

## Project Data Summary Sheet<sup>140</sup>

Project Number	AIR 87 Phase 2
Project Name	ARMED RECONNAISSANCE HELICOPTER
First Year Reported in the MPR	2007-08
Capability Type	New
Acquisition Type	Australianised MOTS
Capability Manager	Chief of Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	\$1867.8m
2016–17 Budget	\$1.1m
Project Stage	Project Completion
Complexity	ACAT II



### Section 1 – Project Summary

#### 1.1 Project Description

This project was approved to provide a reconnaissance and fire support capability for the Australian Defence Force (ADF). The project has delivered 22 aircraft including an instrumented aircraft (permanently fitted with in-flight test instrumentation), a Full Flight and Mission Simulator, two Cockpit Procedures Trainers, Groundcrew Training Devices, Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities and ammunition.

#### 1.2 Current Status

##### Cost Performance

##### In-year

As at 30 June 2017, the Final Plan estimate of **\$1.1m** has been achieved.

##### Project Financial Assurance Statement

As at 30 June 2017, project AIR 87 Phase 2 **closed in April 2017**. The residual budget of **\$2.0m** allocated in Financial Year 2016/17 for the delivery of the Deployable Aircraft Maintenance Rig capability **was** transferred to sustainment and the remainder of the project's budget of \$163.0m (contingency and unallocated funds) returned. There is no requirement for project funds to address the treatment of the Final Operational Capability (FOC) caveats. Funding to address the caveats will be provided through sustainment or other means.

Tiger is probably the most technically complex rotary wing weapon system in the ADF inventory and, though direct comparison with other aircraft types is difficult, it remains relatively expensive to operate. A range of sustainment improvements implemented in 2015 are driving Tiger cost of ownership down, with an average cost of \$29,874 per flying hour in Financial Year 2015-16 compared to \$39,825 in Financial Year 2013-14 and a target of approximately \$27,000 in Financial Year 2017-18. **The cost per flying hour achieved in Financial Year 2016/17 was \$28,096 (see note).**

##### Contingency Statement

The project has not applied contingency in the financial year.

##### Schedule Performance

The Final Materiel Release (FMR) Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats, (20 months behind schedule).

FOC was declared in April 2016 (82 months behind schedule) by the Chief of Army with **the** caveats (detailed below).

#### 140 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

As at 30 June 2017, all 22 ARH have been accepted by the Commonwealth in the Initial Operational Test and Evaluation Readiness configuration; five are being used for training, one of which is also being used to support test activities; and 17 are being used to raise, train and sustain the operational squadrons in Darwin in order to maintain directed levels of capability. All three simulators have been accepted and are being used for aircrew training in Oakey and Darwin.

The rebaselined schedule included all planned engineering activities required to deliver a fully compliant ARH System. Full compliance, or Service Release, of all Engineering Change Proposals was achieved in May 2013.

Operational readiness of the delivered ARH capability is being progressed by Army. The Operational Capability (OC) 2 milestone, a deployable squadron, was granted by the Chief of Army on 11 July 2013. The OC3 milestone, a deployable squadron plus troop by land into a non-permissive environment, was granted by the Chief of Army on 2 December 2014.

Chief of Army declared FOC of the ARH capability in April 2016 with the following caveats:

- Electronic Warfare Self-Protection System – the system exhibits some deficiencies which will be rectified by industry by the end of 2016 at no cost to the Commonwealth. **The Electronic Warfare Self Protection now displays satisfactory performance, and the Caveat has been closed.** Caveat closed by Chief of Army in July 2017.
- Availability and Rate of Effort – Tiger availability is likely to plateau at 50% (four from eight aircraft per two squadrons), compared to the originally envisaged 75% (six from eight aircraft per two squadrons), with Tiger planned to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours (a mature Rate of Effort of 7147 hours per year was initially expected). In Financial Year 2015-16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014-15 and continues a positive trend up from 3,019 hours achieved in Financial Year 2013-14. Defence and industry are continuing to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort. **As at 30 June 2017, Tiger flew 3,971.8 hours against the Capability Manager's plan of 4,800 hours for Financial Year 2016/17.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Identification Friend or Foe System – the system was experiencing technical issues which have been rectified. **All systems are serviceable and all have been upgraded. Caveat closed by Chief of Army in July 2017.**
- Communication and mission planning – limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite. Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms, funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project, with resolution planned to be achieved by 2019.
- Missiles – AGM-114M Hellfire missiles are no longer being manufactured. Sufficient stocks are available in the short term. Defence and industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. **All integration testing of the AGM-114R missile has been completed. Service Release is on track to be achieved in Quarter four 2017.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Ammunition – limited stocks are available. Additional stocks have been procured **and delivered.**
- Spare parts and consumables – supply constraints on breakdown spares and consumables. Demand satisfaction rates for breakdown spares and consumables **and repairable items continues to vary around the contracted target of 90%. Current performance for quarter four Financial Year 2016-17 is 93.4% and 79.2% respectively.** This issue **continues to be** managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
- Class IX Fly Away Kits – each kit is designed to support a troop-level deployment in a field environment for 14 days. The original spares to support the Fly Away Kits required by Army have been delivered. Additional kits may need to be procured if more than one squadron was to be deployed.
- Support – Defence and industry engineering capacity is constrained with the potential to affect capability. Defence and industry are closely managing Tiger engineering priorities. This issue **continues to be** managed by the Tiger sustainment organisation.

Commitment from Industry

Following agreement in August 2014 to principles relating to Rate of Effort, cost of ownership, rapid targeted action, transparency and partnership, which were confirmed in the Viability Review Deed of December 2014, Airbus Group Australia Pacific, its parent company Airbus Helicopters, and the industry partners supporting the Tiger Armed Reconnaissance Helicopter have remained positively engaged in addressing issues with the ARH capability.

### Note

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

**The cost per flying hour presented in this MPR does not include system upgrade costs and therefore does not reflect the total investment into Tiger as per the Portfolio Budget Statements.**

## 1.3 Project Context

### Background

The project received Government approval in March 1999 to replace the Army's aerial reconnaissance and fire support capability, which was based on the 1960s technology Bell Kiowa and Iroquois helicopters. The project's acquisition strategy specified substantial Australian Industry Involvement and, in December 2001, the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support (TLS) programs.

The first four aircraft were manufactured and assembled in France and the remaining 18 aircraft were manufactured in France and assembled in Brisbane. One ARH is fitted with flight test instruments to assist the test and evaluation of ARH capability upgrades.

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<p>The training system relies heavily on simulation devices using the Full Flight and Mission Simulator and Cockpit Procedures Trainers which were built in France, then shipped to Australia. The Full Flight and Mission Simulator and one Cockpit Procedures Trainer are installed at Oakey (Queensland); the second Cockpit Procedures Trainer is installed at Darwin (Northern Territory).</p> <p>The project experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was originally contracted for June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the TLS Contract.</p> <p>Delays resulted in insufficient numbers of aircraft, training devices and logistics support in service to enable the required training outcomes.</p> <p>Airbus Group Australia Pacific (formerly Australian Aerospace) served a notice of dispute in October 2007 and the parties entered into a formal Dispute Resolution process over issues affecting both the Acquisition and TLS contracts. The dispute resolution process resulted in both parties signing a Deed of Agreement in April 2008 which established a revised Acquisition Contract Price and Delivery Schedule, a revised TLS Contract pricing structure that transitioned it to a Performance Based Contract, and established networks for work done by third-party support subcontractors. The re-plan included integration of a program necessary to retrofit all ARH to the final configuration where all mission systems are certified for employment by Army crews (known as the retrofit program). Partial payments to Airbus Group Australia Pacific on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the Contract Change Proposals (CCP).</p> <p>Changes to the Acquisition Contract arising from the signing of the Deed of Agreement were agreed between the parties in February 2009, with full payment recommencing from this date.</p> <p>The commensurate major documentation amendment through a CCP was approved in May 2009, and the Contract Amendment was issued in June 2009.</p> <p>Inadequate contractor supply and maintenance support networks and slow resolution of technical issues continued to affect the growth of the ARH capability. Flying Rate of Effort and aircraft availability remained below expectations, posing a risk to FOC. A Viability Review Deed of Agreement was signed between Airbus Group Australia Pacific and the Commonwealth in December 2014 which introduced a more rigorous performance based contract to reduce the cost per flying hour by almost half by Financial Year 2016-17.</p>
<p><b>Uniqueness</b></p> <p>The Australian Tiger ARH design is based on the Eurocopter French and German Tiger helicopters. The ARH design varies from the French and German designs through changes made to the following systems:</p> <ul style="list-style-type: none"> <li>• Secure radio communication systems;</li> <li>• Digital Map System;</li> <li>• Integration of the Hellfire Missile weapon system;</li> <li>• 70mm rocket modifications;</li> <li>• Storage Bay and Digital Video Recorder;</li> <li>• Roof Mounted Sight multi-target tracking system; and</li> <li>• Helmet Mounted Sight and Displays in both cockpits.</li> </ul> <p>The ADF's Airworthiness certification of the ARH Tiger aircraft relies on the French Airworthiness certification process undertaken by the French acquisition agency (Direction Générale de l'Armement). The ADF's Director General Technical Airworthiness recognises the French acquisition agency as a competent certification agency, and subsequently accepts the French acquisition agency certification of common Tiger systems used in the Australian ARH Tiger. In doing so, the French acquisition agency certification of the French aircraft became an integral part of the ADF's ARH certification plan. Consequently, delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program resulted in the contractor failing to achieve the original contracted IOC critical milestone.</p>
<p><b>Major Risks and Issues</b></p> <p>All major risks identified in the 2013-14 Major Projects Report have been retired from an Acquisition perspective and AIR 87 Phase 2 project closure activities <b>have been completed</b>.</p> <p>The caveats, <b>associated with the declaration of FOC by the Chief of Army in April 2016</b>, are being managed by the Tiger sustainment organisation. The resolution of these caveats, and additional operational and sustainment issues pertaining to amphibious operations and LHD integration, workforce and obsolescence, is addressed in detail under Section 5.2 below.</p>
<p><b>Other Current Sub-Projects</b></p> <p><b>AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS):</b> HATS will be an important link in the training continuum for inductees to the ARH training system.</p>
<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>			
Mar 99	Original Approved	1,584.0	
Oct 02	Real Variation – Transfer	(18.2)	1
Dec 03	Real Variation – Transfer	(59.1)	2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)	3
Sep 04	Real Variation – Transfer	(3.0)	4
Jun 05	Real Variation – Transfer	(4.0)	5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)	6
		(91.0)	
Jul 10	Price Indexation	418.2	7
Apr 17	Exchange Variation	121.5	
May 17	Real Variation – Project Closure	(165.0)	8
Jun 17	<b>Total Budget</b>	<b>1,867.8</b>	8
<b>Project Expenditure</b>			
Prior to Jul 16	Contract Expenditure – Airbus Group Australia Pacific	(1,710.3)	9
	Other Contract Payments / Internal Expenses	(156.4)	10
		(1,866.7)	
FY to Jun 17	Other Contract Payments / Internal Expenses	(1.0)	11
		(1.0)	
Jun 17	<b>Total Expenditure</b>	<b>(1,867.8)</b>	
Jun 17	<b>Remaining Budget</b>	<b>0.0</b>	8
<b>Notes</b>			
1	Transfer to the then Defence Support Group (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.		
2	Transfer to the then DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.		
3	Administrative Savings harvest.		
4	Transfer to the then Defence Science and Technology Organisation (now Defence Science and Technology Group) to fund studies in support of ARH.		
5	Transfer to the then DSG to fund AIR 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.		
6	Skillings Australia's Defence Industry harvest.		
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$414.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$3.3m having been applied to the remaining life of the project.		
8	<b>The remaining Budget was reduced to zero with \$165.0m returned to program as a result of project closure; this includes the \$2.0m transfer to sustainment for the delivery of the Deployable Aircraft Maintenance Rig capability.</b>		
9	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals and Indefinite Quantity tasks performed in Acquisition		
10	Other expenditure comprises: operating expenditure, External Service Providers, Foreign Military Sales, research and development costs and other capital expenditure not attributable to the aforementioned contract, minor contract expenditure and discounts on upgrades to Ground Mission Equipment received as liquidated damages.		
11	Other expenditure includes <b>\$1.1m for</b> the costs associated with the delivery of the Deployable Aircraft Maintenance Rig capability.		

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## 2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
3.3	3.2	1.1	PBS – PAES: The variance is due to cost savings. PAES – Final Plan: The variance is largely due to the transfer of \$2.0m to sustainment for the Deployable Aircraft Maintenance Rig.
Variance \$m	(0.1)	(2.1)	Total Variance (\$m): (2.2)
Variance %	(3.4)	(65.6)	Total Variance (%): (66.8)

## 2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
1.1	1.0	(0.0)	Australian Industry	Nil.
			Foreign Industry	
			Early Processes	
			Defence Processes	
			Foreign Government	
			Negotiations/Payments	
			Cost Saving	
			Effort in Support of Operations	
			Additional Government Approvals	
		(0.0)	Total Variance	
		(0.0)	% Variance	

## 2.3 Details of Project Major Contracts

2.10 Details of Project Major Contracts						
Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 17 \$m			
Airbus Group Australia Pacific	Dec 01	1,139.9	1,710.3	Variable	SMART 2000	1, 2
Notes						
1	Increase in price is due to updates for Price and Exchange over the life of the project as well as the approval of Contract Change Proposals. A Deed of Closure to the Airbus Group Australia Pacific Prime Contract was signed on 28 May 2013.					
2	Contract value as at 30 June 2017 is based on actual expenditure to 30 June 2017 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).					
Contractor	Quantities as at		Scope	Notes		
	Signature	30 Jun 17				
Airbus Group Australia Pacific	22	22	Tiger Armed Reconnaissance Helicopter			
Major equipment received and quantities to 30 Jun 17						
22 aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements have been established.						

## 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	ARH System	Mar 02	N/A	Feb 03	11	1
	Aircrew Training Devices	Jun 02	N/A	Feb 03	8	2
System Design	ARH System	Jun 02	N/A	Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03	N/A	Apr 03	1	1
	Aircrew Training Devices	Apr 03	N/A	Jul 03	3	2
Preliminary Design	ARH Tiger	Oct 02	N/A	May 03	7	3
	Aircrew Training Devices	Mar 03	N/A	Oct 04	19	2
Critical Design	ARH Tiger	Mar 03	N/A	Jul 04	16	4
	Aircrew Training Devices	Sep 03	N/A	Jun 05	21	2
Notes						
1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The project's ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.					

2	The Full Flight and Mission Simulator required customisation to both the visual system and the motion systems following contract signature in order to account for capability deficiencies associated with the proposed simulator design. A major cause of the delay in delivering training devices can be attributed to the efficacy with which the software provided from the aircraft manufacturer's test program was being managed to produce a high fidelity simulator.
3	As the ARH is a variant of the French and German Tiger helicopters, the ADF Technical Airworthiness Authority planned to utilise the existing certification work undertaken by the French acquisition agency (Direction Générale de l'Armement). Delays experienced directly impacted on design and development and the Australian Military Type certification achievement.
4	The maturity of the ARH design has required ongoing engineering changes to the approved ARH product baseline presented to the Airworthiness Board at the In Service Date. As a result, subsequent flight testing was required to confirm contract compliance and operational acceptance of incorporated design changes to enable removal of Australian Military Type Certificate and Service Release limitations.

### 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	Full Flight and Mission Simulator Contractor In-plant	Jul 04	N/A	Oct 07	39	1
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04	N/A	Jun 08	47	1
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04	N/A	Dec 08	53	1
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04	N/A	Jun 05	8	1
	Australian Military Type Certificate	Jun 05	N/A	Oct 05	4	1
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05	N/A	Nov 07	33	1
	Full Flight and Mission Simulator (Full Training capability)	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Oakey	Feb 05	N/A	Nov 09	57	1
	Cockpit Procedures Trainer Darwin	Feb 05	N/A	Feb 10	60	1
	Acceptance					
	ARH #11	Jul 06	N/A	Apr 08	21	1
	ARH #22	Apr 08	N/A	Nov 11	43	1, 2
Notes						
1	The difference between the Original Planned and Achieved dates is due to contractor delays in delivering conforming supplies.					
2	The acceptance of the 22nd production ARH was contracted for July 2011. The milestone was achieved on 25 November 2011. Note: Production aircraft (#22) is the 22nd aircraft accepted by the Commonwealth which is not to be confused with the milestone for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration under the Acquisition Contract. The 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration was achieved on 14 December 2012 following the delivery of A38-002 from retrofit.					

### 3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	N/A	Sep 09	N/A	
Initial Operational Capability (IOC)	Jun 07	Apr 10	34	1
Final Materiel Release (FMR)	Jul 12	Mar 14	20	2
Final Operational Capability (FOC)	Jun 09	Apr 16	82	3
Notes				
1	Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010 with the variance primarily due to contractual delays.			
2	No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the project AIR 87 Phase 2 Materiel Acquisition Agreement. Delays in the achievement of the Final Acceptance Milestone under the contract with Airbus Group			

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	Australia Pacific, delays in the formal transition of capability components to the respective in-service management agencies and the time taken to get all stakeholders to sign off on the FMR Approval Certificate contributed to the delay in achieving FMR. The FMR Approval Certificate was signed by all stakeholders on 19 March 2014, with Army caveats that are being managed by the Tiger sustainment organisation.
3	<p>Previously, as a result of the reduction in flying Rate of Effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships, Army amended it's Acceptance into Operational Service Plan, to reflect the associated training delays. Consequently, Chief of Army advised that the previously anticipated achievement date of December 2012 would not be met, and that a date of January 2016 was planned.</p> <p>Chief of Army has since advised that FOC has not been delayed by a new requirement to conduct amphibious operations but that the delay was solely due to the reduced Rate of Effort of the aircraft.</p> <p>The FOC milestone, full regiment (16 aircraft) by land into a medium threat, non-permissive environment, was progressed to plan with Chief of Army granting the OC2 milestone, a deployable squadron (eight aircraft), on 11 July 2013 and the OC3 milestone, a deployable squadron plus troop (11 aircraft) by land into a non-permissive environment, on 2 December 2014. On 14 April 2016, Chief of Army advised the Minister that he had declared FOC of the ARH capability with the caveats, as detailed at Section 1.2 Materiel Capability Delivery Performance and Section 5.2 Major Project Issues.</p> <ul style="list-style-type: none"><li>• Electronic Warfare Self-Protection System – <b>remediated and closed</b></li><li>• Availability and Rate of Effort – <b>ongoing management</b></li><li>• Identification Friend or Foe System (Mode 4) – <b>remediated and closed</b></li><li>• Communication and mission planning – <b>partially remediated with ongoing management</b></li><li>• Missiles – <b>ongoing management</b></li><li>• Ammunition – <b>partially remediated and ongoing management</b></li><li>• Spare parts and consumables – <b>ongoing management</b></li><li>• Class IX Fly Away Kits – <b>ongoing management</b></li><li>• Support – <b>ongoing management.</b></li></ul>

**Schedule Status at 30 June 2017**

The Gantt chart displays the timeline for three key milestones. The x-axis represents time from June 1998 to June 2017. The y-axis lists the milestones. The legend indicates the following milestones: Approval (grey), IMR (blue), IOC (green), FMR (orange), and FOC (red).

Milestone	Approval	IMR	IOC	FMR	FOC
Schedule Plan at Government Approval	Jun-98 to Jun-07				
IMR/FMR introduced in FY 2010-11	Jun-98 to Jun-10				
Schedule Plan at 30 June 2016	Jun-98 to Jun-09				

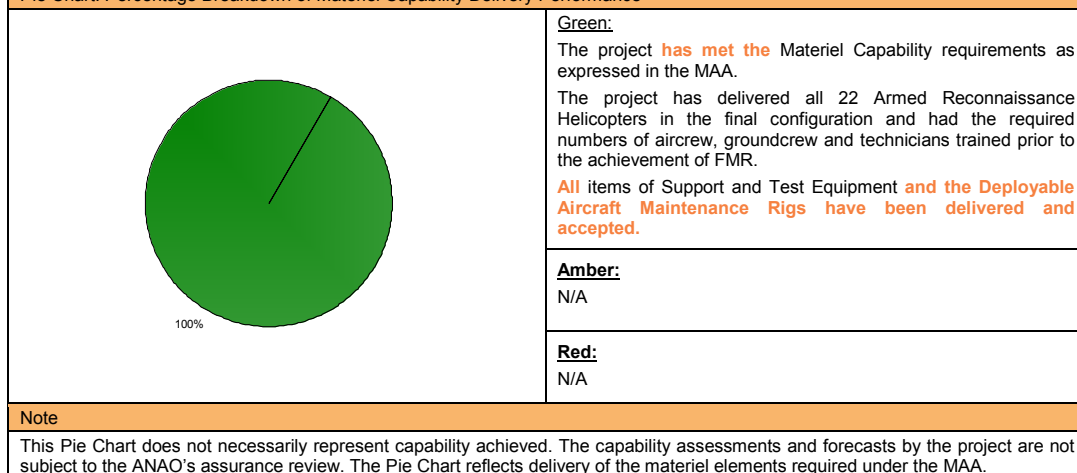
#### Note

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



### 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>Three ARH in the Initial Operational Test and Evaluation Readiness configuration;</li> <li>Aircraft Availability and Reliability parameters met;</li> <li>Initial Integrated Logistic Support elements in place to support three ARH flying an annual Rate of Effort of 325 airframe hours/ARH; and</li> <li>Trained aircrew, groundcrew, and technicians.</li> </ul>	Achieved
Final Materiel Release (FMR)	<ul style="list-style-type: none"> <li>Remaining 19 ARH (22 in total) in the Initial Operational Test and Evaluation Readiness configuration delivered;</li> <li>Aircraft Availability and Reliability parameters met;</li> <li>All Initial Integrated Logistic Support elements in place to support remaining 19 ARH (22 in total) flying an average annual Rate of Effort of 325 airframe hours/ARH.</li> <li>Trained aircrew, groundcrew, and technicians; and</li> <li>Additional requirements as endorsed by Capability Development Group as being in scope of the project delivered.</li> <li>FMR was agreed achieved provided the following Army caveats are addressed: <ul style="list-style-type: none"> <li>Rate of Effort Generation;</li> <li>Groundcrew Training Devices;</li> <li>Electronic Warfare System; and</li> <li>Cost of Ownership.</li> </ul> </li> </ul>	Achieved with caveats

## Section 5 – Major Risks and Issues

### 5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2016-17)	
Description	Remedial Action
N/A	N/A

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## 5.2 Major Project Issues

Description	Remedial Action
The Electronic Warfare System fitted to the ARH is not performing to specification during specific aircraft manoeuvres.	Industry rectified the Electronic Warfare System performance issue at no cost to the Commonwealth however, emergent technical issues in system performance were discovered during ground testing in late 2015. Industry <b>corrected</b> the software regression at no cost to the Commonwealth. <b>Outstanding deficiencies have been resolved, however EW development is an ongoing process and therefore this issue continues to be managed by the Tiger sustainment organisation.</b>
Cost of Ownership. In Financial Year 2013-14 the cost of sustaining the ARH Capability in exchange for flying hours represented a very poor return on investment for Army, equating to approximately \$40,000 per flying hour. Army required adjustment to the sustainment contract to ensure value for money.	Following signature of the Viability Review Deed in December 2014, a range of sustainment improvements have been, and continue to be, implemented to drive down the cost of ownership for Tiger. The cost per flying hour was reduced to \$29,874 in Financial Year 2015/16 with a target of approximately \$27,000 in Financial Year 2016/17. <b>The cost per flying hour achieved in Financial Year 2016/17 was \$28,096.</b> This figure includes Integrated Logistic Management Services (including Engineering, Maintenance Management, Supply Support and Technical Services), ARH Fleet Deeper Maintenance Services, Aircrew and Maintainer Training, Flight Simulators and Maintenance Training Systems Support Services, Software Support Services, Instrumented ARH Capability Operations and Support Services, and Management and Administration provided by the contractor in support of the ARH Capability. Industry remains positively engaged in addressing this issue in accordance with the principles contained within the Viability Review Deed. This issue <b>continues to be</b> managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Availability and Rate of Effort. A minimum of six from eight aircraft available in each of Army's 161 and 162 squadrons was envisaged. Tiger availability is likely to plateau at 50% (four from eight aircraft per two squadrons) A mature Rate of Effort of 7,147 hours per year was initially expected. Defence is now planning to fly 4,800 hours during Financial Year 2016-17 with the mature Rate of Effort unlikely to exceed 5,300 hours per year.	In Financial Year 2015/16, Tiger achieved an annual Rate of Effort of 3,996 hours. This is an increase of 8.6% on the 3,678 achieved in Financial Year 2014/15 and continues a positive trend up from 3019 hours in Financial Year 2013/14. <b>As at 30 June 2017, Tiger flew 3,971.8 hours against the Capability Manager's plan of 4,800 hours for Financial Year 2016/17.</b> Defence and industry continue to collaboratively identify ways to improve aircraft availability and achievement of Rate of Effort. This issue <b>continues to be</b> managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Identification Friend or Foe System. The system was experiencing technical issues.	These issues have now been rectified. <b>All systems are serviceable and all have been upgraded.</b>
Communication and mission planning. Limitations exist with the voice and data communications systems and the Ground Mission Equipment mission planning suite.	Radio obsolescence replacement and a new Common Mission Management System is being developed to support both the Tiger and Taipan platforms with resolution planned to be achieved by 2019. This issue <b>continues to be</b> managed by the Tiger sustainment organisation and is being funded by the AIR 9000 Ph2/4/6 Multi-Role Helicopter (Taipan) Project.
Missiles. AGM-114M Hellfire missiles are no longer being manufactured.	Sufficient stocks are available in the short term. Defence and Industry are undertaking the engineering effort to certify the replacement AGM-114R missile for use on Tiger. <b>All integration testing of the AGM-114R missile has been completed. Service Release is on track to be achieved in Quarter four 2017.</b> This issue <b>continues to be</b> managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.
Ammunition. Limited stocks are available.	Additional stocks have been <b>delivered.</b>
Spare parts and consumables. Supply constraints on breakdown spares and consumables.	Demand satisfaction rates for breakdown spares and consumables <b>and repairable items varies around the contracted target of 90%. Current performance for quarter four Financial Year 2016-17 is 93.4% and 79.2% respectively.</b> This issue <b>continues to be</b> managed by the Tiger sustainment organisation and is funded within the approved sustainment budget.

Class IX Fly Away Kits. Each kit is designed to support a troop-level deployment in a field environment for 14 days. Defence currently has limited stocks.	The original spares to support the Fly Away Kits required by Army have been delivered. Additional kits may need to be procured if more than one squadron was to be deployed.
Support. Defence and Industry engineering capacity is constrained with the potential to affect capability.	Defence and Industry are closely managing Tiger engineering priorities. This issue <b>continues to be</b> managed by the Tiger sustainment organisation.
Workforce. Army has experienced issues training and retaining sufficient Ground Crewman Aircraft Support and Ground Crewman Mission Support personnel as well as key aviation technical trades, and achieving the required aircrew training progression as a result of inadequate aircraft availability and Rate of Effort. The Tiger sustainment organisation has also experienced issues with staff turnover and retention.	Army <b>continues to</b> actively <b>manage</b> these workforce issues as part of the broader ARH capability considerations by the Tiger Weapon System Review Committee. Additionally, staggered posting cycles are being maintained for key military positions within the Tiger sustainment organisation. The issue of aircraft availability and Rate of Effort, which is impacting aircrew training progression, is addressed previously within this section.
Amphibious operations and LHD integration. While not an acceptance criteria for FOC, Army requires the ARH Tiger to be capable of conducting amphibious operations from Navy's LHD ships. This requirement has not yet been satisfied.	Tiger First of Class Flight Trails are due to be complete in the second half of 2018.
Obsolescence. Army has been operating the ARH Tiger since 2004. As with all major systems with a protracted life of type, a number of significant components require replacement in order to address obsolescence and supportability issues. The number and complexity of these issues are beyond the financial scope of treatment available through sustainment.	Army is working closely with Airbus Group Australia Pacific to identify and rectify Tiger obsolescence issues. In the short term, materiel obsolescence management is incorporated under the current Tiger sustainment contract through to <b>2020</b> . Longer term, and more significant capability obsolescence issues, will be addressed under the Armed Reconnaissance Helicopter Capability Assurance Program.
<b>Note</b>	
Major risks and issues in Section 5 are excluded from the scope of the review.	

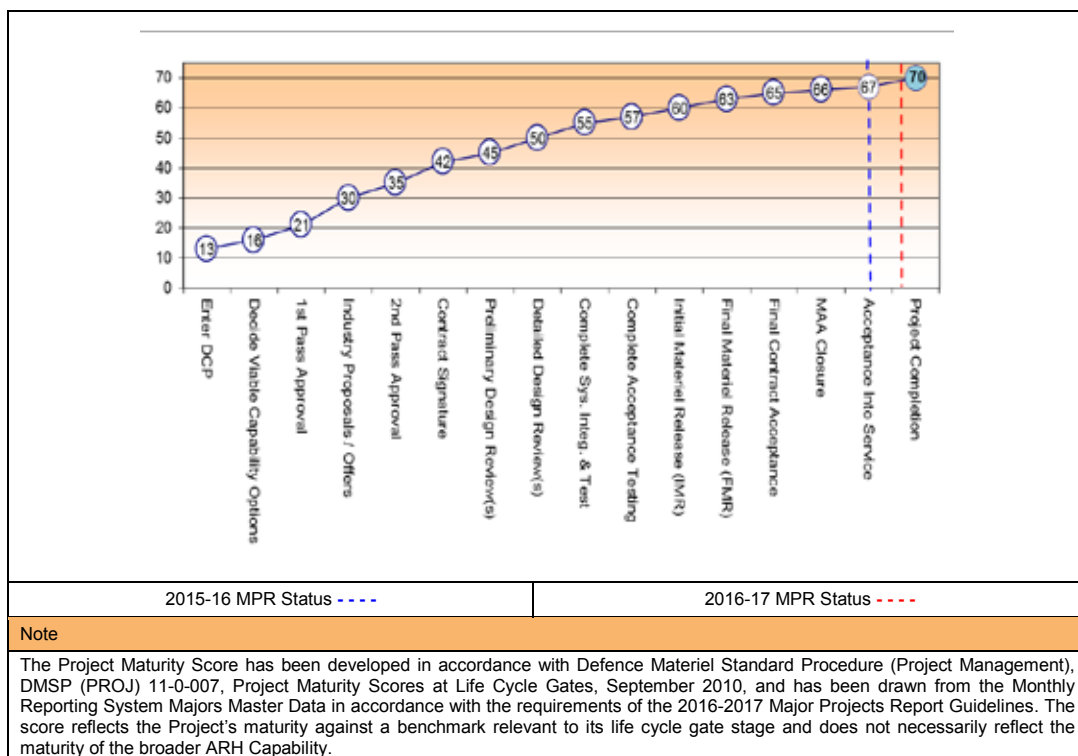
## Section 6 – Project Maturity

### 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	10	<b>10</b>	10	10	10	<b>10</b>	<b>10</b>	<b>70</b>
<b>Project Completion</b>	Project Status	10	<b>10</b>	10	10	10	9	<b>10</b>	<b>69</b>
	Explanation	<b>Cost – Project costs have been reconciled and project financial closure achieved.</b> <b>Commercial – contractor's performance would not merit their consideration as a preferred supplier for future similar requirements however, there is a good basis for confidence that the contractor's in-service support performance will be satisfactory.</b> <b>Operations and Support – materiel and support systems are fully operational.</b>							

## Project Data Summary Sheets

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## Section 7 – Lessons Learned

### 7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Aircraft still undergoing development by their parent Defence force or Original Equipment Manufacturer should not be classed as off-the-shelf.	Off-The-Shelf Equipment
Delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This has caused schedule slip in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve the IOC critical milestone on schedule.	Off-The-Shelf Equipment
Resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute.	Contract Management
Use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.	Resourcing Contract Management
The AIR 87 TLS Contract needs constant management by experienced contract management staff with ready access to legal support. The Commonwealth must challenge the contractor on performance and must not enter into contract change discussions with the contractor where the Commonwealth will not receive value for money for the contracted services.	Contract Management
In respect of the out-sourced Systems Program Office core functions, the notion that the Commonwealth can optimise resource availability by outsourcing activities needs to be challenged. This value for money hypothesis is flawed.	Resourcing Contract Management
Better arrangements should be put in place to ensure that appropriate consultations occur before the Commonwealth enters into similar contracts with the same contractor. AIR 9000 did not consult AIR 87 to any significant extent before signing the Multi-Role Helicopter Sustainment Contract and over time this contract has proven to be similarly flawed.	Contract Management
Defence needs to re-evaluate its policy in relation to the use of 'cost-plus' contracts. A cost-plus contract for the initial years of the AIR 87 TLS Contract would have ensured effective performance parameters could be set for a more robust mature-state stage of the contract.	Contract Management

The Commonwealth must seek adequate evidence from the Contractor that its sustainment arrangements with its suppliers/subcontractors are in place and effective and that any provisions contained in the head contract have been adequately flowed down into any subcontracts. Demonstration should be linked to sustainment contract signature or as an entry obligation to the achievement of In-Service Date.	Contract Management
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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	BRIG Anthony McWatters (to Apr 17) BRIG Jeremy King (Apr 17–current)
Project Director	COL Michael Millar
Project Manager	Mr Cliff Meyer

## Project Data Summary Sheets

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