Ministry of Transport
TE MANATŪ WAKA

# Early Engagement on Drone Safety and Regulation

# Summary of Written Stakeholder Feedback

*This document summarises for reference the written feedback received from stakeholders who responded to the early engagement document on the drone safety and regulatory work, September – November 2019. The Ministry of Transport has removed any identifying information to protect the anonymity of the individual submissions.*

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# Early Engagement on Drone Safety and Regulation

## Overview of written feedback

This page outlines the general themes of feedback in relation to the overarching questions asked in the Early Engagement on Drone Safety and Regulation Document, circulated with key stakeholders from September to November 2019.

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ARE THE CURRENT OFFENCES AND PENALITIES FOR DRONES WORKING WELL?


[1] Numbers used to populate these graphs were based on the 12 written submissions received.

## Introduction

From September to November 2019, the Ministry of Transport (the Ministry) sought key stakeholder feedback on questions raised in the early engagement document on the drone safety and regulatory work, as well as ideas that would work for New Zealand.

The document presented the Ministry's early thinking on:

- the various challenges and opportunities, both now and into the future with drones;
- the problem definition; and
- the policy approach on potential regulatory measures.

The Ministry received 12 written submissions, from the unmanned aviation sector, including drone manufacturers, the model aircraft association, commercial operators, training organisations; the manned aviation sector, including airlines, airports, key organisations such as airlines and pilot's associations; and local authorities.

This document provides a summary of responses to each question posed in the early engagement document.

## General comment summary

Comment was varied, but most stakeholders generally agreed with the overall approach and proposed regulatory package. A few stakeholders suggested that registration and pilot competency should be prioritised within the work programme.

The current, two-tiered, risk-based regulatory regime is well regarded with most key stakeholders. However, there was suggestion that simplification and clarification of the Part 101 rules need to happen to improve compliance.

Some stakeholders asserted that there is a disparity between actual drone use (i.e. both numbers of drones and number of incidents) and what is being reported.

## Problem definition summary

New Zealand Civil Aviation Rules Parts 101 is quite prescriptive in that there are exact requirements you must stick to, whereas Part 102 is risk-based and can accommodate advanced drone operations. However, the operating environment has changed since the rules were updated in 2015. The increasing use of drones has highlighted a number of safety, security and privacy risks that have prompted the Ministry, with the Civil Aviation Authority (the CAA) support, to review New Zealand's drone regulatory settings.

Our problem definition, set out in the early engagement document detailed four core components of the problem: compliance, enforcement, proportionality and system sustainability.

**Questions**

*i. What is working well at the moment? What is not working?*

The majority of stakeholders believed that the risk-based rules regime was generally working well. There was also continuing support to not make a distinction between recreational and commercial operations. Some elements, such as the 400 feet maximum height, are consistent with other international jurisdictions. There was emphasis that these elements should be retained.

Although there was general comment that Part 101 rules need simplification, most asserted that they are working well for many operators. Part 102 has a high trust level and allowed a good amount of flexibility in a rapidly changing environment.

Also, approval for flight in controlled airspace in the vicinity of airports appears to be working but has some scope for improvement.

In terms of what is not working, most stakeholders agree that the increase of drone use, diversity of use and technological capability have resulted in increased potential for harm. They are increasingly concerned about improper use of drones and their effect on safety and operational risks to other airspace users and ultimately the public.

Some stakeholders affirmed that aspects of Part 101 are confusing and are not risk-based in nature. It was suggested that the four kilometres of controlled airspace around an airport or aerodrome should be from the boundary of the airport not the centre.

Similarly, the Part 102 certification was seen by some to be too strict and onerous when it is required for some very basic variations of Part 101. Due to this, some stakeholders believed this process is slowing the speed of market development and creating a significant backlog of Part 102 applications for the CAA.

*ii. Have we got the problem definition right?*

Broadly speaking, most stakeholders agreed that the problem definition was correct but differed on proportionality and system sustainability. Some stated the that system sustainability strays into economic regulation and that proportionality is understated and needs to play a more fundamental part of integration of an unmanned aircraft into the wider aviation system. Another stated that some requirements in Parts 101 and 102 are perceived as disproportionate and unjustified for certain operations.

Those who disagreed with the problem definition thought there needed to be more accuracy with data and a clearer definition of the problem. More specifically, there are questions around the size of the problem, and whether there is enough data to back up the need to make any changes (e.g. drone incidents were decreasing).

*iii. What are we missing?*

Comments were made about CAA capability and resourcing problems, with long waits for Part 102 applications.

It was suggested that appropriate powers be given to suitably authorised agencies, including Police, to remove drones from airspace when they are causing any risks. Some stakeholders also outlined that proposed measures did not include the ability to track and bring down drones.

With respect to data being selected and processed, stakeholders believe it may become meaningless if it is not further/better categorised.

## Options

This section outlines some options that the Ministry has been considering, why they are being considered, what others jurisdictions have done, and the Ministry's initial thinking about them.

### 1. Changing who and what rules apply to

Drones flown in New Zealand are subject to the Civil Aviation Rules, regardless of size and capability. The rules and the level of approval required to fly a drone are differentiated by weight and types of operation.

#### Questions

*vi.* *What is the best way of determining the level of risk in the New Zealand context?*
*vii.* *Should we exclude very small/low-risk drones from the Civil Aviation Rules? If so, what should the threshold be?*
*viii.* *What sort of differentiation would make sense?*

Overall, stakeholders agreed that the combination of weight, speed and type of operations is a good indicator for determining the level of risk and differentiating categories. More specifically, the majority supported the introduction of 250 grams as the minimum threshold for the application of the relevant Civil Aviation Rules for safety reasons (i.e. exclusion of drones less than 250 grams that are low-risk) and/or for alignment with other jurisdictions.

Others recommended a minimum threshold of 500g based on using a risk based approach, e.g. drones below 500 grams are excluded from the rules, except for flight in close proximity to an aerodrome. One did not support exclusion based on weight, as even small drones can present safety risks.

There were suggestions that weight should not necessarily exclude lighter drones, but could have lesser restrictions on those lighter drones who present less risk.

One stakeholder proposed an alternate differentiation, based on weight categorisation. This means the creation of certain weight brackets that would have particular rules and varying level of certification.

*ix. How might special authorisations work?*

Overall, there was support for special authorisations in the case where it would apply to CAA-approved organisations (e.g. Part 149 Recreational Aviation Organisation) that have high requirements of competency for their users (e.g. aeromodelling/model aircraft association, drone racing associations), and which can show a strong element of self-policing. This could be achieved through some form of formalisation of operational procedures and risk management processes

However, there were suggestions that special authorisation for entities or zones could result in inconsistency of application – which could cause unnecessary complexity.

## 2. Relaxing the Part 101 requirements

This section sets out additional rule updates that were not captured in the section above. These are based on feedback provided to the CAA's 2017 Part 101 and 102 post-implementation survey and continued engagement with the sector. These proposals aim to ensure better compliance and improving proportionality by reducing the regulatory burden on users where appropriate.

*Relaxing or removing the consent provision*

**Questions:**

*x. How do you think the consent provision is working, in terms of safety, privacy and nuisance?*
*xi. Should we retain the consent provision?*
*xii. If we remove the consent provision, how can we manage safety, privacy and nuisance concerns? What could we replace it with?*

This section gathered largely negative feedback from stakeholders on the performance of the consent provision. The consent provision is described as confusing and difficult to comply with. Some said it would be better replaced by the setting of safe distances or a height restriction.

Those who are generally in favour of the consent provisions stated it was important for safety and privacy, but believed it needed improvement. There was a suggestion that clearer statements of minimum approach distances to people and sensitive sites would help, although enforcement would become much more difficult. There was also a suggestion that streamlining the consent application process would improve the consent provision as well.

*Other Rules changes*

**Questions**

*xiii. Do you agree that these are the areas we should focus on?*
*xiv. Do you have any specific comments on the proposals?*

*Feedback regarding relaxing spotter/observer requirements for first person view operations:*

There was general agreement that the spotter/observer requirements should be relaxed. The observer requirement is believed by some stakeholders to be unjustified, thus resulting in poor compliance, particularly when there is no conflict with other aircraft.

*Feedback regarding reviewing the distance restrictions around aerodromes:*

This received mixed feedback. A 'one size fits all' approach was believed by stakeholders not to be justified, given the maximum altitude limit for drones and the diversity of aerodromes in New Zealand (e.g. in terms of size, shape, location, density of operations),

Conversely, some stakeholders viewed the distance restrictions around aerodromes as a key measure for ensuring safety. There is no demonstrated need for change, but there is merit in better clarification of where the four kilometres restriction applies. There is also feedback highlighting it is important that this requirement be kept simple for non-aviators.

*xv. Have we missed anything?*

There was a suggestion that any proposal to relax aspects of Part 101 would require better drone user education and training.

There was also consideration about specific exemptions regarding specific circumstances for flying beyond visual line of sight.

One submission suggested the development of rules for flying multiple drones simultaneously, as well as a certificate of airworthiness or equivalent for drones exceeding 15 kilograms, and compulsory insurance for all operations above 250 grams and all commercial operations.

## 3. Registration

New Zealand does not have a registration system for drones. Part 101 exempts drones from the existing registration requirements that apply to manned aircraft. This section proposed that a registration system could be implemented to encourage better compliance, enforcement of rules and aide system sustainability.

### Questions

*xvi. Do you seen value in implementing a registration scheme for drones in New Zealand? Why/why not?*

*xvii. Do you see any alternatives to registration that would achieve a similar job?*

*xviii. If we opt for registration scheme: what would you like to see and what should we avoid?*

*xix. What impact would registration likely have on you?*

Stakeholders were mostly in favour of a registration system. It was generally accepted that a registration scheme for drones is the most appropriate option to improve authority's ability to identify those who breach the rules, as well as serve as a deterrent for misuse to others. Most stakeholders believed that it would deliver material benefits in improving compliance with the rules, enforcement, database accuracy, and open communication channel with drone users. It would also be a key enabler for the integration of drones into the aviation system, particularly if delivered alongside operator competency and remote identification.

Those who would like to see a registration system thought that the system should be easy, cheap and quick – preferably online or in a phone application.

Those not in favour of a registration system thought that it would not increase safety or assist enforcement. There were several reasons given, most prominent being that a registration system would be easy to bypass and ineffective on rogue operators. It is also stated that this would be an unnecessary and significant burden on responsible recreational users and a large cost to those who own multiple drones.

Others mention that, while many countries have implemented it, there is still no objective evidence that supports the efficacy of registration.

**4. Operator competency**

We are considering the option of introducing compulsory basic competency testing requirements for Part 101 operators. This would effectively be an education tool to improve operator's awareness of the airspace and understand relevant rules and risks of flying drones. The aim would be to improve compliance.

**Questions**

*xx.* *Do you see value in having an operator competency testing requirement for drone operators?*
*xxi.* *What else could we do to improve education and drone operator behaviour?*
*xxii.* *If we opt to introduce operator competency testing, what would you like to see and what should we avoid?*
*xxiii.* *What impact would operator competency testing likely have on you?*

Feedback on the idea of operator competency was largely positive.

For those in favour of mandatory operator competency, this option was seen as a good way to ensure better drone operation safety through better compliance with the rules.

Some drew a distinction between commercial and recreational users and the need for testing to address the differing level of competency required by each. Distinctions were also made with weight, being that a heavier drone requires more intensive testing.

Most stakeholders preferred the idea of a web-based approach but one noted that any new scheme without some type of verification is flawed. Also, measures introduced should be mandatory and not be easily avoidable, ignored or easily cheated.

## 5. Remote identification

Remote identification refers to technology that sends out drone identification information during a flight, without needing physical access to the drone. The primary benefits of this option are that it would improve enforcement and compliance as well as encourage system substantiality and proportionality.

### Questions

*xxiv.* *Do you see value in introducing remote identification requirements for drone users?*

*xxv.* *If we opt to introduce remote identification requirements, what would like to see and what should we avoid?*

*xxvi.* *What impact would remote identification requirements likely to have on you?*

Most submissions were in favour of remote identification.

Those in favour thought that this option would enhance identification of users who are interfering with others' safety and enable successful enforcement. They would like to see a broadly applied scheme, with the adoption of a single national standard that is based on international standard, and that would avoid being limited to physical marking.

Those not in favour of implementing this option were concerned about the expense, effectiveness and lack of benefits. Some state that it is not a proportional approach. There were also questions around how this option would work in practice.

## 6. Geo-awareness/geo-fencing

Geo-awareness is a system that uses virtual barriers to detect and restrict drones from flying into designated zones. This option would help with enforcement, compliance and system sustainability.

### Questions

*xxvii.* *Do you see value in introducing geo-awareness requirements for drone users?*

*xxviii.* *If we opt for introducing geo-fencing requirements, what would you like to see and what should we avoid?*

*xxix.* *What impact would geo-awareness requirements likely have on you?*

This received mixed feedback. Some saw value in the implementation of geo-awareness requirements, while others did not, or at least not at this stage.

Those in favour of this option thought it was to ensure the protection of key areas of airspace and sensitive infrastructure. There was a suggestion that the CAA is the best authority to determine the areas that should be geo-fenced.

Some stated that, whist there is some value in geo-awareness, it is too costly and could be easily overridden at this stage.

Those not in favour questioned the preparedness of manufacturers to implement the technology and are concerned that each country may decide to adopt a different standard, making it very difficult for manufacturers to cope with costs. Some also said that it is not a necessary tool for threat detection, as there may be other more effective measures, such as labelling any unauthorised drone in restricted airspace as threat.

### 7. Import controls

The have been recommendations that Government introduces controls on the sale and import of drones, as a way of enforcing product standards for drones.

**Questions**

*xxx.* *Do you think we should be doing more to control the import and sale of drones?*

There was largely negative feedback to this option. The main reason being that cost and enforcement make it difficult and therefore such an intervention would be ineffective.

### 8. Offences and penalties

To ensure that the regulatory options outlined above are successful, offences and penalties may need to be created to ensure enforcement.

**Questions**

*xxxi.* *Do you think the current offences and penalties regime is working well?*

*xxxii.* *How could the offences and penalties be improved?*

xxxiii. *Should we consider introducing spot fines to respond to less serious drone offences?*

This drew mixed feedback, but overall feedback was positive as most stakeholders believed that current offences and penalties are working well.

Some believed that measures such as spot fines, infringement notices, and drone confiscations for minor offences or cases of negligence could be good ways to change culture and encourage better compliance. However, identification of the wrongdoer is crucial to ensure this worked. Moreover, the human error element needs to be considered.

Those not in favour of spot fines, or not wholly convinced by them, state that low-level offences may require significant level of training for relevant authorities and thus trigger resourcing issues. Others thought that new offences and penalties may vilify drone operators and that the current system should remain the same.