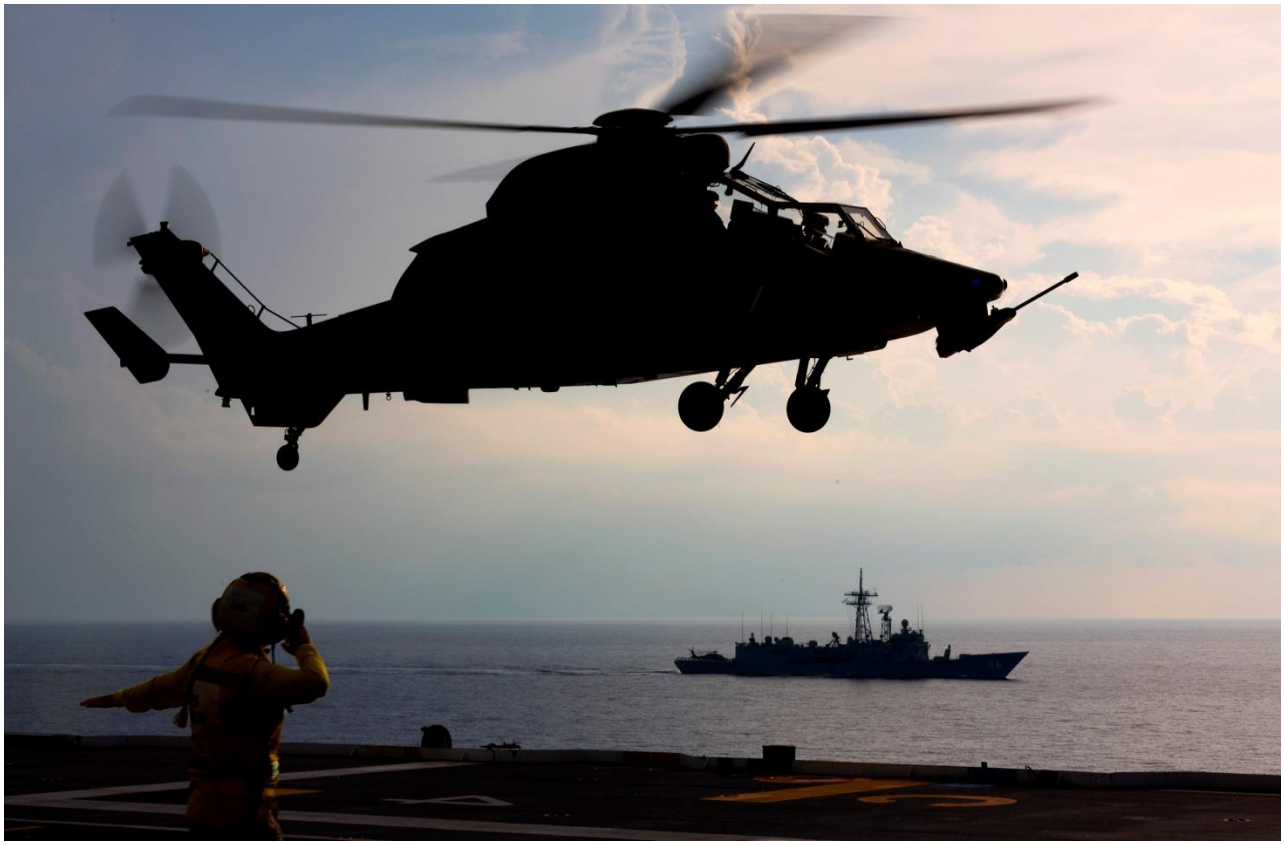

Australian Army ARH Tiger: Into the Future

Airbus Responds

ARH Tiger

Pathways to Next Generation Rotary Aircraft

Example NGR

Pathway 1
Retain Tiger

ARH Tiger ROAR – Under AUD 1 Billion

Flexibility to join FARA at most convenient time

Future Attack Reconnaissance Aircraft (FARA)

Prototype Development 2 x OEM

Manufacture & Development 1 x OEM

Full Rate Production/Operational Capability

2023

2028

Return on Investment required

Pathway 2
Replace Tiger

ARH Tiger

ARH Tiger Replacement – AUD 4 to 5 Billion

IOC 2025

FOC 2028

2020 2025 2030 2035 2040 2045

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Ref: MD-OUT-2020_04

Mr Mickey Michaelis
Secretary
Royal United Services Institute
PO Box 7912
Canberra BC ACT 2610

20 March 2020

Dear Mr Michaelis,

I would like to thank you and the Royal United Services Institute for Defence and Security Studies - Australia's (RUSIDSS) contribution to fostering thought provoking analysis of contemporary issues impacting on Australia's security. The aspiration of RUSIDSS to provide, "professional and balanced informed debate to improve public awareness and understanding of defence and national security" is indeed admirable and important in these times where the quality of public debate and information is often questionable. It is in this context that I write to you in regard to the recently released RUSIDSS paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program" that many readers may rely on in formulating their views on this important program. Without being exhaustive, I wish to bring to your attention a number statements and propositions within the Paper that are either misleading in their generalisation, erroneous or inflammatory.

I draw your attention to the Paper's opening paragraph:

> *"There is already strong belief within Defence Industry that findings of the ARH ANAO Performance Audit Report may have sealed the fate of Tiger[1]"*

Despite providing no evidence to support the claim, the author clearly sets the tone of the Paper in favour of the US DoD alternatives.

In the follow-on general description of the three aircraft under consideration, the author indicates that the Australian Tiger variant has been, *"Australianised"* and that that it has:

> *"made one recent, albeit minor LHD deployment outside Australia, but has yet to see combat much less deploy outside Australia for any length of time[2]".*

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[1] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p1
[2] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p2

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This statement leaves the false impression that Tiger is operationally unproven. Notwithstanding the Government's longstanding preference to deploy Chinook heavy lift helicopters on overseas operations, the Australian Tiger has been capable of operational deployment for many years. The French Army Aviation (ALAT) first deployed its Tiger helicopters to Kabul, Afghanistan in July 2009 in support of French and coalition forces. Embedded within US Army aviation units, Tiger operated alongside and flew the same missions as Apache. The aircraft were withdrawn from Afghanistan in 2013 and subsequently deployed to combat operations in Libya and the Central African Republic, in the latter case operating for nearly five months from the French Navy's Mistral-class assault ship, FNS Tonnerre. The ALAT has deployed Tiger continuously in Mali in Sub-Sharan Africa since early 2013, operating in extreme environmental conditions and engaging in heavy fire fights with the Islamist Macina Liberation Front.

In contrast, the AH-1Z Viper is described as:

> *"a new design helicopter that is nearing completion of initial production for the US Marine Corps and beginning production for international customers".*

As you may be aware, the AH-1Z Viper was offered in much its current form to the Australian Government over 20 years ago for the AIR 87 program. It is far from a *"new design helicopter"* and is nearing the end of its production run for the USMC. Despite active marketing over the past two decades, only small numbers of aircraft have been sold to Bahrain and the Czech Republic.

In the notes to the aircraft comparison, the author makes the statement:

> "*This figure [180 aircraft produced] refers to a baseline version of the Eurocopter Tiger (EC655) – several modifications to the baseline configuration have been made to the ADF fleet of 22 aircraft that has resulted in a divergent "orphaned" configuration.*[3]*"*

Regrettably, the author chooses to use terminology which implies that the ARH Tiger is vastly different from its European variants. This is not the case. The Australian Defence Force (ADF) modifies all of its US and European helicopters so that they are capable of operating effectively with the force in being. This is normal practice. As an example, the mission management systems of both the Apache and Viper would need to me modified (*Australianised)* so that they integrate with Army's Battlefield Management System (BMS). However, unlike many US products acquired through Foreign Military Sales (FMS), the Australian Tiger is fully supportable in Australia using Australian expertise and infrastructure, and will continue to be so under Project LAND 4503.

Following on, the author notes that, *"the ARH Tiger had 9 x FOC caveats*[4]*"*. While choosing not to mention the caveat status of competitor products, the statement fails to acknowledge that many of the caveats were against future ARH requirements rather than the original

[3] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p3 footnote

[4] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p4

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acquisition. The lack of context is misleading and unbalanced. Declared operationally capable in April 2016, the Tiger meets all contracted capability requirements and has evolved over time to reflect Army's contemporary needs. In March 2017, Senator Fawcett noted:

> *"We have had in this committee [Australian Senate Standing Committee on Foreign Affairs, Defence and Trade] and the joint committee's [Joint Standing Committee on Foreign Affairs, Defence and Trade] very good feedback from people about the performance of that weapons system [ARH Tiger] after Exercise Hamel and others.*[5]*"*

In May 2017, the Chief of Army stated:

> *"It [Tiger] is, as I said, a very capable aircraft. In an operational environment I would welcome seeing a Tiger above me in the air.*[6]*"*

In May 2017, the Commander of the School of Army Aviation was reported as saying:

> *"The Tiger aircraft is a potent weapon system that we have worked hard to mature to a point where it delivers the required effects on time and on target*[7]*".*

The Commander 16th Aviation Brigade was quoted in January 2018 as stating:

> *"We have seen historic levels of performance and reliability that place us squarely on par with peer global operators of this category of helicopter.*[8]*"*

The Director General Aviation, Army Headquarters was also quoted on the ARH capability:

> *"The Tiger now forms an integral part of the Army combined arms team. It provides highly sophisticated sighting systems, long range fires and an unequalled mobility on a modern battlefield.*[9]*"*

The Commander 16th Aviation Brigade reinforced his views in July 2018:

> *"… our Tigers now deliver reliability and performance that is the envy of the world. Proven reliability. Proven performance. No more conjecture. No more wishing. Its [sic] happening*[10]*"*

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[5] Senator David Fawcett, Senate Estimates, 1 March 2017, Hansard p 85

[6] Lieutenant General Angus Campbell, Senate Estimates, Foreign Affairs, Defence and Trade Legislation Committee, 30 May 2017

[7] Lieutenant Colonel David Lynch, "Aussie Tiger first to achieve 2k hours", Australian Defence Magazine, May 2017

[8] Brigadier Stephen Jobson, Australian Defence Magazine, January 2018

[9] Brigadier Scott Benbow, Australian Defence Magazine, January 2018

[10] Brigadier Stephen Jobson, LinkedIn post, "Tiger – Armed Reconnaissance. Attack. Escort. Land. Amphibious. Maritime. Air. Special Forces. Protecting and saving lives", 14 July 2018

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Consistent with these comments, the Government's 2018/19 Defence Portfolio Budget Statement noted that:

> *"The Tiger Armed Reconnaissance Helicopter is a credible, capable aerial attack and reconnaissance system that is currently employed on operations by key European nations.*[11]"

The author goes into considerable detail in regard to Mission System comparison making the observation that:

> *"The integration of an upgraded EGI for the ARH tiger should be considered as a significant risk,*
>
> - *History of integration issues with ARH avionics suite"*
> - *Access to US protected (M-Code) technology for integration on European designed aircraft can be difficult (there were major political and logistics issues originally getting SAASM chipsets installed in European EGI's)…*[12]"

The broad assertion that there is history of integration issues with the ARH avionics suite is incorrect. The existing ARH Mission system was delivered as contracted. To the extent that the Commonwealth's needs have matured over the years, Tiger's mission system has evolved to ensure the aircraft is able to operate effectively in the land and maritime environments and will continue to evolve to meet Defence's needs. Contrary to the author's assertions, Tiger's ATCRBS is comparable to Viper and Apache.

Further, there is no justification for asserting that there is a *"significant risk"* associated with access to US protected technology for European origin Australian operated platforms such as Tiger. Access occurs routinely via the Australian Government in full compliance with US export control regulations. In the case of Tiger, Australian expertise is used to integrate these capabilities ensuring that Australia builds and retains sovereign industrial capability.

While there are errors of fact throughout the discussion of the Weapons Systems, the author's lack of balance is clearly displayed in the following paragraphs:

> *"The Viper has UAS interoperability as planned upgrade due in 2022, which is in line with the delivery timeframe of the project and also allows for ADF design specific requirements to be incorporated prior to service release (low risk of fleet integration, lower design change cost if taken up early in the in the design phase)."*[13]
>
> *There has been no public mention of the ARH Tiger planning this upgrade. It is assumed it will be addressed in the RFI response, however the issue should be considered to be a in a similar risk category as yet to be confirmed integration and upgrade options*[14]"

[11] Portfolio Budget Statements 2018-19, Defence Portfolio, Appendix C, Table 65, p135
[12] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p6
[13] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p8
[14] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p8

The author apparently sees no inconsistency on the one hand lauding the benefits of the Viper "*ADF design specific requirements to be incorporated prior to service release"* and imputing risks associated with an Australian modified Tiger *"orphaned configuration".* It is notable that the author cites no public source reference verifying the Viper UAS upgrade while assuming that because a like modification on Tiger has not been openly discussed, it inherently carries risk.

Of relevance, and announced publically, in 2017 Airbus demonstrated Level of Interoperability (LOI) 5 Unmanned Aerial System (UAS) teaming between an Airbus H145 helicopter and a Schiebel S100 Camcopter; the former being offered by Airbus to satisfy Defence's Special Operations Light Helicopter requirements and the latter being trialled by the Royal Australian Navy. UAS interoperability is well understood by Airbus and is able to be incorporated into Tiger at low risk.

The author goes to significant lengths to extol the marinisation virtues of the Viper while discounting the marinisation features of the Tiger claiming:

> *"there are no specific marinisation design features that protect the [Tiger] airframes from extended exposure to corrosive environments like sea transport.*[15]*"*
>
> and,
>
> *"Both the ARH and Apache have extensive post-sea transport preventative maintenance procedures that must be conducted ASAP following exposure to sea going conditions*[16]*"*

Contrary to the authors' assertions, the ARH is designed to operate in a maritime environment. In 2019, four aircraft were embarked on an LHD for eight weeks as part of Task Force Indo Pacific Endeavour. Like the ALAT five month operational deployment from FNS Tonnerre, the aircraft performed extremely well. In comparison to the conventional metal structure of the Viper which dates back over four decades, the ARH Tiger has a modern composite non-corrosive fuselage ideally suited to operations in maritime environments. The aircraft has wheels rather than the Viper's skids to facilitate deck handling, tie down points for securing the aircraft in rough weather, a footprint that allows the aircraft to travel on the LHD rear elevator without blade fold enabling this action to be undertaken safely below deck, and standard safety features such as a jettisonable cockpit canopy. The author's claim that the ARH has extensive post-sea transport preventative maintenance is incorrect. There is no special maintenance following embarkation.

Perhaps nowhere in the Paper is the author's lack of balance more on display than the assertion that:

> *"If history is any indication, the likelihood of deploying within the vicinity of US coalition forces afloat or ashore in current and future conflicts is far higher than that of*

[15] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p 10

[16] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p10

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German, Spanish or French Forces, and their good will is yet to be tested in regards to aviation deployed support assistance.[17]"

In regard to interoperability, a moderate amount of research would have revealed that French Tigers and US Apaches worked seamlessly together on coalition operations in Afghanistan. There is no reason to think that the situation would have been any different for Australian forces operating Tiger with their US counterparts.

Inferring that European Forces will not support their coalition partners, in this case Australian Army Aviation, at best does the author no service and at worst is offensive to our close allies. This nonsensical argument is as misplaced in relation to LAND 4503 as it would be with recent critical capital equipment acquisition such as the German supplied Boxer Combat Reconnaissance Vehicles (CRVs), the French supplied Attack Class Submarines and the Spanish supplied Landing Helicopter Dock. While self-evident that the ADF will continue to work closely with US Forces in the future, interoperability does not mean that Australia needs to operate US equipment.

Turning to the ROM Cost assessment[18], the author has taken outdated acquisition and misleading support cost data to build a case that Tiger is the most expensive proposition, both in Acquisition and Support. Of particular concern, the author has extracted US DoD user cost reimbursement rates and compared these, on face value, to Tiger costs without standardising the basis of estimate. Simple cost comparisons using US Government data are misleading if the comparisons are not on like terms or against like capabilities. In the case of ARH Tiger, Airbus and its industry partners provide a broad range of through life support services under performance based contracting arrangements which, on the comparison platforms, are performed internally by US DoD personnel in US DoD facilities. As a consequence, the reported sustainment costs for these platforms do not include the equivalent full cost of labour and facilities. ARH Tiger cost reporting includes the outsourcing of System Program Office (SPO) activities managing engineering and logistics support, the management of the supply chain including domestic storage and distribution, industry ownership of stock until consumption, utilisation of industry facilities, delivery of aircrew and technician training, full maintenance and operation of flight simulators and full operational maintenance of the aircraft training fleet. In addition, Airbus maintains a sophisticated software support environment in Australia that generates software changes and major aircraft software releases.

In contrast, the often quoted US DoD Office of the Under Secretary of Defense Fixed Wing and Helicopter Reimbursement Rates approximate just the "Deeper Maintenance Labour" and "Spares and Repairs for all Maintenance Levels" cost components, being only a relatively small proportion of the activities and cost required to support a complex helicopter system. This equates to a globally competitive like-for-like cost comparison of approximately AUD 9,000 per flight hour for the ARH Tiger helicopter.

[17] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p11
[18] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", pp12-13

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The author may also wish to examine the support costs of the United Kingdom's Apache fleet, which are well in excess of ARH Tiger, to benchmark relative sustainment costs.

I turn now to the author's commentary on Program Complexities. After detailing issues associated with the original AIR 87 program where Government mandated that all offers be commercial rather than government to government and where successive ANO audits have found shortcomings in both Government and Industry management of the program, the author concludes:

> *"The upgrade program would most likely follow this complex performance and delivery pattern, requiring significant effort on behalf of Defence*[19]*"*

The author's deduction is wrong. The Tiger helicopter has been constantly evolving since its introduction into service and the program management protocols between the Australian Government, Airbus and the relevant National Airworthiness Authorities are mature and working well. Unlike introducing entirely new and complex capabilities into service, whether they be through FMS, commercial contract or a combination of both, the enhanced Tiger capability will leverage existing, tested, low risk weapon system management and airworthiness processes to deliver capabilities which require only incremental qualification.

The author goes into some detail to explain the benefits of selecting US products to support life cycle upgrades concluding:

".. it can be assumed that for the majority of Life Cycle Upgrades that the LAND4503 platform shall be facing, a US FMS supplied option will deliver these upgrades far sooner and at a significantly lower price than the European option.[20]*"*

The generality of the statements and conclusion are at odds with the facts. There is no history of the releaseability of US or European enhanced capabilities impacting negatively on system upgrades of the ARH Tiger. Export controlled US sourced equipment is routinely acquired either directly from commercial suppliers or as Government Furnished Equipment (GFE). While there is some integration effort required, the costs have not proven to be excessive. Counter intuitively, a relatively small fleet operator having sovereign in-country design capabilities can often modify and adapt its fleet far quicker than being dependent on foreign country decision makers that have their own priorities, not least of which is factoring in fleet roll out costs that can be orders of magnitude greater than an Australian fleet. The rapid modifications to the CH-47D Chinook helicopters to prepare for operations in Afghanistan is a case in point.

In concluding, I want to again recognise the important role that RUSIDSS plays in the national security discussion, but misinformed analysis and simplistic generalisations do little to promote the balanced and insightful debate required to ensure that Australia has the right Army Aviation capabilities over the coming decades. I draw your attention to the following public remarks from the Commander 16th Aviation Brigade that encapsulate the fundamental

[19] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p15
[20] RUSIDSS Paper, "Australian Defence Capability Analysis Project LAND 4503 - ARH Replacement Program", p17

flaw in the author's analysis in using outdated and erroneous information on the ARH Tiger capability as the basis for speculating on the future:

> *"What you have read and the way you think about Tiger is probably wrong now. Tiger is a world-class platform…It is no longer the weapons system that we acquired. It is now modernised with next generation weapons, digitised connectivity, revolutionary tactics with Unmanned Aerial Vehicles, and interoperability with the Royal Australian Navy, Royal Australian Air Force and our allies.*[21]*"*

Rather than simply compare the attributes of contender aircraft, a deeper analysis by RUSIDSS of the strategic considerations surrounding the LAND 4503 Program would perhaps be more constructive. There are profound issues that need to be examined prior to embarking on one course or another, such as the impact of LAND 4503 on Army's objective to adopt the next generation US Army Future Vertical Lift (FVL) rotorcraft. The Future Attack Reconnaissance Aircraft (FARA), a logical replacement for US and international conventional armed reconnaissance helicopters being developed within the FVL program is progressing quickly with an announced Initial Operating Capability in 2032; just five years after the planned LAND 4503 Full Operating Capability. Does it make sense to spend in excess of four billion dollars on replacing the ARH Tiger fleet with a like-for-like conventional helicopter and lock out for decades ahead the type of operational and Australian industry benefits realised through the F35 JSF program when an investment of less than one billion dollars on a modest upgrade to the current Tiger fleet will provide the strategic flexibility and financial means for a timely acquisition of a FARA step capability?

You are most welcome to meet with our senior leadership team or visit our Brisbane facilities to gain a better insight into the Tiger program, its challenges and achievements.

Yours sincerely,

Andrew Mathewson
Managing Director Airbus Australia Pacific
Airbus Head of Country Australia and New Zealand

[21] LinkedIn post 14 July 2018, "Tiger – Armed Reconnaissance. Attack. Escort. Land. Amphibious. Maritime. Air. Special Forces. Protecting and saving lives." Brigadier Stephen Jobson, Commander 16th Aviation Brigade