AUSTRALIAN AIRPORTS ASSOCIATION

Senator Glenn Sterle
Chair
Senate Standing Committee on Rural and Regional Affairs and Transport (References)
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15 December 2016

Regulatory requirements that impact on the safe use of Remotely Piloted Aircraft Systems, Unmanned Aerial Systems and associated systems.

Dear Senator Sterle,

I am writing to you in relation to the inquiry on the regulatory requirements that impact on the safe use of Remotely Piloted Aircraft Systems (RPAS), Unmanned Aerial Systems and associated systems referred to the Senate Standing Committees on Rural and Regional Affairs and Transport on 13 October 2016. The Australian Airports Association (AAA) would like to thank the Committee for the opportunity to comment.

By way of background, the AAA is the national industry voice for airports in Australia. The AAA represents the interests of more than 260 airports and aerodromes Australia wide – from local country community landing strips to major international gateway airports. The AAA's members include Adelaide, Brisbane, Cairns, Canberra, Darwin, Gold Coast, Hobart, Perth, Melbourne and Sydney Airports. There are a further 130 corporate members who provide goods and services to airports. The Charter of the AAA is to facilitate co-operation among all member airports and their many and varied partners in Australian aviation, whilst maintaining an air transport system that is safe, secure, environmentally responsible and efficient for the benefit of all Australians.

AAA Concerns

The prevalence and availability of RPAS in recent years has increased dramatically. What was once a specialist technology confined to military applications, RPAS are now readily available online and in many retail outlets at prices that are attractive to a large number of consumers. In the Federal Aviation Administration's (FAA) 2016 Aerospace Forecast report, it was revealed that in three years' time it is expected that over 7 million drones will be shipped to the United States, with 2.7 million expected to be used for commercial applications and 4.3 million by hobbyist. While similar forecasts are not readily available for the Australian market, there is every indication that the trend will be replicated here. The integration of a large quantity of new aircraft systems into Australia's airspace is a safety issue in itself. However, this issue is amplified by the fact that many RPAS operators are hobbyists with limited training or aviation knowledge. There is a significant growing risk that aviation safety could be significantly compromised if there is not suitable regulatory oversight of RPAS.

AAA members have a number of concerns on the use of RPAS and their possible impact on the safe operation of aircraft on and near aerodromes. While regulations require RPAS not to be operated within 3 nautical miles (5.5 km) of the movement area of a controlled aerodrome, there is concern operators (in particular

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amateur users) may not be familiar with controlled airspace boundaries. While major city airports are generally more easily identifiable there is concern smaller GA and regional airports may not be as well known. Given the lack of enforcement and limited public awareness of critical airspace surfaces around aerodromes, there is a substantial risk of continued infringements by RPAS users. While licensed commercial operators may be expected to be familiar with airspace restrictions, it is unlikely that hobbyists will have the required depth of knowledge to understand the potential aviation safety hazards posed by inappropriate use of RPAS.

Increasing Use of RPAS

Commercial RPAS operators have increased from about 25 in 2007 to over 500 in 2016. This is a significant increase likely driven by wider availability and new and improved technology. Technological advancements are resulting in greater reliability, increased battery life, longer operating ranges and decreasing unit costs. In turn greater availability has led to previously unknown uses for RPAS such as shark patrolling, fire observation, aerial inspection of power lines, news collection etc. becoming standard. As the technology continues to improve, new uses for RPAS will continue to be developed.

In addition anecdotal evidence suggests hobby use of RPAS has increased exponentially. This is likely to be driven in part by the commercial expansion of RPAS leading to economies of scale in production, in turn directly impacting on the cost of RPAS. However, the introduction of robust camera systems such as 'Go Pro' and the ability to control entry level RPAS from hand held communication devices (smart phones) are also likely to be key factors. Familiarity and enthusiasm with the technology encourages amateur operators to upgrade to more and more sophisticated RPAS devices. As the sophistication grows, so do the operating capabilities of these systems and therefore the potential risk to aviation safety.

Aerial Hazard to Aircraft

Birdstrike is a well-known aircraft hazard having figured in a number of highly publicised incidents overseas in recent years. The most serious incidents are as a result of multiple strike of large birds, for example the incident of US Airways Flight 1549 coming to rest in the Hudson River in New York in 2009.

The Australian Transport Safety Bureau (ATSB) advised between 2004 and 2013, there were 14,571 birdstrikes reported, most of which involved high capacity air transport aircraft. While birdstrike has not been a significant safety risk to civilian aircraft in Australia, aerodromes have an obligation to identify potential wildlife hazards to aircraft and to prepare a wildlife hazard management plan. The plan must detail the particulars of the procedures to deal with hazards to aircraft operations caused by the presence of wildlife on or near the individual aerodrome. Aerodromes take this responsibility seriously, ensuring plans are completed by suitably qualified persons. Following a birdstrike, efforts are made to recover and identify the species involved, providing an opportunity to learn from the incident and if necessary put in additional mitigation measures.

Aerodrome operators cannot be expected to anticipate and plan for potential incursions by RPAS, even though they pose a potentially greater safety hazard than wildlife strikes. Aerodrome operators rely on well enforced regulation to ensure RPAS do not become a hazard to aircraft near the aerodrome. The AAA acknowledges CASA has commissioned some research on the issue of potential damage of a mid-air collision with a small UAV.[1] The report is a useful start to quantify the risk of RPAS to other aircraft however the report also acknowledges no data exists to validate the predictions of windscreen penetration by a solid object.[2] Overall the report appears to indicate large aircraft are unlikely to suffer catastrophic damage from a strike by a 2kg RPAs however smaller aircraft, in particular GA aircraft appear more vulnerable.

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[1] https://www.casa.gov.au/licences-and-certification/standard-page/technical-papers

[2] *Potential damage assessment of a mid-air collision with a small UAV*, Civil Aviation Safety Authority Civil Aviation Safety Authority/Monash University 12/6/2013 page 18.

It is important to recognise that the risk from RPAS operations is only going to increase overt ime as the technology continues to be adopted by more industries for commercial purposes. There have been several international and Australian companies that are actively piloting the use of drones as a delivery device, given their ability to carry payloads. It is these payloads that can potentially pose the greatest danger in the event of a collision with an aircraft.

CASA Consultation

To date the AAA has provided input to several public consultation processes undertaken by the Civil Aviation Safety Authority (CASA) in relation to RPAS. This has included the Notice of Proposed Rule Making (NPRM) for CASR Part 101 regarding Remotely Piloted Aircraft (RPA) used for commercial operations, a discussion paper on the Unmanned Aircraft System (UAS) Airworthiness Framework, and the draft Advisory Circular on RPAS (copies of AAA submissions provided as attachments).

The consistent message that the AAA has outlined in each of these processes is that whether RPAS are used for commercial or recreational purposes, the potential hazard they pose to safe aviation operations remain the same. The level of regulatory oversight of RPAS should be commensurate with their operational capability and the potential hazard they pose (weight, payload and propulsion).

The AAA supports the development of technologies and standards that would assist in preventing RPAS being operated in breach of standard operating conditions (in instances where the appropriate approvals have not been sought), such as collision avoidance technologies and GPS geo-fencing to prevent interference with safe airport operations.

Technology based solutions, combined with an effective education and enforcement campaign will be the key to minimising RPAS related safety incidents. The AAA supports the work CASA has done to date in relation to the publications, information and training material available to the public via its website on the use of RPAS. The AAA is also encouraged by the fact that CASA has commissioned the development of an app to help recreational and professional drone flyers avoid flying in restricted areas. While these are all positive initiatives, there needs to be some basic mandatory regulatory requirements imposed to ensure RPAS users are as educated as possible.

AAA recommendations

The AAA recommends the establishment of a mandatory registration scheme for all RPAS 250g or more through an online portal administered by CASA. This simple registration process would allow for owners of RPAS to provide sufficient detail to identify the UAV (and its operator) in the event of an incident. This registration process should also include a requirement for the person to review and acknowledge the regulatory requirements of operating the RPAS.

With respect to RPAS greater than 2kg (including payload), the AAA recommends regulations to mandate safety parameters on the control software/aircraft firmware, such as height limitation, maximum distance from take-off point and integrate no-flight zones through Geo-fencing on GPS units. This technology solution is already within the capability of many RPAS and would prevent users operating the aircraft outside standard operating procedures, unless appropriate permissions have been sought from CASA, the airport and Airservices Australia.

The AAA also recommends that CASA undertake a comprehensive public education and awareness campaign to ensure RPAS users understand the implications of improper use and the potential penalties involved. In conjunction with this awareness campaign, CASA must take strong enforcement action where appropriate to act as a deterrent to unsafe RPAS operators.

I would welcome the opportunity to discuss this matter with you further and please do not hesitate to contact me should you have any questions. I can be contacted via David Tansey (AAA Regional Airports Officer) on 02 6230 1110 or dtansey@airports.asn.au.

Yours sincerely,

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