

## Project Data Summary Sheet<sup>148</sup>

Project Number	JP 9000 Phase 7 <sup>149</sup>
Project Name	Helicopter Aircrew Training System
First Year Reported in the MPR	2015-16
Capability Type	Replacement
Acquisition Type	Australianised COTS
Capability Manager	Chief of Navy
Government 1st Pass Approval	February 2007
Government 2nd Pass Approval	August 2014
Total Approved Budget (Current)	\$474.2m
2016-17 Budget	\$108.6m
Project Stage	Detailed Design Review
Complexity	ACAT II



HATS

Part 3. Project Data Summary Sheets

### Section 1 – Project Summary

#### 1.1 Project Description

JP (AIR<sup>2</sup>) 9000 Phase 7 will provide a new Helicopter Aircrew Training System (HATS) to prepare Navy and Army aircrew for conversion to operational aircraft. JP 9000 Phase 7 will replace the current systems based on Squirrel and Kiowa helicopters.

The project will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices, together with system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring.

#### 1.2 Current Status

##### Cost Performance

###### In-year

The MRS Project report identifies \$87.5m of expenditure against a cash budget of \$108.6m to 30 June 2017. The underspend of \$21.2m is primarily due to invoices paid in the previous FY but budgeted for cash basis in the current FY. This variance was primarily driven by the change from Accrual to Cash Accounting basis from 1st July 2016.

###### Project Financial Assurance Statement

As at 30 June 2017, JP 9000 Phase 7 has reviewed the project's approved scope and budget for those elements required to be delivered by Defence. Having reviewed the current financial and contractual obligations for this 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 during the financial year.

##### Schedule Performance

The Stop Payment initiated when Systems Requirement Review did not occur as contracted was removed in January 2016 on successfully exiting the review. Three further Stop Payment Milestones were not achieved. In each case, due to BDA's improving performance, Defence reserved its rights and did not invoke Stop Payment. By 30 April 2017 two of these milestones had been completed and the third, Support System Detailed Design Review was completed in June 2017.

Following schedule delays throughout 2015, a revised Contract Master Schedule was delivered to the Commonwealth in late April 2016 which reaffirmed BDA's commitment to deliver the capability on time. The revised schedule has continued to challenge all parties throughout the year.

#### 148 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.

149 HATS was originally approved as an AIR project but since second pass it has been managed and reported as a Joint project. For finance reporting purposes the title 'AIR' must be retained. The remainder of this report will refer to JP 9000 Phase 7.

<p>Two of three full motion Flight Simulators have installed and are completing testing prior to acceptance.</p> <p>Remaining synthetic training devices with the exception of the Aircraft Replica Trainer were delivered, installed and are completing testing prior to acceptance.</p> <p>All synthetic devices installed remain the property of the Contractor during system set to work and testing. The devices will be offered for acceptance at System Acceptance Audit in late 2017.</p>
<p><b>Materiel Capability Delivery Performance</b></p> <p>Since March 2016, 11 helicopters were delivered to Nowra NSW bringing deliveries to 14 of 15 helicopters. Flying operations in support of training event development commenced in September 2016.</p>
<p><b>Note</b></p> <p>Forecast dates and capability assessments are excluded from the scope of the review.</p>

### 1.3 Project Context

<p><b>Background</b></p> <p>JP 9000 Phase 7 is intended to provide a rotary wing training capability for Navy and Army, to meet the future rotary training needs of the Australian Defence Force (ADF). The Project will deliver a system that encompasses live, synthetic and classroom aviation instruction to overcome the broadening gap between current rotary training systems and the advanced operational helicopters in the current and planned future ADF inventories.</p> <p>The Project achieved Government First Pass approval in February 2007 and Second Pass approval in August 2014. Both Acquisition and Support Contracts were signed on 14 November 2014.</p> <p>The Acquisition contract will deliver a total aircrew training solution based around 15 Airbus EC135T2+ helicopters, three Thales Flight Simulators and numerous other synthetic training devices. BDA is responsible for the development and set to work of a training delivery and management system which includes Training Management Plans based on Defence identified competencies and competency levels. Training development is being conducted in accordance with the Defence Training Model.</p> <p>The Support Contract provides for system support and joint delivery for an initial award term of approximately eight years, with further optional award terms of three years recurring. The Support Contract is performance based with Key Performance Indicators relating to aircraft, simulator and instructor availability and includes a Continuous Improvement and Efficiency Program.</p>
<p><b>Uniqueness</b></p> <p>As a direct capital acquisition utilising ASDEFCON developed performance based contracts there are no truly unique aspects to the project.</p>
<p><b>Major Risks and Issues</b></p> <p>During pre-contract testing Flight Simulator auto-rotational performance modelling was identified as a risk, as rectification may require unplanned modification of Simulator software resulting in schedule delay. Pilot tuning activities appear to have addressed this risk, which will be assessed in quarter four 2018.</p> <p>The project is managing one significant issue, schedule compression prior to commencement of the trial course (Pilot) in January 18, through collegially and pragmatically working with BDA to identify and leverage efficiencies in program delivery.</p>
<p><b>Other Current Sub-Projects</b></p> <p>The HATS project influences the following aircraft platforms by providing aircrew training to feed into their operational flying conversions:</p> <ul style="list-style-type: none"> <li>AIR 9000 Phase 8 Future Naval Aviation Combat System Helicopter</li> <li>AIR 9000 Phase 2/4/6 Multi-Role Helicopter</li> <li>AIR 9000 Phase 5C Additional Medium Lift Helicopters</li> <li>AIR 87 Phase 2 Armed Reconnaissance Helicopter</li> </ul> <p>The following projects directly influence HATS:</p> <ul style="list-style-type: none"> <li>AIR 5428 Pilot Training System which provides students to HATS for rotary wing conversion.</li> <li>Multi role Aviation Training Vessel (MATV), MV SYCAMORE</li> <li>J 0028 HATS Facilities Project providing training, accommodation and maintenance facilities.</li> </ul>
<p><b>Note</b></p> <p>Major risks and issues are excluded from the scope of the review.</p>

## Section 2 – Financial Performance

### 2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
<b>Project Budget</b>			
Feb 07	Original Approved	13.6	1
Nov 13	Real Variation – Transfer	(3.2)	2
Jun 14	Real Variation – Transfer	(1.6)	2
Sep 14	Government Second Pass Approval	475.0	
		470.2	
Jul 10	Price Indexation	2.4	3
Jun 17	Exchange Variation	(12.0)	
Jun 17	<b>Total Budget</b>	<b>474.2</b>	
<b>Project Expenditure</b>			
Prior to Jul 16	Contract Expenditure – Boeing Defence Australia (BDA) – Acquisition Contract	(94.5)	4
	Contract Expenditure – BDA – Support Contract Phase In	(3.6)	
	Contract Expenditure – Jacobs Australia	(3.3)	4
	Other Contract Payments/Internal Expenses	(11.6)	4,
		(113.1)	
FY to Jun17	Contract Expenditure – BDA – Acquisition Contract	(74.7)	
	Contract Expenditure – BDA – Support Contract Phase In	(9.7)	
	Contract Expenditure – Jacobs Australia	(1.7)	
	Other Contract Payments/Internal Expenses	(1.3)	5
		(87.4m)	
Jun 17	<b>Total Expenditure</b>	<b>(200.5)</b>	
Jun 17	<b>Remaining Budget</b>	<b>273.7</b>	
<b>Notes</b>			
1	The project's original budget amount prior to achieving Second Pass Government approval.		
2	Transfer of budget to <b>Estate and Infrastructure Group (formally known as</b> Defence Support and Reform Group) for Facilities Activities.		
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$2.4m, applied only to the portion of the budget approved at First Pass. From July 2010 all project budgets were approved by Government in out-turned dollars.		
4	Other Expenses mainly comprised of: Contractor Support (\$6.0m), Salaries (\$2.9m), Legal (\$1.5m), Travel and Training (\$1.2m).		
5	Other expenditure comprises: Contractor Support (\$0.4m), and Travel and Training (\$0.2m).		

### 2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Defence's Explanation of Material Movements
193.2	122.5	108.6	PBS – PAES: Variation is due to industry delays early in the project and consequent slippage of milestones. PAES – Final Plan: Variation of (\$13.9m) is due to a reduction in indexation calculation methodology (\$8.0m), reprogramming of Boeing deliverables (3.0m), currency adjustments (\$1.2m), reduction in Jacobs Integrated Service Contract due to schedule realignment (\$1.2m) and other minor reductions (0.5m).
Variance \$m	(70.8)	(13.9)	Total Variance (\$m): (84.6)
Variance %	(36.6)	(11.3)	Total Variance (%): (43.8)

## 2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
108.6	87.5		Australian Industry	Year To Date variance of is primarily due to invoices paid in the previous FY but budgeted for in the current FY. This variance was driven by the change from Accrual to Cash Accounting basis from 1st July 2016.
			Foreign Industry	
			Early Processes	
		(21.2)	Defence Processes	
			Foreign Government Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
			Total Variance	
			(19.5)	

## 2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 17 \$m			
BDA – Acquisition	Nov 14	311.6	281.5	Firm	ASDEFCON	1
BDA – Support Phase In	Nov 14	68.6	61.0	Firm	ASDEFCON	1
Jacobs Australia ISC	Dec 14	10.2	7.6	Firm	ASDEFCON	1
<b>Notes</b>						
1	Contract value as at 30 Jun 17 is based on actual expenditure to 30 Jun 17 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 17				
BDA – Acquisition	Various	Various	15 EC 135 Helicopters 3 Full Flight Simulators 17 associated synthetic training devices 4 Training Management Plans Training Management System			
BDA Support Phase In	N/A	N/A	System support and joint delivery for an initial award term of approximately 8 years.			
Jacobs Australia ISC	N/A	N/A	Provide specialist engineering support, integrated logistics and training design.			
<b>Major equipment received and quantities to 30 Jun 17</b>						
14 EC 135 Helicopters						
<b>Notes</b>						
	N/A					

## 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	System Requirements Review	Sep 15	N/A	Jan 16	4	1
	System Definition Review	Feb 16	N/A	Dec 16	10	2
Critical Design	Aircraft Replica Trainer	Jan16	Nov 16	Feb 17	13	3
	Support System Detailed Design Review	Jun 16	N/A	Jun 17	12	4
<b>Notes</b>						
1	Variance due to slow ramp up of Contractor workforce and scheduling/resource issues identified through the Integrated Baseline Review and complimentary Schedule Compliance Risk Assessment Methodology (SCRAM) review.					
2	Additional delay to System Definition Review resulted from BDA remediation and re-planning efforts, including emergent issues identified through remediation activities.					
3	Hardware design activity is only applicable to the ART, as all other aspects are predominantly COTS devices/technology. Design review for ART is a combined preliminary and critical process. A Contract Change Proposal was signed in November 2015 to move the ART Design Review so that it logically occurred after the System Design Review.					
4	Additional delay to Support System Detailed Design Review resulted from emergent issues identified during development of aspects of the support system.					

## Project Data Summary Sheets

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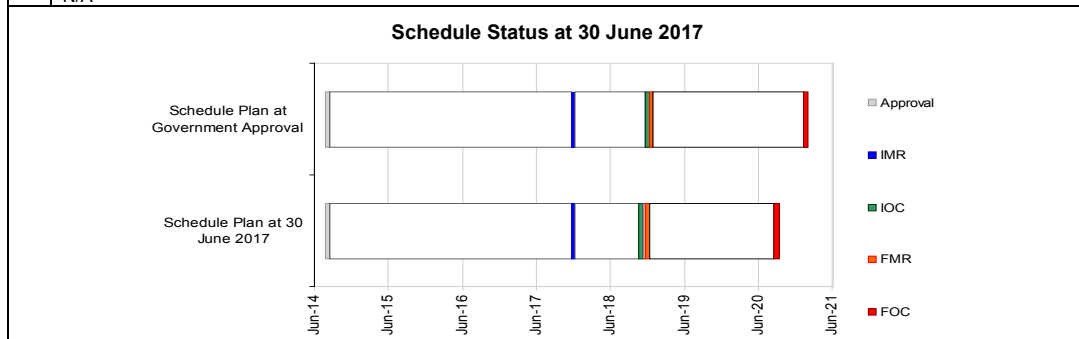
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System/Platform Variant	Original Planned	Current Planned	Achieved/Forecast	Variance (Months)	Notes
System Integration	Piloting Course Readiness – Pilot	Dec 17	N/A	Nov 17	(1)	1
Acceptance	First EC135T2+ helicopter	Mar 16	N/A	May 16	2	
	Final EC135T2+ helicopter	Feb 17	N/A	Aug 17	6	2
	Final Acceptance	Mar 19	N/A	Feb 19	(1)	
<b>Notes</b>						
1	This milestone is closely associated with the System Acceptance Audit which will constitute acceptance of the mission systems, support system and training system elements to achieve Initial Materiel Release (see section 4.2), and will be achieved at the same time.					
2	Aircraft N52-007 retained by Airbus Helicopters in Germany as prototype for development of an air-conditioning retrofit Engineering Change. Remaining helicopters will be modified in Australia by BDA at no additional cost to the Commonwealth.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved/Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 17	Dec 17	0	
Initial Operational Capability (IOC)	Dec 18	Nov 18	(1)	
Final Materiel Release (FMR)	Dec 18	Dec 18	0	
Final Operational Capability (FOC)	Dec 20	Sep 20	(3)	

<b>Notes</b>				
	N/A			



<b>Note</b>
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	
<p>100%</p>	<p><b>Green:</b> The project expects to meet capability requirements as expressed in the MAA and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.</p>
	<p><b>Amber:</b> N/A</p>
	<p><b>Red:</b> N/A</p>

<b>Note</b>
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)	<ul style="list-style-type: none"> <li>15 helicopters, 2 Full Flight Simulators, 2 Tactical Part Task Trainers, 2 Virtual Reality Trainers (VRT), 1 Marshalling VRT, 1 Helicopter Underwater Egress Training conversion module, 1 Aircraft Replica Trainer and 10 Desktop Trainers ready to be employed for HATS Piloting courses.</li> <li>Associated Mission, Support and Training Systems.</li> <li><b>Forecast to be achieved in December 2017.</b></li> </ul>	Not yet achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> <li>IMR deliverables, plus one additional full flight simulator and transition of all HATS acquisition products (Mission and Support Systems) and materials to their in-service support agency.</li> <li><b>Forecast to be achieved in December 2018.</b></li> </ul>	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
BDA failure to meet contract milestones as a result of MATV schedule slippage. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, the contractor will not be able to meet subsequent milestone deliveries.	<ol style="list-style-type: none"> <li>1. Early and continuing engagement with MATV Project.</li> <li>2. Early and continuing engagement with Aviation Capability Implementation Team (AvnCIT).</li> <li>3. Advise BDA at earliest opportunity of MATV First of Class Flight Trial (FOCFT) dates and work in a collegiate manner to mitigate slip in timings.</li> <li>4. Set behaviours around ongoing Support contract rather than transfer any potential slip in Acquisition contract.</li> </ol> <p><b>This risk has been retired through re-scheduling project test and evaluation activities to late 2017.</b></p>
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
<b>Flight Simulator Auto-rotation modelling deficiency may require unplanned modification of Simulator software resulting in schedule delay.</b>	<p><b>Optimisation of modelling by the Original Equipment Manufacturer.</b></p> <p><b>Review and optimisation of device handling responses during post installation and qualification testing.</b></p>

#### 5.2 Major Project Issues

Description	Remedial Action
Availability of MATV for EC135 FOCFT in accordance with the HATS schedule. MATV is being provided as Government Furnished Equipment. If this vessel is not available at the scheduled time, Defence will not be able to conduct contractor supported FOCFT.	<ol style="list-style-type: none"> <li>1. Early and continuing engagement with MATV Project (PMSG).</li> <li>2. Early and continuing engagement with AvnCIT.</li> <li>3. Investigation into graduated piloting course validation that enables FOCFT operations to be conducted at latest possible date.</li> </ol> <p><b>This risk has been retired through re-scheduling project test and evaluation activities to late 2017.</b></p>
<b>The body of work required prior to commencement of the Trial Course (Pilot) in January 2018 is placing significant pressure on the available Commonwealth and BDA resource base.</b>	<ol style="list-style-type: none"> <li>1. Rationalising verification and validation processes to reduce duplication of testing across delivery and integration activities.</li> <li>2. Applying a risk-based focus to training effect verification prior to the Trial Course validation activities in 2018.</li> <li>3. Reconciling acquisition activities with the introduction of the Defence Aviation Safety Regulations.</li> <li>4. Critically reviewing project execution processes to align with and leverage the Contract position of BDA as total capability deliverer.</li> </ol>

<b>Note</b>
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							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Detailed Design Review	Project Status	7	8	7	8	8	7	7	52
	Explanation	<ul style="list-style-type: none"> <li><b>Cost:</b> The project is 32 months into a 52 month fixed price acquisition contract. The project has progressed to a stage where the project cost can be forecast with confidence. Majority of risks have been retired in project elements particularly sensitive to cost increases.</li> <li><b>Technical Difficulty:</b> Sole Developmental – Major mission system, Aircraft Replica Trainer, has completed Critical Design Review and is in course of manufacture. All other mission systems are commercial / military off the shelf systems.</li> </ul>							

Project Stage	Maturity Score
Enter DCP	13
Decide /Viable Capability Options	16
1st Pass Approval	21
Industry Proposals / Offers	30
2nd Pass Approval	35
Contract Signature	42
Preliminary Design Review(s)	45
Detailed Design Review(s)	50
Complete Sys. Integ & Test	55
Complete Acceptance Testing	57
Initial Material Release (IMR)	60
Final Material Release (FMR)	63
Final Contract Acceptance	65
MAA Closure	66
Acceptance Into Service	67
Project Completion	70

Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Where a project has a long gestation period, for whatever reason, the Sponsor and Capability Manager must be closely engaged to ensure the requirements set maintains relevance over time.	Requirements Management
Tenderer/Contractor 'off-the-shelf' claims need to be tested as thoroughly as possible, as soon as possible in the project lifecycle. This requires the availability of, or access to, appropriate and engaged subject matter experts early.	Off-the-Shelf Equipment
Conduct of SCRAM activities during contract negotiation and again prior to IBR were first trialled in this Project, yet the schedule risks were realised very early in the Project. Early use of the SCRAM activity is valuable (risks identified early) and the process should be matured to support selection/negotiation and to baseline activities.	Schedule Management
This Project is one of the first to implement the Integrated Support Contractor (ISC) model to execute traditional Project Office roles. The ISC Contract structure was closely aligned to and reliant on the Prime Contractor's Contract Master Schedule (CMS). Initial CMS deliverables had quality issues manifesting significant second order effects on the ISC contract. Evolution of the ISC construct should recognise risks in lock-stepping the ISC delivery so closely to the Prime Contractor CMS.	Resourcing
The ASDEFCON suite of contract templates are a good initiative for capturing lessons learned from years of project delivery. In endeavouring to capture all lessons the templates have become voluminous with significant inter-relationships. This can make	Contract Management

contract execution, and in particular contract changes, very difficult as even a small change in one area may unravel other relationships within the contract suite.	
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**Section 8 – Project Line Management**

8.1 Project Line Management in 2016-17

Position	Name
Division Head	MAJGEN Andrew Mathewson
Branch Head	CDRE Scott Lockey
Project Director	Mr Stuart Harwood
Project Manager	<b>CMDR</b> Darren Murphy