Australian Association for Unmanned Systems

Position Paper

Managing Risk to the Public and Conventionally Piloted Aviation associated with all Commercial and Recreational Drone Operations

15th September 2017

1. Background

With over 600 corporate and individual members, the Australian Association for Unmanned Systems' (AAUS) is Australia's peak, not-for-profit industry body in Australia. AAUS's objective is to promote a safe and viable unmanned systems industry through advocacy, outreach, networking, and professional services. AAUS, formed in 2009, is one of the world's leading unmanned systems organisations.

AAUS is also recognised by Government as the peak industry body and holds representative positions on the General Aviation Advisory Group, the CASA Sub-Committee, and Australian Industry Skills Committee Aviation Industry Reference Committee.

AAUS has welcomed the opportunity to provide input to the Senate Inquiry on the "Regulatory requirements that impact on the safe use of Remotely Piloted Aircraft Systems (RPAS), Unmanned Aerial Systems (UAS) and associated systems." The intent of the Inquiry is to explore the current and future regulatory requirements that impact on the safe commercial and recreational use of RPAS, UAS and associated systems.

> ***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 fly their drone legally.***
>
> ***However, we continue to monitor reports of near misses involving manned aviation and RPAS (or drones) in Australia and stand ready to offer assistance to Australian aviation authorities as they investigate these reports and look for ways to improve safety and educate drone operators about safe operations.***

AAUS has provided a written submission to the Inquiry[1], participated in a Committee hearing, and has been closely following the progress of the Inquiry. AAUS would like to formalise its position in relation to a number of issues identified during the progress of the Inquiry.

Specifically:

- Regulations that ensure equivalent safety standards across the entire RPAS / Drone sector (Section §2);
- Notification / registration system for hobby and recreational drone users (Section §3);
- Drone registration (Section §4)
- Minimum safety knowledge testing (Section §5).

A summary of recommendations is provided in Section §6.

A draft version of this document was forwarded to AAUS members for feedback on 25/7/17 and we are pleased with the strong feedback received via our survey and also email. We have

[1] http://www.aaus.org.au:80/resources/Documents/AAUS%20Submission%20to%20Senate%20Inquiry%20on%20RPAS%2020161214.pdf

incorporated member feedback into the recommendations included in this final version of the position paper.

The recommendations themselves are on balance aimed at increasing operator awareness of RPAS regulations and their obligations to safety. We are conscious that the implementation of some of these recommendations may not be ideal and will add cost and red tape. Finding a balanced approach to maximise safety value at the right cost will be the challenge.

Beyond the Inquiry, AAUS welcomes further opportunities to work with the Government, its Departments, and other stakeholders towards realising the full potential of a safe, viable and professional RPAS industry in Australia.

2. Proportional Safety Regulation Irrespective of Operator Type

There are challenges in the regulation of this rapidly evolving industry. Many concerns relate to the non-commercial (hobby / recreational) drone sector. It is important to note that the non-commercial drone sector is a very important and beneficial part of the larger drone industry and is the origin for much of the innovation in this industry as well as the relative affordability of high-quality equipment for commercial operators. It is also growing in economic significance in its own right, particularly in the rapidly emerging sport of "drone racing". Many industry professionals start their careers as hobbyists and drone sports are considered essential to fostering the next generation RPAS workforce. Thus, regulatory reform for the hobby drone sector should consider non-commercial drones and the many other potential benefits of a safe and prosperous industry. Safety must be the highest priority and regulation must be commensurate with that required to achieve an acceptable level of safety irrespective of Operator Type. The AAUS is mindful that the hobby / recreational community is particularly sensitive to the burden of regulation and that care is needed to get the safety-regulatory mix right.

Consistent with the Government's red tape reduction agenda, AAUS' policy is that any new regulation should be justifiable, proportionate, and not come at the unreasonable expense of any aviation sector. However, it is AAUS' position that the current regulations applicable to non-commercial (hobby / recreational) drone operators are not equivalent with the high safety standard demonstrated by commercial RPAS operators. It is also the case as a matter of regulatory philosophy generally that those who are paid to undertake an operation are inherently incentivised to take risks, cut corners, and push the limits in order to satisfy clients, supervisors, and economic pressures. For this reason, it is not necessarily true that hobby/recreation operations should be more strictly regulated; rather what we urge is for reasonable risk-based regulations to be implemented that incentivize voluntary compliance because they seem reasonable and proportionate to the casual, non-commercial operator.

The primary purpose of Civil Aviation Safety Regulations is to ensure the safety of all aviation operations, from Regular Public Transport operations through to recreational flying. Consistent with international best practice, regulations should be risk-based and proportionate, irrespective of whether the operator receives commercial reward or not.

> ***Recommendation 1:*** *AAUS is advocating for amendments to the regulations (CASR Part 101) so that an equivalent safety standard applies to all RPAS operations irrespective of whether they are commercial or non-commercial. Consistent with our written submission to the Inquiry, AAUS is advocating for amendments that should ensure non-commercial drone operations demonstrate the same high level of safety as currently demonstrated by commercial RPAS operators.*

Appropriate Scope. AAUS is aware that any changes to CASR 101 Subpart G (model aircraft) to address concerns with recreational drone use may have unintentional consequences to model aircraft organisations such as the Model Aircraft Association of Australia (MAAA) and the Australian Miniature Aerosports Society (AMAS).

Recommendation 2: *AAUS is not advocating for changes to the regulations that currently apply to model aircraft operators flying under the approved rules of a model aircraft organisation, such as the MAAA or AMAS. AAUS acknowledges the high safety standard and level of professionalism that has been demonstrated by model aircraft operators belonging to model aircraft clubs over many years.*

It is the intent of this working paper to focus on modern drone use and eliminate any distinction between commercial and non-commercial drone operations and not impact traditional model aircraft participants. We recognise that this may not be easy to do in a regulatory sense.

3. Operator Notification / Registration

AAUS believes there are safety, security and broader benefits to implementing a notification / registration system for commercial and non-commercial (hobby and recreational) RPAS operators in that more people are brought into the system. Once captured the notification / registration system can serve as an ongoing education channel, which we believe is the best means to mitigating the risk posed by all operators.

A notification / registration system will lead to greater compliance (proactive risk management) and improve CASA oversight and enforcement activities (reactive risk management). Further, a notification / registration system can lead to:

- Improved safety promotion, education, and outreach by providing CASA a means to contact operators;
- Improved planning and management of the sector through the collection of aggregated data;
- Improved security through providing authorised agencies with a means to identify operators and aircraft.

Currently, we effectively have a registration system in place for commercial (included category) operators and a notification system in place for excluded category commercial operators.

Recommendation 3: ***Existing notification / registration systems should be expanded to include recreational operators.***

The cost for notification / registration should be kept to a minimum, be user-friendly and implemented entirely online.

To be consistent with Recommendation 2, an exemption would need to apply to recreational operators that are flying in accordance with the rules of MAAA or AMAS.

4. Drone Registration / Identification

As part of the operator notification / registration process, we should consider a mandatory system for identifying the owner of each drone. This will help with tracing the owner of a drone that has been involved with an incident (assuming that the drone is found).

AAUS believes that CASA should consider the FAA system which requires hobbyists to register once and receive a single number that they display on all their drones. This number could be their ReOC number (commercial organization) or ARN (commercial individual) or Name and phone number (hobbyist). This has the benefit of assuring accountability and creating a communications/education channel while keeping costs down and encourages a high level of compliance. It is worth noting that over 800,000 people have registered in the US to date. It also makes it easier for hobbyist to sell their drones to one another.

Recommendation 4: ***All operators (commercial and hobbyist) should mark their drones with an operator-unique identifying number as specified by CASA.***

AAUS can see definite benefits in the mandatory use of electronic identification (eID) systems where drone systems would have to transmit information (e.g., identification and location) when electronically interrogated by approved authorities. This would allow approved authorities to identify the owner of an operational drone. We note that some of the major drone manufacturers are already implementing eID systems[2].

Recommendation 5: ***Australia should commence trial programs to explore the safety benefit and practical implementation of a mandatory eID system.***

Suitable mechanisms should be in place to ensure individual RPAS / drone operators' rights to privacy are protected.

[2] An example eIdentification system can be found here: https://www.dji.com/newsroom/news/dji-proposes-electronic-identification-framework-for-small-drones

5. Knowledge / Licensing

Consistent with our submission to the Senate Inquiry[3] and response to the 2016 amendments to CASR Part 101[4], AAUS does not believe commercial operators in the sub 2kg "excluded category" should be required to have a remote pilot licence. However, we believe that some basic and proportionate knowledge is required and could be implemented as an online test in conjunction with operator notification.

> ***Recommendation 6:*** *Excluded category commercial operators and equivalent recreational operators should have to undergo training and testing to demonstrate knowledge of:*
> - *Safety regulations that apply to them;*
> - *Basic principles of safe flight, and the*
> - *Principles of respecting the privacy and safety concerns of third parties.*

AAUS has endeavoured to implement this requirement for its commercial operators as part of its Professional Accreditation Program[5], which includes a code of conduct[6], and an online test (or evidence of training). It is AAUS' position that the requirement for basic knowledge in the areas of regulations, safe flight and flying neighbourly be mandated for all excluded operators and hobby / recreational drone operators who are not operating under MAAA guidelines.

Materials. CASA has developed online materials sufficient to cover the regulations and basic principles for safe flight. Additional materials are required to cover the principles of flying neighbourly, which includes considerations for public privacy, disturbance of the peace, and environmental considerations.

Testing required. An online test appropriate for the diverse range of hobby / recreational drone users should be developed. The testing could be administered by CASA or a CASA-approved delegate. The key to this approach is a test that can be taken online and is designed so that it can be passed relatively easily after the test-taker has been given the basic rules or operation.

Cost. Testing should not come at unnecessary cost to operators. Online automated systems should be used to minimise cost. Ideally, the test should be free.

Records. Test data should be included in the notification / registration data recorded for individuals.

The question remains on how we handle training / licensing requirements for hobbyists operating drones weighing > 2 kg. Commercial operators require a RePL, but is not clear that this requirement is appropriate for hobbyists. If we specify tough licencing requirements for hobbyists (> 2kg), we run the risk of non-compliance and / or harming the industry.

[3] http://www.aaus.org.au:80/resources/Documents/AAUS%20Submission%20to%20Senate%20Inquiry%20on%20RPAS%2020161214.pdf
[4] http://www.aaus.org.au/resources/Documents/Documents/AAUS%20Position%20Statement%20-%20%20CASR%20Part%20101.pdf
[5] www.aaus.org.au/ADOP
[6] http://www.aaus.org.au:80/resources/Documents/Documents/AAUS%20Code%20of%20Conduct.pdf

Recommendation 7: ***Australia should investigate a tiered approach to knowledge and licensing requirements (commensurate with risk) for hobbyists operating RPA > 2kg and not operating under MAAA / AMAS guidelines.***

In addition to the above, there is a need for additional, and cost-effective training packages for those members who voluntarily seek to improve their knowledge and skills, beyond the minimum knowledge requirements. Training of Remote Pilots (RPs) remains an important pillar in the overall safety and professionalism of the industry. Australia has approximately 40 approved training providers. Greater standardisation of training packages and assessment across training providers is needed.

Recommendation 8: ***Introduce a national standard for training packages and training providers including guidelines for acceptable means of compliance with the standard.***

Training and educational experience programs are now being delivered to high schools. Greater support for these programs is needed. RPAS training organisations have also begun to respond to demand coming from the broader community; offering simplified training for recreational drone operators. The Association strongly encourages the development of training and experience programs specifically for hobbyists. The challenge lies in standardising the syllabus and being able to deliver training around the nation at a price point affordable to hobby / recreational drone operators.

6. Summary of Recommendations

Recommendation 1: AAUS is advocating for amendments to the regulations (CASR Part 101) so that an equivalent safety standard applies to all RPAS operations irrespective of whether they are commercial or non-commercial. Consistent with our written submission to the Inquiry, AAUS is advocating for amendments that should ensure non-commercial drone operations demonstrate the same high level of safety as currently demonstrated by commercial RPAS operators.

Recommendation 2: AAUS is not advocating for changes to the regulations that currently apply to model aircraft operators flying under the approved rules of a model aircraft organisation, such as the MAAA or AMAS. AAUS acknowledges the high safety standard and level of professionalism that has been demonstrated by model aircraft operators belonging to model aircraft clubs over many years.

Recommendation 3: Existing notification / registration systems should be expanded to include recreational operators.

Recommendation 4: All operators (commercial and hobbyist) should mark their drones with an operator-unique identifying number as specified by CASA.

Recommendation 5: Australia should commence trial programs to explore the safety benefit and practical implementation of a mandatory eID system.

Recommendation 6: Excluded category commercial operators and equivalent recreational operators should have to undergo training and testing to demonstrate knowledge of:

- Safety regulations that apply to them;
- Basic principles of safe flight, and the
- Principles of respecting the privacy and safety concerns of third parties.

Recommendation 7: Australia should investigate a tiered approach to knowledge and licensing requirements (commensurate with risk) for hobbyists operating RPA > 2kg and not operating under MAAA / AMAS guidelines.

Recommendation 8: Introduce a national standard for training packages and training providers including guidelines for acceptable means of compliance with the standard.

7. About AAUS

The Australian Association for Unmanned Systems (AAUS) is the peak, not-for-profit industry advocacy body and voice for end users, operators, training organisations, Government and manufacturers, as well as safety and aviation organisations in Australia for all unmanned and RPAS systems. Our members include corporates, individuals, and government representatives. AAUS's objective to promote a safe and viable unmanned systems industry through advocacy, outreach, networking, and professional services. AAUS, formed in 2009, is one of the world's leading unmanned systems organisations.

AAUS represents the entire remotely piloted aircraft systems (RPAS), Unmanned Air Systems (UAS) or drones, industry. From single operators through to large multi-national companies, our members include RPAS operators, manufacturers, maintainers, commercial retailers, training providers, insurance providers, academia, end users, and supporting services. Our Association provides "a whole of industry" perspective on the issues and challenges being faced by this rapidly growing sector, which is rapidly becoming economically significant to the nation – from defence through to agriculture, mining, and the film industry.

AAUS is also recognised by Government as the peak industry body and holds representative positions on the General Aviation Advisory Group, the CASA Sub-Committee, and Australian Industry Skills Committee Aviation Industry Reference Committee.

More about AAUS, its members and its activities can be found on our website: aaus.org.au

www.aaus.org.au

AAUS

