



AERIAL APPLICATION ASSOCIATION OF AUSTRALIA LTD.

ABN 13 002 501 886 • ACN 002 501 886



22 September 2017

AAAA Submission

CASA Review of RPAS Operations 2017 - DP1708OS

Introduction

Many of the issues raised in the CASA Discussion Paper have already been canvassed by the current Senate Inquiry into Drones.

Consequently, in addition to AAAA's brief responses to the direct questions posed in the CASA DP in this submission, AAAA directs CASA attention to the AAAA Submission to the Senate Inquiry which is attached at **Appendix 1**.

Airspace Separation Remains a Key Risk Not Managed

AAAA refers CASA to the critical uncontrolled risk created by the current lack of a meaningful and operationalised communication system between low level aerial work airspace users and drone operators.

Failure to adequately manage this risk remains a prime likely cause of any separation failure between an aircraft and a drone and consequently a significant threat to pilots and aircraft.

AAAA notes that CASA consultations and working groups deliberations to date have largely been dominated by facilitation of the drone industry, rather than direct management of separation risks.

While much of the work on training, certification and maintenance of drones as well as the overarching legal framework has helped the drone industry, it has done nothing to address the critical separation concerns of existing airspace users that have been raised time and time again to no avail - including by AAAA at various working group and other CASA meetings.

Jamming all drone operations into airspace below 400' with other legal aviation users including aerial application, survey and other operations is not a responsible management of this risk - it is an active exacerbation of a known and easily foreseeable threat to safety.

Legal vs Illegal drone operations

AAAA believes it is important to develop and deliver different legislative and enforcement responses regarding drones, depending largely on whether operations are legal or not legal.

In terms of legal operations, CASA should facilitate and fund a nationally available application available on smart phones and the internet that permits a simple interaction between likely users - being drones and especially aerial application companies - of the same low-level airspace. Further details are provided in the attached AAAA Submission to the Senate Inquiry.

In terms of illegal operations, CASA should significantly increase available penalties to be commensurate with other serious safety breaches. AAAA believes fines should be in the order of a maximum of \$50,000 for an individual and \$100,000 for a company. These levels of penalty are commensurate with similarly important breaches of regulations in various jurisdictions.

The combination of education and significant deterrence is essential to addressing the ongoing, widespread and illegal use of drones.

Drone Weights

AAAA is strongly of the view that CASA has failed in its primary task of risk of safety management by deregulating drones to various weight limits.

By deregulating - especially of the up to 25kg category for agricultural operations over a farm without a risk management tool being available to facilitate communication - CASA is simply ignoring the obvious risk of a collision with an aircraft operating on aerial application operations or similarly legal low level operations such as survey.

CASA should urgently reregulate all drones and develop and implement a communication app in consultation with AAAA and drone Associations.

AAAA's responses to CASA DP Questions

Should there be some form of mandatory registration of all RPA, RPA owners and/or RPA operators?

Yes. AAAA believes that all drones should be registered to permit traceback to an individual or company in the event of illegal operations or for safety investigations.

Australia already has registration and traceback schemes across a wide range of areas, including agricultural produce, livestock, agricultural chemicals, and of course, all other aircraft. Any argument that this is either not warranted or too much of a burden on drone users is specious.

AAAA believes that automated websites/database combinations could manage this process without the need for significant additional staff.

AAAA believes that all drones should have some form of identification either engraved or otherwise clear on the airframe of the drone. While not perfect for identification purposes, it would certainly be a support to all responsible drone operators doing the right thing and suffering reputational damage because of illegal or dangerous operations.

Any costs of mandatory registration of drones should be recovered from the drone industry directly. In particular, current CASA expenditure on drones should be recovered from that sector so that other sectors paying the fuel excise to pay for CASA should not be required to run a cross subsidy to the drone sector.

Should there be some form of mandatory training and/or demonstration of proficiency in, and knowledge about, the safe and lawful operation of RPA before a person is permitted to operate any kind of RPA?

Yes. The ongoing incursions into controlled airspace, near airports, around fire grounds and in other critical areas warrants a minimum level of training of every drone operator.

Clearly, the level of training or even education required should be commensurate with the complexity and commercial nature of the operation.

If an individual intends to operate commercially, then a higher standard of competence and systems of safety management should apply.

However, there must be a regulated minimum standard of awareness regarding airspace limitations and operational limitations to minimise risk to observers or those in the immediate area - especially for recreational users.

Should CASA mandate the introduction of certain kinds of geo-fencing options to limit the operation of RPA in certain areas?

In some situations, such as the approach and departure splays of airports, this makes a great deal of sense.

Having the technology to do so is a separate matter that will clearly influence how this concept develops, especially in how it could be deployed in fast developing and fluid operational environments such as fire grounds.

CASA seeks your general views on the way in which counter-drone technologies should be managed, and whether there are particular aspects of this technology and its potential uses to which you think CASA should be devoting particular attention.

A watching brief is essential as technology develops. However, it is easy to imagine how an effective countermeasure to drones could be of critical importance on a fire ground where other aviation assets are in use and the presence of illegal drone operations could lead to the loss of life or assets if aircraft have to be grounded.

Enabling relevant Commonwealth and State agencies to have the power to disable drones in any area under their control (eg during anti-terrorism, policing, emergency response including fires, disease outbreak response or quarantine operations to name a few scenarios) would be both appropriate - and from the perspective of a sector of the industry that may be involved in some of these scenarios - critical to safety and performance of the task.

Are we doing enough of the right kinds of things, with a view to current circumstances and what you think we will need to deal with in the future?

If not, what should we be doing or doing more of?

Are there any other issues or factors you believe CASA should take into account when considering its approach to the regulation of RPA?

CASA should develop an app to facilitate communications between drone operators and other legal airspace users.

Further Information

For further information or to discuss any of the issues raised in this submission, please contact the AAAA office. Appendix 1 - AAAA Submission to the Senate Inquiry into Drones

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A E R I A L A P P L I C A T I O N A S S O C I A T I O N O F A U S T R A L I A L T D .

ABN 13 002 501 886 • ACN 002 501 886



15 December 2016

Committee Secretary
Senate Standing Committees on Rural and Regional Affairs and Transport
Inquiry into Drones
Parliament House
Canberra ACT 2600

AAAA Submission - Drones

Introduction

AAAA is the peak industry body representing business owners and pilots involved in the aerial application of crop protection products, firebombing and related operations. The Association was established in 1958 and has a long track record of working positively on aviation safety and regulatory issues.

The members' operations require them to work at low level - often a few metres above a crop or higher when sowing, fertilising or firebombing. Almost all operations will be conducted below 400' - creating a direct conflict with drone use in the same airspace.

Key Risk Not Mitigated

AAAA believes that the key risk that CASA has failed to address is separation between legitimate and legal low level airspace users and drones.

Airspace users affected include aircraft used for aerial application, survey, mustering, pest control, slinging, fire observation, emergency rescue and other aerial work activities.

In addition, all other aircraft approaching, landing, taking off and departing from private, agricultural or other airstrips are not protected by current laws.

In addressing this primary risk of a breakdown of separation - which AAAA has raised with CASA many times - it would not be unreasonable to expect CASA to have established a real time system of communication between drone users and existing low-level airspace users to allow them to make local arrangements for adequate self-separation.

No such communication system is in place and consequently this primary risk remains unmitigated.

The current NOTAM system is simply not adequate to cope with this risk given the likely number of interactions, the variability of geography covered on an hourly basis and the essential immediacy necessary for timely notification and further communication between parties.

AAAA believes that the current CASA approach of deregulating drones up to 2 kg generally and up to 25 kg when used on farm - without a commensurate system to facilitate notification and communication - is fundamentally flawed from an aviation safety perspective.

It is not the low kinetic energy of the drone that is at issue - it is the kinetic energy of the low level aircraft weighing several tonnes, travelling at approximately 250 km/h and with a vulnerable pilot at the controls protected by a thin

sheet of Perspex and powered by an engine that would be highly likely to fail should a drone be ingested or hit a control surface. The consequence of such an event could be significant, especially for the pilot.

Again, AAAA has raised these issues with CASA and been consistently ignored, as demonstrated by the current regulations that ignore this very real risk.

A number of safety reports made to ATSB involving conflict between drones and other aircraft clearly demonstrate that this risk is not theoretical and not able to be managed given the current lack of a coherent notification/communication system.

There are many examples of GIS based apps that already perform this type of function in other areas. One example is the BeeConnected app - <http://beeconnected.org.au/> - developed by Croplife and the Australian Honey Bee Council and of which AAAA is a strong supporter. This app allows spray contractors and apiarists to work together to manage a range of risks and is based on the principles of notification and communication.

The technology is obviously available and being successfully used in other sectors.

CASA - or the management of AirServices - has simply not considered the potential of such an approach to improve safety in this area. GIS technology combined with smart phones or other devices would lend itself to improving safety across a wide range of low level airspace issues.

This could include, for example, better and more timely notification of wind monitoring towers, wind farms, radio towers, powerline marking etc - information that is critical to low-level aviation but which is simply not made available through existing charts in a timely manner for operations that are highly seasonal, highly mobile and require constant variation and rescheduling due to weather and other operational considerations.

Clearly, such an approach would be a win-win scenario for drone operators, low-level operators, the regulator CASA and the airspace service provider AirServices - but unfortunately appears to be beyond the imagination or knowledge of those determining current drone regulations and responses to the clear primary risk of separation.

Key Issues Requiring New Consultation and Regulations

The following additional issues may also be useful in establishing for the Inquiry core issues of concern to industry and potential ways forward to improving safety:

Communication – the critical factor to improving safety is to use modern technology to facilitate improved communication between drone users and legitimate users of low-level airspace as outlined above.

Education – improved education of the wider population and obviously drone users (including hobbyists) regarding drone safety and sharing airspace is critical. While the current campaign conducted by CASA has some good elements, it is not achieving penetration into the potential drone user community and is basically a toothless threat unless accompanied by high profile prosecutions using significant penalties.

Enforcement – while there are regular negative events involving drones, only a few make it to ATSB reports or media reports of prosecutions. CASA penalties in the legislation are not set at a significant level to be a major deterrent to poor or reckless use and should be increased to a maximum penalty – especially for wilful and negligent offences - of up to \$50,000 for an individual and \$100,000 for a corporation. While these levels of penalty may appear to be high, they are unlikely to match the potential loss of income to aircraft operators who have to stand down, or the potential damage to life or property during a bushfire. Without supporting legislation to improve the traceability of drone offences, CASA will be unlikely to mount the high profile prosecutions to establish any deterrence value.

Deregulation to 2kg – opposed – need for transparency, accountability and responsibility – see the US FAA model that requires registration. As a minimum, every drone should carry a registration number/engraving so that trace back is possible should the drone crash or cause injury etc. The key risk to be managed remains the lack of a communication system and safe drone use away from the public and other airspace users.

Deregulation to 25kg on farms – opposed – as above, but there are additional issues to be considered including the competence of operators of the drone in areas such as aerial application of chemicals including environmental protection, spray quality, drift management and the prime risk of separation through communication.

Regulation of commercial drone operations - Commercial drone operations should be required to have systems of management that provide a commensurate level of safety as all other commercial aviation operators.

AAAA supports the following regime for all drones used in a commercial setting to ensure systems are in place to manage the relevant challenges including safety:

- All business owners must operate under the requirements of an AOC or similar and be licensed by the Dept in charge at the State/Territory level for chemical control of use purposes if involved with application of agricultural chemicals.
- All business owners must comply with the full requirements of an operations manual.
- All operations manuals must detail how the operation will manage the risk of airspace sharing, especially with aerial application and other low level users.
- All business owners must have operational control of their personnel.
- All drone operators must be competent and licensed by CASA and the Dept in charge at the State/Territory for chemical control of use if involved with application of agricultural chemicals.
- All drone businesses and operators must comply with similar competence requirements for all other commercial aviation businesses conducting similar operations.

Further Information

If the Committee requires any further information or explanation, please contact the AAAA CEO Mr Phil Hurst on 02 62412100. AAAA would be happy to appear before the Committee should that felt to be valuable by Committee Senators.