems	(2,672.1)		
	Other Contract Payments / Internal Expenses	(142.0)		6
			(2,814.1)	
FY to Jun 19	Contract Expenditure – BAE Systems	(5.1)		
	Other Contract Payments / Internal Expenses	(23.6)		7
			(28.7)	
Jun 19	**Total Expenditure**		(2,842.8)	
Jun 19	**Remaining Budget**		249.4	

Notes	
1	This project's original budget amount is that prior to achieving Second Pass Government approval.
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
3	First Pass Approval.
4	Transfer of funding for technical studies from the then Defence Science and Technology Organisation (now Defence Science and Technology Group).
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $350.0m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $78.4m having been applied to the remaining life of the project.
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support, Project Management costs, Integrated Logistics Support, and Other Minor Capital expenditure not attributable to the Prime contract and not included in the main contracted labour support areas.

7	Other expenditure comprises: Integrated Logistics Support and Engineering services ($12.4m), project management costs ($3.7m), Shore Power design and installation ($2.9m), Electronic Support Measures ($2.6m) and spares ($2.0m).

2.2A In-year Budget Estimate Variance

Estimate PBS $m	Estimate PAES $m	Estimate Final Plan $m	Explanation of Material Movements
37.1	40.2	31.7	PBS–PAES: The acquisition of the project is not as forecast in the Defence PBS 2018-19, due to increase in requirements for integrated logistics support services. PAES–Final Plan: The variation is primarily due to delays in the final milestone payment for the prime contract as well as electronic support measures requirements that were planned but have been delayed.
Variance $m	3.1	(8.5)	Total Variance ($m): (5.4)
Variance %	8.4	(21.1)	Total Variance (%): (14.6)

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan $m	Actual $m	Variance $m	Variance Factor	Explanation
			Australian Industry	Year to date underspend of $3.0m is due to lower than estimated costs for engineering support requirements and delays in on-board work now scheduled to be conducted in 2019-20.
			Foreign Industry	
			Early Processes	
		(3.0)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
31.7	28.7	(3.0)	**Total Variance**	
		(9.5)	**% Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at Signature $m	Price at 30 Jun 19 $m	Type (Price Basis)	Form of Contract / Arrangement	Notes
BAE Systems	Oct 07	2,268.1	2,682.2	Variable	ASDEFCON	1, 2

Notes

1	Contract Price at Revision 125. Amendments to Contract since signature include execution of contracted options for Training and Spares.
2	Contract value as at 30 June 2019 is based on actual expenditure to date ($2,677.2m) and remaining commitment at current exchange rates ($5.0m), and includes adjustments for indexation (where applicable).

Contractor	Quantities as at Signature	Quantities as at 30 Jun 19	Scope	Notes
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 19

LHD 01 and LHD 02 Delivery and Acceptance achieved.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mission System (Includes Platform / Combat Systems)	Feb 08	Feb 08	Feb 08	0	
	Support System	Apr 08	Apr 08	Apr 08	0	
Preliminary Design	Communication	Oct 08	Oct 08	Dec 08	2	1
	Navigation	Oct 08	Oct 08	Dec 08	2	1
	Platform System	Nov 08	Nov 08	Nov 08	0	
	Combat System	Dec 08	Apr 09	Apr 09	4	1
	Whole of Ship	Jan 09	May 09	May 09	4	1
	Support system	Mar 09	May 09	May 09	2	1
Detailed Design	Communication	May 09	Sep 09	Sep 09	4	1
	Navigation	Jun 09	Jun 09	Jun 09	0	

	Platform system	Jun 09	Jun 09	Jun 09	0	
	Combat system	Jul 09	Oct 09	Oct 09	3	1
	Whole of ship	Jul 09	Dec 09	Dec 09	5	1
	Support system	Aug 09	Dec 09	Dec 09	4	1

Notes	
1	Due to the complexity of the design and integration of the combat, communications and platform systems, more time was allocated to the design review activities. The Heavy Lift Ship Company, Dockwise, delivered the LHD 01 hull to BAE Systems in Australia on 28 October 2012 (66 days later than planned). LHD 02 departed Spain on the Heavy Lift Ship, Blue Marlin, in December 2013 and arrived in Australia in February 2014 on schedule.

3.2 Contractor Test and Evaluation Progress

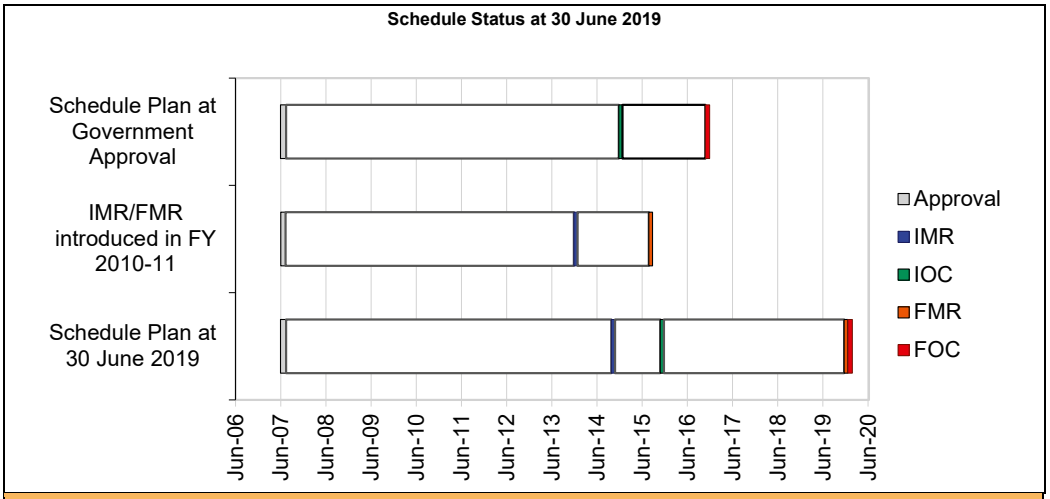
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Oct 15	7	1
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Feb 14	Oct 14	9	2
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Oct 15	2	3
	LHD Final Acceptance	Sep 15	Nov 16	**Feb 20**	**53**	4

Notes	
1	System Integration relates to the whole capability, commencing with LHD 01 and completion at LHD 02. LHD 01 production and test activities delays impacted System Integration and set to work activities.
2	Project Acceptance for LHD 01 occurred later than planned. The delay was a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions.
3	A combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, delayed the planned Sea Acceptance Trials for LHD 02, with an associated follow-on impact of delayed delivery and acceptance of LHD 02.
4	**LHD Final Acceptance is dependent upon closing certain contractual requirements (both technical and commercial) that are not necessarily affecting the achievement of Materiel Release or Operational Capability milestones**. Whilst the delay in LHD Ship 2 Project Acceptance initially affected **LHD** Final Acceptance, **extant** technical issues, including defects, have impacted closure of Contract requirements and obligations.

3.3 Progress toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR) (LHD 01)	Jan 14	Oct 14	9	1
Initial Operational Capability (IOC) (LHD 01)	Dec 14	Nov 15	11	2, 3
Materiel Release 2 (MR2) (LHD 02)	Aug 15	Oct 15	2	4
Final Materiel Release (FMR)	Aug 15	**Oct 19**	**50**	5
Final Operational Capability (FOC) (LHD 02)	Nov 16	Dec 19	37	6

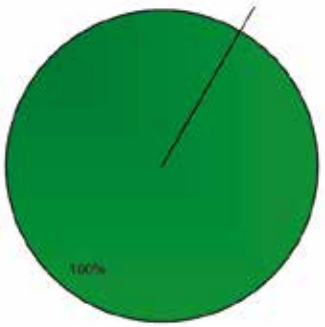
Notes	
1	LHD 01 production delays impacted System Integration and set to work activities resulting in the delay to achievement of IMR.
2	The change is a direct result of a combination of low productivity in the set to work of electrical systems, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions. IOC is a Capability Manager responsible milestone which is constituted by an operational capability level delivered through a range of Defence assets. LHD 01 and the associated Integrated Logistic Support products contribute to the achievement of IOC.
3	This variance is as a result of late delivery of LHD 01 and the programmed workup of operational capability level during the year by the Defence Forces. This delay is not related directly to LHD 02 delivery or dependent on FMR.
4	The variance is related directly to a combination of lower than anticipated production and testing performance, timeliness of documentation and complexity involved in the integration of the platform and combat system solutions, and delayed LHD 02 delivery to the project.
5	**The FMR variance is due to technical** issues and a number of defects that have impacted testing and closure of requirements and obligations.
6	The technical issues which arose throughout 2017 hindered the availability of both LHD ships and prevented the planned FOC operational scenarios from being exercised and assessed. The Operational Test and Evaluation activities planned in 2018 and 2019 **have been** rescheduled across Defence in balance with a range of operational and training commitments already planned.



Note
Forecast dates in Section 3 are excluded from the scope of the review.

Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance	
	**Green:** Closure of the functional requirements is being progressed by the Prime Contractor, some of which require agreement on the required rectification. Scheduling rectification works is constrained by fleet commitments. A number of Defects and Requirements will not be closed until after HMAS *Canberra* and HMAS *Adelaide* are docked in **2020 and 2021 respectively. Delivery and subsequent replacement of the propulsion pods, with upgraded specification rectifying system performance issues, has been scheduled to align with these dockings.** Achievement of FMR and FOC prior to the docking may occur subject to the progression of Operational Testing and establishment of a suitably resourced rectification plan for the outstanding items. **Amber:** N/A **Red:** N/A
Note	
This Pie Chart represents Defence's expected capability delivery. Capability assessments and forecast dates are excluded from the scope of the review.	

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	• LHD 01 delivered ready for Operational Test and Evaluation. • Capability Acquisition and Sustainment Group (CASG) Elements of Fundamental Input to Capability Support System, including Technical Documentation, Spares Support and Training Support (CASG portion).	Achieved
Initial Operational Capability (IOC)	• **The ability to undertake a non-combatant evacuation operation mission utilising an Amphibious Ready Element (ARE) sized force and deliver Humanitarian Assistance/Disaster Relief equipment and stores.**	**Achieved**

Final Materiel Release (FMR)	• Completed delivery of LHD 02 and all remaining Acquisition Project Support Deliverables. • FMR is expected to be achieved October 2019.	Not yet achieved
Final Operational Capability (FOC)	• **The point in time at which the Canberra Class LHDs are assessed as capable of sustainably performing Amphibious Warfare as Primary Control Ship employed in its primary role.** • **FOC expected to be achieved in December 2019.**	**Not yet achieved**

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the Prime Contractor will not be able to retain sufficient qualified and experienced staff leading to an impact on schedule.	• **Collaborative contract management and regular engagement to ensure Prime Contractor and Commonwealth adherence to contractual obligations.** • **Dedicated resource to support the coordination and prioritisation of defects/testing with repair and maintenance activities during each availability.**
Emergent Risks (risk not previously identified but has emerged during 2018-19)	
Description	Remedial Action
N/A	**N/A**

5.2 Major Project Issues

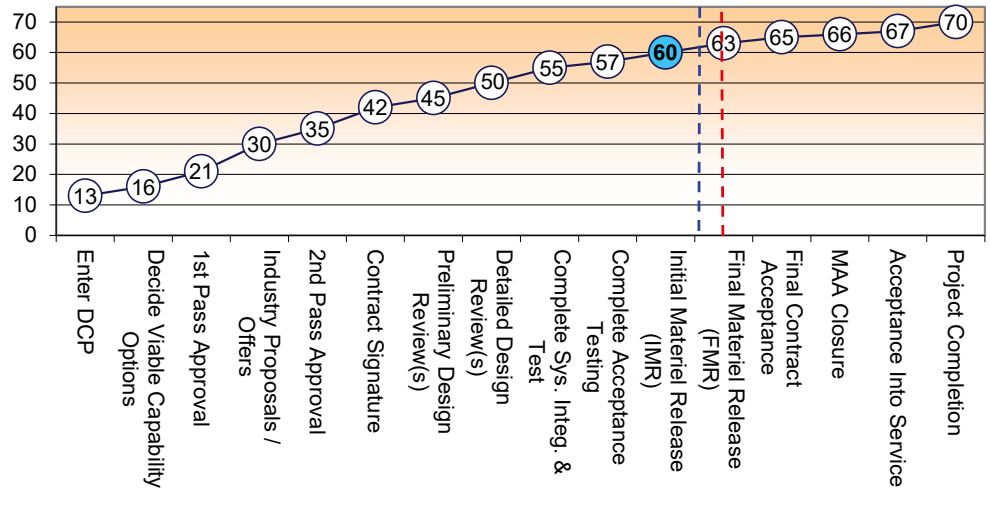
Description	Remedial Action
Initial acceptance of the LHDs occurred prior to the achievement of all applicable contractual and FPS requirements this has affected the ability to complete the outstanding requirements leading to an impact on schedule and cost.	• Prompt sign off of contract requirements. • Monitor burn down rate of remaining contract requirements. • Progressive acceptance review of stage category test results.
The review of contract deliverables, witnessing of tests and defect rectification which has been affected by the limited number of sufficiently skilled CoA project personnel leading to an impact on schedule and cost.	• Engaging External Service Providers (Contractors). • Utilise personnel from CASG maritime matrix organisation and available personnel from the SPO. • An enduring Project Management and Transition capability has been established within Major Surface Ships Branch.
The forecast FMR date has been affected by the volume of outstanding technical issues.	• The project is working with the Prime Contractor to accept and close out Warranty, Latent Defect claims, Defects and outstanding technical requirements. • Key personnel identified to ensure internal/external stakeholders are made available to develop, review and provide internal signatures for outstanding waivers/deviations. • Key personnel identified with authority to agree to actions that will enable the resolution of outstanding requirements.
In-service use of the Ships during the NOTE period has identified system performance shortfalls in key systems leading to an impact on schedule and cost.	• Transition and Remediation Program (TARP) established in April 17 to address system performance issues (remediation) and progress rectification of outstanding acquisition deficiencies and defects **which has led to increased operational availability of the LHDs**. • Project was transferred to the Maritime Systems Division and integrated with TARP effective 1 July 2017, to ensure all acquisition and sustainment activities are effectively coordinated.
Project Closure was not achieved in December 2016 as forecast due to a delay in Final Operating Capability (FOC) which has led to an impact on schedule.	• Ensure resources continue to be assigned to tracking and closure of functional requirements. • Ensure resources continue to be assigned to tracking and closure of defects and deficiencies. • Review remediation activity, Operational Testing and Evaluation schedule and update MAA.

Description	Remedial Action
The delivery and support of two LHDs will be affected by spares and equipment that are not appropriate for RAN usage profiles leading to an impact upon sustainability and cost.	• Project has engaged External Service Providers to review & make recommendations on the Logistics Supportability Analysis Record and this work is ongoing as part of the TARP ILS Remediation. • ILS Remediation is reviewing maintenance baseline and associated spares recommendations using current RAN Operating Profiles. **This review contributed to the achievement of ILS Assurance for the LHDs in early 2019**. • Project to continue to review all engineering changes to ensure spares have been correctly identified.
Note	
Major risks and issues in Section 5 are excluded from the scope of the review.	

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	8	8	8	9	8	9	60
Initial Materiel Release	Project Status	**9**	9	9	9	9	8	10	**63**
	Explanation	• Schedule: BAE Systems delivered LHD 01 and LHD 02 late. **The project continues to manage the pressures on achieving FMR and FOC schedule milestones**. • Cost: The Project is on track to achieve outcomes within the allocated budget. • Requirement: Integration and testing processes have verified achievement of endorsed requirements. • Technical Understanding: Knowledge necessary to operate and support the capability has been transferred to Sustainment. • Operations and Support: The Mission and Support Systems are now fully operational.							



2017-18 MPR Status - - - - 2018-19 MPR Status - - - -

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Independent Assurance Reviews and Project Stakeholder Group meetings enable adjustment of project strategies and stakeholder input to balance schedule decisions against impacts to cost, schedule, performance, quality and stakeholder expectations. For example, cost, performance and supportability may be impacted by early acceptance of the supplies to meet schedule demands.	Contract Management
Prior to committing to the acquisition contract, use best endeavours to obtain high fidelity sustainment data and assess it against suitability (fitness for purpose). Senior engineering and logistic reviews are required prior to the delivery of the sustainment products to minimise sustainment risks.	Contract Management
When introducing new major capabilities into service, both operational tasks and maintenance tasks should be modelled and analysed in detail, before the training obligations under the acquisition contract are agreed.	First of Type Equipment

Section 8 – Project Line Management

8.1 Project Line Management as at 30 June 2019

Position	Name
Division Head	**RADM Wendy Malcolm**
Branch Head	CDRE Robert Elliott
Project Director	**Mr Paul Heiskanen**
Project Manager	Mr Thomas Egan