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Committee Secretary
Rural and Regional Affairs and Transport Legislation Committee
PO Box 6100
Parliament House
Canberra ACT 2600

Email: rrat.sen@aph.gov.au

To the Committee Secretary,

Re: Regulatory requirements that impact on the safe use of Remotely Piloted Aircraft Systems (“RPAS”), Unmanned Aerial Systems and associated systems.

The Civil Air Operations Officers Association of Australia (“Civil Air”) is a registered organisation under the *Fair Work Act (Registered Organisations) Act 2009*. Civil Air was established in 1948 and the Association has eligibility to represent members employed in civilian air traffic control and air traffic services in Airservices Australia. Civil Air directly represents over 90% of employees eligible to be members of the Union.

We thank the Committee for inviting us to make a submission about RPAS and their impacts on aviation safety and security.

Australia has one of the safest aviation environments in the world. Our air traffic control (“ATC”) system is a major contributor to this and air traffic control officers (“ATCOs”) play a critical role by ensuring the safe, orderly and expeditious flow of air traffic. Unregulated remote pilot aircraft systems have the potential to threaten this enviable record.

Whilst Civil Air acknowledges the commercial and recreational requirements of RPAS users, and the future social and economic impacts, these are best left for those with expertise in these areas to advocate on their behalf. Equally, Civil Air has limited expertise in the areas of manufacture, design, compliance, insurance and privacy issues and therefore these issues are beyond the scope of this submission. The purpose of our submission is to provide Committee members with information we feel is necessary to ensure that ATCOs can continue to provide a safe, orderly and expeditious air traffic control system.

Civil Air acknowledges that CASAs function is to regulate civil air operations in Australia through the development and promulgation of clear and concise aviation safety standards. Relevantly, CASA must have regard to the safety of air navigation as its most important consideration. Therefore, Civil Air submits that while there are other important concerns regarding the integration of RPAS into the aviation environment, these are secondary to the safety of air navigation.



Civil Air endorses a risk-based approach to the regulation of RPAS. Baseline risk should be assessed and, if not acceptable or as low as reasonably practicable (ALARP), appropriately mitigated until it is acceptable and ALARP. CASR Part 101, with an associated Manual of Standards, is appropriate to regulate the operation of RPAS to manage risk. Furthermore, it should be clear to all affected parties that CASA maintains overall responsibility for that risk. While it is reasonable to prescribe regulations imposing requirements on affected parties including RPAS pilots, manufacturers, business operators, ATCOs, etc., it is important that these regulations are reasonable. It is our contention that unreasonable or onerous regulation will result in conscious non-compliance increasing the risk above what has been assessed as acceptable.

Two commonly referenced elements of risk are the likelihood and consequences of a hazard occurring. Civil Air agrees that the classification of the RPAS according to weight is an appropriate method to assess the consequences of a collision between an RPA and a manned aircraft. However, the analysis used to determine the classification should be independent, transparent and supported by evidence. As far as possible, analysis should be supported international research. Provided the categories of RPA currently being considered by the Part 101 amendment are supported by this analysis, Civil Air has no objection to them being used as one element of a risk mitigation strategy. Together with the consequences of RPAS colliding with manned aircraft, the likelihood of this occurring should form the basis of any regulation. Civil Air submits that the most important element when considering the likelihood of a collision between an RPA and a manned aircraft is the airspace in which the RPA will operate.

It is self-evident that the highest likelihood of a RPAS colliding with a manned aircraft is in busy airspace around major cities. To manage this busy airspace, controlled airspace (where a separation service is provided by ATC) typically extends about 10-15 NM from an aerodrome and extends from the ground up. This airspace is known as a control zone (“CTR”). Clearly, the more RPAS operations in a CTR, the higher the risk of collision between RPAS and manned aircraft. It follows that limiting the number of and/or regulating RPAS operations in this airspace is a valid method of mitigating this risk. Civil Air submits that to both manage and regulate RPAS operations in CTRs, only operations for hire or reward should be permitted. This would have a dual effect of limiting the number of RPAS operations and permits a higher level of regulation for a fewer number of operators.

Although the distinction between ‘private’ RPAS operations and those for hire and reward can be useful, using this distinction as a collision risk mitigator should be used with caution. The regulation of hire and reward RPAS operations, including pilots, can be effective as a collision risk mitigator, however Civil Air submits that the most effective mitigator is still the segregation of RPAS operations from manned aircraft unless strict controls are in place.

The regulation of RPAS is in a state of flux as States undertake similar processes to Australia. It is unlikely that ICAO will develop comprehensive guidance in time to be considered for wholesale adoption by Australia. However, the risk analysis performed by CASA, and assumptions that underlie them, should be tested against the research by other regulators. This will not only provide more confidence that Australian regulations will be strong and suited to their purpose, but will also ensure that Australia can influence international debates and rule-making thereby reducing transition issues when ICAO implement universal standards

As submitted above, limiting RPAS operations in CTRs to those for hire and reward has two advantages. It limits the number of RPAS operations in busy airspace and provides the opportunity to place a higher regulatory burden on operators. This burden would not be onerous but having more stringent education and licensing requirements would result in a higher standard of operator in busy airspace where the risk of

collision with manned aircraft is highest. Of course, the opposite also holds that less experienced and/or competent operators would not be conducting RPAS operations inside busy control zones.

Civil Air also submits that private RPAS operators should also be regulated albeit not to the same degree as commercial operators. Education of the regulatory regime under which RPAS operate would be the bare minimum required. Registration could also be used a method of identifying and therefore communicating with private RPAS operators.

One of the most important tools an ATCO has to safely separate aircraft is surveillance. Generally speaking, surveillance in Australia is provided by Secondary Surveillance Radar (SSR) or Automatic Dependent Surveillance-Broadcast (ADS-B). Both require the aircraft to be fitted with a 'transponder' that allow air traffic control to 'see' the aircraft. Recent developments in the miniaturisation of ADS-B have resulted in smaller transponders particularly suited to RPAs. The addition of ADS-B to RPAs conducting operations around busy aerodromes could enable ATCOs to more effectively monitor and/or apply separation between RPAs and manned aircraft. It could also provide another safety barrier for unauthorised RPAS in the form of a safety alert to manned aircraft (workload permitting). Regulation would also be required to ensure that altitude and position information transmitted by ADS-B had sufficient integrity for ATC to provide the required level of service to manned aircraft.

A primary function of the air navigation service provider (ANSP) is to provide separation between aircraft in controlled airspace. Subject to any change in the definition of aircraft, RPAS are aircraft. CASR Part 172 and the associated Manual of Standards prescribe minimum separation standards between aircraft in controlled airspace. ATCOs are required to apply these standards.

In a CTR the typical separation standard applied between two aircraft under surveillance is 3NM or 1000 feet. Under the proposed regulations, an 'excluded RPA' in 'standard RPA operating conditions' can operate in CTR without an ATC approval provided it is not above 400 feet and not closer than 3NM from a controlled aerodrome boundary. Therefore, and assuming an RPA is an aircraft for the purposes of the Part 172 Manual of Standards, this means the ATCO must separate manned aircraft from the RPA in a CTR. If the ATCO is not aware of the RPAS operation they cannot separate the RPAS from manned aircraft. This puts the controller in an untenable position – they are required to separate manned aircraft from RPAS that they are not aware of.

The current requirement for ATC approval for RPAS operations in controlled airspace (including CTRs) above 400 feet and all levels inside 3NM from the aerodrome boundary will reduce the likelihood of manned aircraft arriving and departing from major aerodromes operating in close proximity to RPAS. In these instances, where ATC approve RPAS operations they will be primarily responsible for managing the risk of collision between RPAS and manned aircraft.

Major cities often have helipads that require helicopters to operate below 400 feet. These helicopters must be provided with separation service by ATC whilst airborne. As helipads are often more than 3 NM from an aerodrome, ATC may not be aware of RPAS operations being conducted below 400 feet in the vicinity of the helipad. In these instances, ATC cannot ensure the helicopter is separated by a prescribed separation standard and therefore cannot be responsible for managing the risk of collision between the RPAS and helicopter. In light of the absence of separation standards between RPAS and manned aircraft, Civil Air understands that Airservices Australia is currently developing 'segregation standards' for ATCOs to apply. While Civil Air supports the development of these standards, we remain concerned that these are only necessary because there is no regulation in this area.

Civil Air strongly submits that clearly defined rules for the separation or segregation of RPAS and manned aircraft must be promulgated by the regulator to ensure not only the safety of pilots, passengers and the public on the ground, but give certainty to ATCOs as to their responsibilities.

Yours sincerely,

TOM McROBERT
PRESIDENT