



Dr Jane Thomson
Committee Secretary
Senate Standing Committees on Rural and Regional Affairs and Transport
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Parliament House
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Dear Dr Thomson

Thank you for the opportunity for the NSW Government to provide a submission to the Parliamentary Inquiry: *Regulatory requirements that impact on the safe use of Remotely Piloted Aircraft Systems, Unmanned Aerial Systems and associated systems.*

Remotely Piloted Aircraft Systems (RPAS) present significant opportunities for the NSW Government. In fact, many Departments are already trialling and deploying RPAS in many capacities. Drones have been deployed to assist to, control weeds in Kosciuszko National Park, inspect bridges, spot sharks as part of the Shark Management Strategy in Port Macquarie, assist with surf lifesaving and manage water quality in Darling River.

However, the rapid evolution of RPAS technology and increased use of RPAS raise a number of concerns including privacy, security considerations for critical infrastructure, and the potential interference with aircraft used by emergency services.

As the market for this technology is still maturing and given the complexity of the issues that must be considered, the NSW Government recommends that the regulation of RPAS be referred to the Transport Infrastructure Council for proper consideration and potential regulatory reform. This will help to facilitate the adoption of a nationally consistent approach for all Australian jurisdictions.

Some further detailed comments are attached for the Committee's consideration.

I trust this is of assistance.

Yours sincerely

Clare Gardiner-Barnes
Deputy Secretary
Freight Strategy and Planning

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REGULATORY REQUIREMENTS THAT IMPACT ON THE SAFE USE OF REMOTELY PILOTED AIRCRAFT SYSTEMS, UNMANNED AERIAL SYSTEMS AND ASSOCIATED SYSTEMS

1. Future long-term opportunities

NSW Government Departments are already using RPAS to more efficiently fulfil their responsibilities related to inspection and surveillance. Examples include assisting in surf lifesaving, controlling weeds in Kosciuszko National Park, inspecting bridges, spotting sharks as part of the Shark Management Strategy in Port Macquarie and managing water quality in Darling River.

However, the market for this technology is still maturing and how it will be used is yet to be determined. As this technology develops and becomes more affordable, there will likely be many more opportunities for its deployment.

For instance, many have seen the potential for freight delivery by RPAS. Should the delivery of freight by RPAS become more common, there will need to be further consideration of issues such as the potential for RPAS to distract vehicle drivers, present a hazard for pedestrians, or for the communication frequency being used to control such devices to interfere with the communication between vehicles and road infrastructure as we move towards connected and automated vehicles.

Similarly, there would need to be consideration of the potential impact of RPAS technology on NSW's rail and shipping networks. The NSW Government considers that there should be a nationally consistent regulatory regime for RPAS which considers the safety and security of these transport networks and other critical infrastructure.

To that end, given the complexity of the issues that must be considered, the NSW Government recommends that the regulation of RPAS be referred to the Transport Infrastructure Council for proper consideration and potential regulatory reforms.

2. Surveillance (including during emergency situations)

Privacy

The NSW Privacy Commissioner, Dr Elizabeth Coombs, noted in her 2015 report to NSW Parliament¹ that developments in technology, including RPAS, have facilitated the physical surveillance of individuals in private and public locations, often unbeknown to the individual under surveillance.

The Privacy Commissioner conducted a public survey in response to which surveillance was raised as a major privacy concern. One respondent noted that "The potential proliferation of drones (in the future) by persons for no good

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http://www.ipc.nsw.gov.au/sites/default/files/file_manager/20150212_Privacy%20Commissioners%20Report_FINAL_low-res.pdf

purpose other than to sticky beak and harass private citizens i.e. invasion of one's personal space."

NSW Rural Fire Service - Authorised use of RPAS

NSW Rural Fire Service (RFS) operated RPAS (both light versions and medium size) have the potential to improve the information gathering units of emergency services and ultimately assist with improved decision making.

The development of authorised RPAS capability through the State Air Desk (SAD) could align with recent aviation review recommendations to form an aviation sub-plan under the emergency management framework.

The NSW RFS is proposing to undertake an RPAS trial in the first quarter of 2017 to investigate current opportunities within this rapidly changing technological field.

Unauthorised use of RPAS

The NSW RFS has significant concerns about the recent deregulation of RPAS by the Civil Aviation Safety Authority (CASA). The use of RPAS at fires and other emergency operations impact on the safety of pilots and aircraft working over fire grounds. RPAS should not be operated over an area where a fire or other emergency is being managed, without clearance from a person in authority, such as an Incident Controller.

Unauthorised RPAS incursions over NSW RFS fire grounds have occurred on a number of occasions, including two serious incursions that breached Subpart (e) of the Civil Aviation Safety Regulation 101 Standard Conditions.

The NSW RFS considers that following CASA's deregulation of the two kilogram RPAS, and as RPA affordability increases, the number of unauthorised incursions over fire grounds is likely to increase, which increases the potential of shutting down aerial firefighting operations.

3. Security and Law Enforcement

The NSW Government, via the NSW Police Force, has deployed RPAS in search and rescue, counter terrorism, bomb response, tactical operations and crime scene contexts.

Currently, law enforcement RPAS operations are classified by CASA as commercial operations. The Committee may consider that a law enforcement category of RPAS licence be established to allow a range of special exemptions permitting police to perform tasks in conditions, locations and circumstances that commercial operators cannot. Additional application of RPAS technology in the fields of enforcement operations and safety initiatives across Government agencies should be explored in the near future.

In addition, the NSW Government seeks to progress the regulatory development of beyond visual line of sight (BVLOS) operations, which is currently being considered by CASA. Currently, obtaining approval from CASA for BVLOS operations is limited and only considered on a case-by-case basis, following vigorous risk assessment of the intended operation.

The use of RPAS has been considered for aerial surveys of crash sites where an indictable charge may arise from a serious injury or fatal event. At this stage, the available software does not produce a survey that meets the evidentiary standard. However, the NSW Government remains open to considering the use of RPAS as the technology improves in the area of law enforcement.

Security Risks – Critical Infrastructure

The NSW Government notes with concern the increasing number of cases of unauthorised and criminal use of RPAS, as well as new safety risks.

RPAS present an increasing security risk to critical infrastructure assets and places of mass gathering. The ability to remotely deliver a 10kg package to an exact location from 2km away exists now. This could be exploited by threat groups. Incidents of RPAS using weapons overseas have been reported, including the use of firearms, explosives and chemical weapons.

There is currently no reference to any regulation or controls around the external loads that an RPAS is authorised to carry. Similar to Dangerous Goods movements on roads, restrictions should be clearly documented and communicated to recreational and commercial operators.

There has been an increase in the frequency of RPAS incursions into the restricted airspace around the Sydney Harbour Bridge, with now two crashing onto the Sydney Harbour Bridge road deck during September / October 2016.

The NSW Government has been engaged by CASA on the recent changes to RPAS legislation. However, as noted above, there is currently limited scope to enforce the RPAS-related regulations.

CASA is working with the NSW Government on the implementation of restricted areas around critical infrastructure sites. A public education campaign, including signage and television advertisements, may also assist.

4. Compliance and Enforcement

Whilst the *Civil Aviation Regulations 1998* and *Civil Aviation Safety Regulations 1998* provide for the operation of RPAS and relevant offences for their misuse, it is noted that on 29 September 2016, significant amendments were made to the CASR, which relaxed the restrictions for RPAS operation. For example, some RPAS can be operated safely in Australian airspace without certification.

The CASR makes it an offence to operate RPAS closer than 30 metres to vehicles, boats, buildings or people. The NSW Government believes that this requires a complex determination involving both a subjective and objective risk assessment of all the circumstances at the time of operation and can vary depending on the type of RPAS being operated. The explicit inclusion of 'transport infrastructure (roads, bridges, tunnels, wharves, and rail and bus stations)' should be considered by CASA.

The NSW Government has been engaged by CASA on the recent changes to RPAS legislation. However, as noted above, there is currently limited scope to enforce the RPAS-related regulations. Whilst CASA is working with the NSW

Government for implementation of restricted areas around critical infrastructure sites, there is currently no signage around the Sydney Harbour Bridge and other assets to educate the community on restricted air space and exclusion zones around sites. A public education campaign, including signage and television advertisements, may assist.

There are no labelling or other educational requirements to alert consumers to their responsibilities as an operator or the risks of non-compliance with the CASR. Currently RPAS are bought, sold and advertised as toys. The NSW Government's view is this creates a misconception that they pose no risk to the community or other aviation operators.

The current options for stopping RPAS (other than using a projectile weapon) include the use of jamming, kinetic and energy technology. Currently, most options for stopping RPAS are generally illegal and may have unintended consequences. The NSW Government is aware of emerging technology (overseas) that has an application as a safe countermeasure against a wide range of RPAS models.

GPS geo-fencing, which disables RPAS from operating within a set geographical area, could be improved to restrict the altitude of RPAS and prevent use within highly populated areas or near critical infrastructure assets.