

Ministry of Transport

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*Civil Aviation Bill Exposure Draft Commentary Document*

Thankyou for providing the opportunity to offer comment on the exposure draft. Jackson UAS Ltd is a UAV Servicing/Operation/Certification consultant for the New Zealand UAV Industry. We are exposed to large number of commercial UAV operators within New Zealand and have background in Aviation Engineering.

#### *Nomenclature/Definitions*

“Drone” is a colloquial term for UAV/RPAS. “Drone” has many negative connotations associated with it due to the media’s portrayal of UAVs. I would suggest using another term such as UAV (Unmanned Aerial Vehicle), UAS (Unmanned Aircraft System), RPAS (Remotely Piloted Aerial System) which will provide a much better definition for the document.

#### *90. Accident/Incident Reporting*

Due to the greatly varying uses of UAVs in New Zealand, from industrial asset inspection to recreational racing, requiring all accidents to be reported, even with some nuancing of what is reported, would likely result in poor uptake by many operators, and at the same time generate a large amount of noise.

The “nuancing” needs to be tightly defined, to provide data useful data to the CAA, and not 400 reports of crashed model aircraft and racing quads on a Sunday afternoon. Perhaps weight, or use (recreational/commercial), could be used to determine what is reportable.

#### *93. Pilot In Charge*

The definition of PiC should remain the same between manned and remotely piloted aircraft. “Pilot” as a definition implies responsibility, referring to “Drone Operators” is possibly misleading and will setup a culture where the same standards do not apply to both groups. Whether or not the Pilot is inside the aircraft or not is irrelevant to the definition.

Pilotless aircraft require a separate statement, with likely the prime person of the organization being given the title of Pilot In Charge.

#### *94. through 106. Detention, Seizure and Destruction of Drones*

“Gatwick incursions” is referenced in this document, however it has yet to be proven there was a drone at Gatwick at all. It’s entirely speculation and may never be confirmed. However, it does raise some interesting questions around the medias role in reporting these incidents, to ensure hysteria doesn’t ensue.

Currently 101, and many 102 operators are not permitted to carry out flight over property without permission, due to the risk introduced of not knowing the hazards of the associated property, and the risk of the aircraft crashing into people or property.

It is unreasonable to expect law enforcement to be able to ascertain the same risks, before intentionally crashing it in the property below. Either through jamming or a projectile, the aircrafts flight path post interference will be for the most part unknown and is likely of much greater risk than the UAV remaining in the air. Locating the pilot will be of much greater utility and will be much safer to land the UAV in a controlled manner.

The “low property value” of the drone is irrelevant, if for instance, it crashed, post law enforcement interference, into a moving vehicle.

“Jamming” as a means to remove a UAV from the sky is an extremely hazardous undertaking for a number of reasons and would require the operator of the jamming equipment to meet the requirements of the Radiocommunications Act as a “permitted person”. Expecting a law enforcement officer to also carry this qualification is poorly considered.

Most commercial UAVs operate in the ISM Bands, 2.4 GHz and 5.8 GHz. “Jamming” of these bands to disrupt the C2 (Command and Control) link to the aircraft will likely, depending on the UAV and its settings, to initiate a Return to Home system, at which point there is no Pilot for the aircraft and the risk of collision increases. As the law enforcement officer does not know where “home” is, or they would have apprehended the Pilot and have no need for jamming the C2 link, they also do not know which direction the aircraft will go, or at what altitude. “Jamming” the C2 link turns a likely stable, predictable, situation into an unpredictable one.

The nature of the 2.4/5.8GHz ISM band means all Wi-Fi, Bluetooth, and many other technologies including communication use it. The officer operating the jammer will have to take into consideration all the other, possibly critical, systems in the area that will be jammed.

The other option for “jamming” of a UAV is to deny it GNSS positioning. This is also inherently a poorly considered idea. Primarily, without a GNSS position the UAV is likely to be totally out of control, it will not descend however it will drift unless the Pilot is capable of flying it without GNSS positioning assistance. The secondary effect of jamming GNSS reception is every other system in the area, including manned aircraft with PBN, will also lose their GNSS positioning fix.

The remaining option is to “destroy” the drone, presumably with a firearm, which again does not guarantee the UAV would descend straight down. Its very possible to disable a sensor in flight and end up with out of control, unpredictable, situation again. Let alone the possibility of the officer missing and the projectile hitting something else.

Whilst giving law enforcement, once properly educated with the CA Act and CAR 101/102, the ability to seize a UAV is sensible, allowing them to forcibly remove it from the airspace is likely significantly more hazardous than simply apprehending the operator.

*247. Levies applied to non-holders of aviation documents.*

I'm uncertain as to why the CAA would need to levy an uncertificated person? Would the levy be applied at point of sale of the UAV in the example? CAR 101 applies to everyone flying a UAV/Model Plane/Balloon etc. this would allow the CAA to levy a fee against a child playing with a foam glider in a park?

The purpose of this needs to be much more defined, and justified, before being considered.

**Sincerely,**

**Chris Jackson**

**Director  
Jackson UAS Limited**