



Australian Association for Unmanned Systems

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Press Release:

AAUS Extended Response to Senate Inquiry Report on the Safe Use of RPAS

24-Aug-18

On 31st July 2018, the Senate Rural and Regional Affairs and Transport Reference Committee released its Inquiry Report: 'Current and future regulatory requirements that impact on the safe commercial and recreational use of Remotely Piloted Aircraft Systems (RPAS), Unmanned Aerial Systems (UAS) and associated systems'.

On 2 August 2018, AAUS released a brief statement welcoming the Senate Inquiry Report and its intent to provide a detailed industry response. That statement can be found at: <https://aaus.org.au/aaus-response-to-senate-inquiry/>.

AAUS has since actively engaged its members towards the preparation of a comprehensive industry response to each of the ten recommendations contained within the Report. This release provides an initial summary of the findings from this stakeholder engagement activity.

AAUS is Australia's largest representative body for the unmanned / drone sector. Its 900 membership spans small-to-large enterprise, manufacturers, licensed and unlicensed operators, training providers, academic institutions, Government, and other supporting services to the Australian drone / Remotely Piloted Aircraft System (RPAS) industry. Thus, the summary contained in the attached document offers a truly comprehensive industry response to the recommendations.

Industry's response to the individual recommendations was varied, with industry holding both strong positive and strong negative viewpoints in relation to all of the recommendations. These positions and underlying concerns are detailed in the attached report.

Based on the industry response, AAUS is generally supportive of all of the recommendations made in the Senate Inquiry Report subject to the clarifications and concerns detailed in the attached report.

AAUS welcomes further opportunities to engage with Government towards its objective to promote a safe, viable, and beneficial drone industry in Australia.



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About AAUS

The Australian Association for Unmanned Systems is Australia's oldest and largest industry advocacy group for drone. AAUS represents drones across all three domains: land, sea, and air. AAUS' objective is to promote a professional, safe and commercially viable unmanned systems industry. AAUS achieves this through its industry advocacy and promotion, education and outreach, and networking activities.

AAUS provides a single representative voice for the full breadth of the drone / unmanned systems industry. AAUS' 900 membership spans small-to-large enterprise, manufacturers, licensed and unlicensed operators, training providers, academic institutions, Government, and other supporting services to the Australian drone / Remotely Piloted Aircraft System (RPAS) industry.

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Enclosures

- Summary of Industry Position on Senate Inquiry Recommendations (14 pages).



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Summary of Industry Response to Senate Inquiry Recommendations

22-Aug-18

Background

On 31st July 2018, the Senate Rural and Regional Affairs and Transport Reference Committee released its Inquiry Report: 'Current and future regulatory requirements that impact on the safe commercial and recreational use of Remotely Piloted Aircraft Systems (RPAS), Unmanned Aerial Systems (UAS) and associated systems'.¹

On 2 August 2018, AAUS released a brief statement welcoming the Senate Inquiry Report and its intent to provide a detailed industry response.²

Scope and Objectives of Report

This document is intended to provide an initial industry response to the individual recommendations made in the Senate Inquiry Report. The findings are intended to inform broader Government and Departmental response to the Report.

Preparation

AAUS has actively engaged its members towards the preparation of a comprehensive industry response to each of the ten recommendations contained within the Senate Inquiry Report. This activity involved the use of an online survey and interviews with key industry stakeholders. The responses have been consolidated with majority positions / concerns identified. Not all concerns and positions have been presented in this report.

¹ The full report can be found here: https://www.aph.gov.au/sitecore/content/Home/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Drones/Report

² A copy of the statement can be found here: <https://aaus.org.au/aaus-response-to-senate-inquiry/>



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Outline of Report

The following sections provide a summary of the industry response in relation to each of the individual recommendations made in the Senate Inquiry Report (“The Report”).

- Response to Recommendation 1
- Response to Recommendation 2
- Response to Recommendation 3
- Response to Recommendation 4
- Response to Recommendation 5
- Response to Recommendation 6
- Response to Recommendation 7
- Response to Recommendation 8
- Response to Recommendation 9
- Response to Recommendation 10

A statement of the relevant recommendation is provided in each sub-section. However, the high level nature of these recommendations can result in varying interpretations of its intent and scope. Each recommendation should be read within the context of the full The Report³.

³ The full report can be found here:
https://www.aph.gov.au/sitecore/content/Home/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Drones/Report



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Response to Recommendation 1

8.10 The committee recommends that the Civil Aviation Safety Authority draw on the growing body of international empirical research and collision testing on remotely piloted aircraft systems below 2kg to immediately reform Part 101 of the Civil Aviation Safety Regulations 1998.

AAUS remains supportive of the risk-based approach adopted by CASA on the regulation of drones and CASA's ongoing efforts to educate operators on how to safely operate their RPAS in accordance with applicable regulations.

AAUS advocates that any proposed reform to regulations be initiated on the basis of an objective safety argument; drawing upon the best available safety evidence and the growing body of academic research in the area of UAS / drone safety. As with any proposed regulatory reform, regulations mitigating safety risks should not come at unreasonable expense of the aviation sector.

AAUS wishes to emphasise that the Excluded Category is defined by the combination of mass limits and restrictions to the Standard Operating Conditions (SOC). Together, the combination of technical and operational limitations are intended to achieve a desired level of safety. Consideration of the drone mass limit (i.e., the potential harm caused), in isolation of the operational restrictions, does not comprehensively portray the risks posed by Excluded Category operations.

With respect to the Excluded Category defined in Part 101 of the regulations, The Report does not present sufficient objective safety evidence to warrant advocating regulatory reform of this category of operations. With that said, AAUS acknowledges the concerning number of incidents involving drones as detailed in The Report. However, there are no data on whether reported incidents are related to the any specific category of RPAS operation (i.e., Excluded Category or otherwise). It is AAUS' position that the growing number of incidents relates to inadequate enforcement of the current regulations as opposed to the inadequacy of the regulations themselves. Without adequate enforcement, such illegal operations would occur irrespective of the regulation. This is further discussed in the response to Recommendation 10.

The Report also details cases of illegal non-certified commercial drone operators who are operating in breach of the restrictions of an Excluded Category operation. These reports are consistent with those AAUS has received from broader industry. Such illegal commercial drone operators not only pose a safety concern but pose a significant threat to the commercial sustainability of professional certified commercial operators. Again, greater enforcement (or other technical means for limiting the operations to SOC) is essential to mitigating the safety and commercial impact of illegal commercial drone operations. This is further discussed in the response to Recommendation 10.

AAUS recommends that a review of current national and international safety performance data and emerging academic research into the safety of drones be conducted as part of standard CASA's standard Sector Safety Risk Profiling activity.



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Response to Recommendation 2

8.20 The committee recommends that the Australian Government introduce a mandatory registration regime for all remotely piloted aircraft systems (RPAS) weighing more than 250 grams. As part of registration requirements, RPAS operators should be required to successfully complete a basic competence test regarding the safe use of RPAS, and demonstrate an understanding of the penalties for non-compliance with the rules.

AAUS strongly supports a mandatory registration system for RPAS weighing more than 250 g coupled with a basic competency test regarding safe operation of RPAS and demonstrating an understanding of the regulations. Some of the potential benefits of a compulsory registration system include:

- **Improved Regulatory Compliance**
 - Registration is believed to make a positive contribution to the regulatory compliance, with operators being more easily identified, and therefore accountable for their actions.
 - Greater operator awareness of applicable regulations and safety responsibilities for those drone operators who would have otherwise not had any formal training.
- **Improved Safety of Excluded Category Operators**
 - Excluded operators previously not required to do any formal training would have to demonstrate a minimum level of competency.
- **Enhanced Safety and Education Outreach**
 - CASA will have a comprehensive database to use for safety promotion and outreach activities.
- **Enhanced Planning and Resourcing for Safety Activities**
 - CASA will have information on industry activity, including the number and types of operations, locations of operations, and operator categories, which can be used to better inform internal resourcing for standards, oversight, safety promotion, and enforcement activities.
- **Foundation for Future Safety, Enforcement and Airspace Integration Technologies**
 - The technical foundation for more efficient online approval application processes (e.g., the FAA LAANC);
 - An effective electronic registration system provides the foundation for other technologies and services important to the continued safe integration of RPA into Australian Airspace. This includes electronic identification, security, and future air traffic management concepts for RPAS / drones.



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AAUS supports the recommendation for mandatory registration on the basis that the following conditions and concerns are addressed:

- Industry must be actively involved in establishing the overarching principles and requirements for the system;
- The registration scheme and associated competency testing must be easy to use, efficient and cost effective;
- It is recommended that the system be implemented electronically (online), and that CASA review the lessons learned from the implementation of similar registration systems overseas;
- Consistent with the intent of Response to Recommendation 3, the required level of competency testing should be proportionate to the Category of Operation;
- Clear policies and procedures governing the collection of data, how is used, stored, disclosed, and distributed must be established to protect the privacy of registrants;
- A means for recognising existing CASA approved training (i.e., RePL holders) should be considered;
- The conditions for registration renewal and updating of registration details need to be developed in consultation with industry.



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Response to Recommendation 3

8.26 The committee recommends that the Australian Government develop a tiered education program whereby remotely piloted aircraft system (RPAS) users progressively unlock RPAS capabilities upon completion of each level of training. Three tiers are proposed as follows:

- purchase of the RPAS – mandatory registration requires user to demonstrate knowledge the basic rules for flying RPAS, and the penalties for non-compliance (as described in Recommendation 2);
- recreational use of RPAS – second tier requires user to demonstrate an advanced understanding of aviation rules and safety before unlocking additional capabilities; and
- commercial use of RPAS – final tier requires user to demonstrate comprehensive aviation knowledge before obtaining commercial operator licence and unlocking full RPAS capability.

AAUS supports the principle of a tiered education program for RPAS operators with the level of syllabus, training, and competency testing proportionate to the risks and complexity of different categories of drone operations.

Further, consistent with our response to Recommendation 2, AAUS supports the extension of minimum training and competency testing requirements to include recreational and commercial operators in the Excluded Category of operations.

AAUS notes that we already have tiered education requirements, particularly for more complex commercial RPAS operations. AAUS is engaged with CASA and the VET sector in evolving future training requirements for RPAS operators. The three-tiered approach recommended in The Report needs to be consistent with the existing frameworks being developed through these initiatives. Further, any broader consequences, including those relating to unlocking capability in drone capacity, need to be systematically identified and assessed. This particular scheme could be overly burdensome on industry and could hinder start-up manufacturing opportunities here in Australia.

The Report recommendation serves to renew AAUS' call for greater harmonisation between the various initiatives developing training syllabus and standards.



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Response to Recommendation 4

8.29 The committee recommends that the Civil Aviation Safety Authority, in cooperation with the Australian Federal Police and other relevant authorities, prohibit the use of remotely piloted aircraft systems in the airspace above significant public buildings, critical infrastructure and other vulnerable areas.

AAUS is supportive of this recommendation although it believes that the current legislation already addresses this concern. Specifically:

- Processes and procedures for determining and designating airspace restrictions for reasons of national interest already exist;
- There are regulations restricting the operation of drones near third party people and property. These are “umbrella regulations” that apply to all people and property and not specific sites. Subsequently, they are not explicitly designated as areas or no fly zones on aviation maps or in existing flight planning tools.

In supporting this recommendation, the designation of specific zones around specific sites, if necessary, should:

- not unnecessarily restrict airspace usage, and be cognisant of the rights of all airspace users (not just RPAS) to have unimpeded access to airspace;
- should follow existing procedures for the temporary restriction or designation of airspace, including a process for engaging local airspace users potentially impacted by changes to airspace;
- be incorporated, as appropriate, in the ERSA/DAH and digital planning tools like the CASA “Can I fly there App”.



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Response to Recommendation 5

8.31 The committee recommends that the Department of Infrastructure, Regional Development and Cities, in cooperation with the Civil Aviation Safety Authority, work with manufacturers of remotely piloted aircraft systems (RPAS) to develop future solutions to RPAS safety, including the implementation of technical restrictions on altitude and distance for 'off-the-shelf' RPAS.

AAUS members had many wide ranging views on this recommendation and we believe that the “devil will be in the detail” when considering the potential safety benefit of this recommendation.

Some important considerations when assessing this recommendation:

- AAUS believes that the onus for the safe operation of an drone/RPA in accordance with applicable regulations should legally reside with the operator;
 - There should not be an overreliance on manufacturer provided and potentially unassured technologies;
- The requirements for any new technology should be assessed in terms of the effectiveness of its mitigation of identified safety risks, its introduced risks, and its potential costs and benefits to industry;
 - Restricting performance of the RPAS (e.g., with respect to altitude and range) may have unintended consequences that may lead to a less safe outcome;
 - There are legitimate reasons why RPA could have high performance range and altitude capabilities;
- Efficient processes for enabling / disabling technical protection systems for approved operators would need to be developed;
- Any new safety technology should not be developed in isolation. Every effort to harmonise to emerging international standards should be undertaken;
- It is noted that technological solutions may not be as effective for custom built systems:
 - A process and means to verify the implementation of technical protections would need to be developed;
 - A means to ensure custom implementations of technical protections cannot be easily disabled (intentionally or otherwise);



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Response to Recommendation 6

8.37 The committee recommends that the Department of Infrastructure, Regional Development and Cities, in cooperation with the Civil Aviation Safety Authority, develop appropriate airworthiness standards for remotely piloted aircraft of all sizes and operations. At a minimum, fail-safe functions such as 'return to home' and safe landing functionality, and forced flight termination, should be mandated.

The responsibility for developing airworthiness regulations for all civil aircraft resides with CASA. CASA may consider a range of standards (including those industry developed) as a means of compliance to any airworthiness requirements it mandates.

AAUS supports the general recommendation to progress the development of airworthiness regulations for drones/RPAS.

In making this recommendation, it should be noted that:

- Airworthiness requirements applicable to different categories of drones / RPAS should be proportionate to the safety risks they pose to third parties and property;
 - The need for airworthiness regulations should account for the operational context in which the drone / aircraft is to be used;
 - Not all operational categories of drones / RPAS will require formal certification to a comprehensive code of airworthiness requirements,
 - Some categories of drone/RPAS operations may not warrant any airworthiness requirements; i.e., those operational categories where the risks are inherently low and/or existing operational mitigations are adequate;
- For some operational categories, airworthiness assurance may only be required in specific installed equipment key to mitigating risk (e.g., geo-fence capability, etc.) as opposed to the entire RPAS / drone;
- Any airworthiness regulatory framework should be consistent with emerging international airworthiness regulatory frameworks;
- Any airworthiness standard(s) should be harmonised with international standards;
- Further, regulations should be performance / outcome based and not overly prescribe a technical solution;



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Response to Recommendation 7

8.38 The committee recommends that the Australian Government develop import controls to enforce airworthiness standards for foreign manufactured remotely piloted aircraft systems.

Consistent with the response made to Recommendation 6, AAUS supports the development of airworthiness standards proportional to the risk of operation.

Currently the regulations identify that technical airworthiness is a requirement for flying RPA over populous areas or operating an RPA weighing > 150 kg.

Technical airworthiness requirements for RPAS is an issue globally and no standards currently exist. We encourage CASA to continue the large effort to develop airworthiness standards for RPAS in harmony with international efforts.

Recommendations 5 & 6 talk more about operational airworthiness considerations and the implementation of prescribed failsafe functions for RPAS.

AAUS believes that we need to be careful not to be too prescriptive with these parameters as we already have many operational guidelines in place that are geared to risk to ensure safety. In some cases, these minimum requirements may be an overkill or insufficient to ensure safety. Prescriptive standards may also have the unintended consequence of inhibiting innovation as industry strives to develop safer systems.



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Response to Recommendation 8

8.44 The committee recommends that the Department of Infrastructure, Regional Development and Cities, in collaboration with the Civil Aviation Safety Authority, develop a whole of government policy for remotely piloted aircraft safety in Australia, and establish appropriate coordination and implementation mechanisms with relevant departments and agencies to implement the policy.

8.45 As part of a whole of government policy approach, the committee further recommends that the Australian Government explore cost-effective models to develop and administer new regulatory initiatives for remotely piloted aircraft systems, including a mandatory registration regime and tiered education program. The harmonisation of state and territory privacy laws should also be considered.

AAUS supports this recommendation and has advocated for many of these initiatives over a number of years.

Coordination is essential to ensuring the broader legislation set (existing and emerging) applicable to the sector are developed in accordance with a consistent set of policies and that potential conflicts between distinct pieces of legislation (and jurisdiction) are addressed.

In making this recommendation, it should be noted that:

- Government Departments should seek to actively engage industry, through industry Associations like AAUS, to guide policy development for the sector;
- AAUS supports the Government policy of red tape reduction. The industry should not be subjected to unnecessary legislation and any cost or imposition as a result of new legislation should be considered;
- Any new legislation should be consistent between States and Territories;
- Legislation should be technology agnostic and outcome driven and not unnecessarily target the drone / RPAS sector (e.g., general privacy law reform versus privacy laws specific to drones / RPAS⁴);
- Safety should remain paramount concern;

⁴ In 2013, AAUS collaborated with Liberty Australia to develop recommendations to address privacy concerns relating to drone operations. Amongst many recommendations, we recommended that drones be considered like all other surveillance technologies and that state and territory privacy laws be harmonised.



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Response to Recommendation 9

8.50 The committee recommends that, as part of a whole of government approach to remotely piloted aircraft systems (RPAS) safety, the Civil Aviation Safety Authority work with Airservices Australia and other relevant agencies to implement a comprehensive research and data gathering regime. Information should be collated and centralised in a way that allows for the examination of RPAS registrations, operations, trends and incidents, to provide an evidence base on which to assess the efficacy of current regulations, and to inform the development of future policy and regulations.

AAUS strongly supports this recommendation, noting:

- Clear privacy policies and procedures governing the collection of data, how it is used, stored, disclosed, and distributed must be established;
- Where the primary intent of data collection is for the advancement of safety:
 - This function should fall under the remit of the Australian Transport Safety Bureau (ATSB) and the ATSB should be adequately resourced to support it;
 - Industry has significant domain expertise that could be used to inform the design of databases and incident reporting systems;
 - An efficient online anonymous incident voluntary reporting system with fields tailored for drones / RPAS should be established;
 - Mandatory reporting and accident classifications applicable to drones / RPAS should be reviewed to ensure they are sustainable and collecting relevant data;
- Where the intent of data collection is for purposes other than the advancement of safety:
 - Industry should be consulted regarding what data should be collected, the mechanism for collection, and how it is used and disclosed;
 - Industry reports should be released annually and made available to the public;
 - Relevant industry activity and economic data should be made available to the Bureau of Infrastructure, Transport and Regional Economics (BITRE) to inform both Australian Government policy development and wider community understanding of industry needs, growth, and opportunities;



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Response to Recommendation 10

8.64 The committee recommends that, following the development of a whole of government policy approach to RPAS safety, including the establishment of a national registration system, the Civil Aviation Safety Authority (CASA) work with state and territory enforcement bodies to implement a nationally consistent enforcement regime for remotely piloted aircraft systems. Under this regime, enforcement bodies would be delegated powers to provide on-the-spot fines and report infringements of the regulations directly to CASA.

AAUS supports this recommendation as we believe that it will go a long way to deterring illegal RPAS operations. In making this recommendation, it is noted that:

- Active enforcement is key to addressing concerns over the growing number of illegal recreational and commercial drone operators (refer to discussion in response to Recommendation 1);
- Formal oversight and enforcement should not be the sole means of ensuring compliance. It should be part of a layered management framework that includes proactive activities, such as education and outreach, that aim to foster a community culture of compliance;
- It is AAUS' preferred position for a single national agency hold the responsibility for enforcement and that the organisation is adequately resourced to execute this function;
- It is acknowledged that CASA is currently not resourced to undertake enforcement activities on the scale required to be effective. Either:
 - CASA is appropriately resourced to undertake effective enforcement; or
 - A framework to enable external agencies to better support CASA in its enforcement duties be implemented (e.g., evidence collection and reporting to CASA);
 - Appropriate powers are delegated to other agencies to undertake enforcement on behalf of CASA;
- Care is needed to ensure that there is no detriment to legitimate operators. Specifically:
 - Appropriate education and training of enforcement officers needs to be undertaken to ensure legitimate operators are not subject to unnecessary enforcement action;
 - Systems need to be developed to support enforcement officers in the correct and efficient execution of their role:
 - A simple system to allow enforcement officers a means for verifying the legitimacy / legality of an operation needs to be developed;
 - A means to accurately identify a drone and its corresponding operator;
 - Access to any such systems needs to be controlled.



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- A fair, open, and efficient process is needed to provide legitimate operators a means to dispute infringements or other enforcement action;
- The organisation / agency responsible for handling disputes needs to be appropriately resourced.
- Emerging identification technology, combined with a comprehensive and accurate registration database could help alleviate the resources required to achieve effective enforcement of safety regulations.