



Australian Government
Department of Defence

**Rural and Regional Affairs and Transport References
Committee Inquiry into the Regulatory Requirements that
Impact on the Safe Use of Remotely Piloted Aircraft Systems,
Unmanned Aerial Systems and Associated Systems**

**Department of Defence
Written Submission**

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Executive Summary

Australia has two Aviation Regulators: the Civil Aviation Safety Authority and the Department of Defence. Within the Department of Defence, the Chief of Air Force, on behalf of the Chief of the Defence Force, regulates Defence aviation activities as the Defence Aviation Authority.

Defence maintains a set of Airworthiness regulations as part of the Defence Aviation Safety program, managed by the Defence Aviation Safety Authority.

Defence regulates the entire spectrum of Defence Aviation, across all three Services and all aspects of aviation, including unmanned systems. This regulation is done in such a way as to ensure the same level of safety to operators and third parties as would be the case for a manned aircraft.

Defence will seek to maximise the operational flexibility available to all our platforms, whilst also ensuring Defence complies with local, domestic and international laws. Defence will also seek to ensure that civil regulations do not unnecessarily impede upon Defence's ability to operate unmanned aerial systems if and when required, and do not compromise Defence capabilities.

Introduction

Whilst Defence is an aviation regulator in its own right, the development of local and domestic regulations to support the safe operation of unmanned aircraft systems (UAS) may have an impact on the ability of Defence to operate effectively and safely.

Background

Defence has employed unmanned aircraft system since the 1940s in roles including aerial targets and intelligence, surveillance and reconnaissance. The Army has employed a number of systems operationally in Afghanistan and the Royal Australian Air Force employed the Heron UAS in Afghanistan from 2010 to 2014. Currently all three Services own / lease / operate systems ranging in size from the Black Hornet weighing 18 grams, to the Heron UAS weighing approximately 1,000 kilograms.

The Defence White Paper 2016 detailed the further procurement of unmanned systems for all three Services. This included the requirement for an unmanned Armed Medium Altitude Long Endurance aircraft to support overland intelligence, surveillance and reconnaissance.

Regulations

Defence is an aviation regulator in its own right, and is required to regulate Defence aviation activities in such a way as to provide an aviation capability to support the defence of Australia. At the same time, Defence is required to comply the Workplace Health and Safety regulations relating to risks to people exposed to activities being undertaken by Defence. Defence will ensure that the use of Defence unmanned aircraft systems will not result in greater risk to the general public or other third parties, as that posed by manned aircraft systems.

The Chief of Air Force is the Defence Aviation Authority, and regulates Defence aviation activities on behalf of the Chief of the Defence Force. The Chief of Air Force exercises this authority through the Defence Aviation Safety Program and the Defence Aviation Safety Regulations. The Defence Aviation Safety Program is administrated through the Defence Aviation Safety Authority, made up of: Director General Technical Airworthiness, Director Airworthiness Co-ordination and Policy Agency and the Director of Defence Aviation and Air Force Safety.

Defence maintains close ties with the Civil Aviation Safety Authority, including a memorandum of understanding. This memorandum of understanding seeks to align regulations between the two bodies where possible.

Defence, consistent with its approach to Defence Aviation Safety Regulations, has chosen to align Unmanned Aircraft Systems regulations with European Aviation Safety Authority (EASA) where practicable along with Civil Aviation Safety Authority. Defence is currently developing new Unmanned Aircraft Systems regulations to make them contemporary with world's best practice. Civil Aviation Safety Authority have chosen to further align their regulations with European Aviation Safety Authority. The Joint Authorities for Rulemaking on Unmanned Systems (JARUS) to which Civil Aviation Safety Authority is a representative, is a group of experts from its National Airworthiness Authority members, including regional authorities who collaborate to recommend to interested parties (including European Aviation Safety Authority / Civil Aviation Safety Authority) technical, safety, and operational requirements for the certification and safe integration of Unmanned Aircraft Systems into airspace and at aerodromes.

Regardless of the regulatory arrangements, Defence is required to consult with Civil Aviation Safety Authority and Air Services Australia for the operations of Defence UAS in civilian airspace. This consultation is already quite mature and, for example, has resulted in the Heron UAS operating from Rockhampton airport during Operation Talisman Sabre 2015. Defence would seek to ensure that access to airspace can be provided for all UAS assets when the need arises to support emergency or operational requirements.

Local Design and Manufacture

Defence would support local industry to develop and manufacture unmanned aircraft systems where these systems can satisfy an identified capability requirement, and can be operated in such a way as to comply with Defence aviation regulations. Regulation around the use of UAS should not inhibit the ability of Australian industry to develop, test and evaluate UAS technology/capabilities.

Risk to Defence

A number of reports and anecdotes have indicated a rise in the use of unmanned aircraft systems for illegal or dangerous purposes. Examples include; flights into the flight path of manned aircraft, covert surveillance and operations in the vicinity of people placing them at unnecessary risk. There have also been reports of small UAS being fitted with explosives.

CASA AC101-10 allows the unregulated use of micro and very small UAS (Remotely Piloted Aircraft [RPA] in Civil Aviation Safety Authority terms) for sport or recreational use under the excluded category that could include electro-optic capabilities. Notably, use that is not considered sport or recreational in nature is obliged to meet Standard operating conditions that prohibit flight in the vicinity of

airfields or in prohibited and restricted airspace. The inquiry should consider the capability / security implications of non-military (Australian Defence Force) RPAs that carry electro-optic capabilities regardless of weight category and whether current legislation provides adequate control over this. Beyond Defence's security concerns, such restrictions are also in the interests of personal and commercial privacy.

There is the unlikely but potential threat for hostile non-state actors to adapt and weaponise commercially available UAS. The committee should consider whether current Legislation (either CASR Pt101 or other Acts) sufficiently addresses small UAS fitted with offensive systems (kinetic, chemical, biological, radioactive or active electromagnetic [eg jammers]). The committee may wish to consider how this may be achieved whilst allowing maximum flexibility for Defence.

Way Forward

The Defence White Paper 2016 makes it clear that Defence will continue to procure and operate unmanned aircraft systems. As such, Defence will continue to ensure that within Defence, they are regulated in such a way as to ensure the safety of all those that may be exposed to their operation.

Defence will continue to work with local, domestic and international agencies to ensure our regulations remain relevant and contemporary.

Conclusion

Being able to regulate Defence UAS operations provides Defence with significant flexibility when operating in isolation. Defence will seek to ensure the lowest possible impost on civilian activities through the use of manned or unmanned systems. However, Defence will also consult with the civilian regulator to ensure any civil regulations do not unnecessarily compromise defence capabilities.