

Coversheet: New civil aviation regulatory powers

Advising agencies	Ministry of Transport
Decision sought	Agree to incorporate new regulatory powers into the Civil Aviation Bill
Proposing Ministers	Minister of Transport

Summary: Problem and Proposed Approach

Problem Definition

What problem or opportunity does this proposal seek to address? Why is Government intervention required?

Since the Civil Aviation Act 1990 (the 1990 Act) was enacted, the aviation sector has undergone a series of changes, including changes to aviation safety and security practices, and the introduction of new technologies. Incremental changes to regulatory powers have been made, but these powers and associated enforcement mechanisms have not been comprehensively updated.

The Ministry of Transport (the Ministry) is currently reviewing the 1990 Act, which presents an opportunity to modernise all aspects of the legislation, including alignment with other comparable legislation and work in other jurisdictions. The regulatory powers sought are aligned with, and additional to, policy proposals agreed to by Cabinet on 31 October 2016 [CAB-16-MIN-0568 refers], and on 15 April 2019 [CAB-19-MIN-0167 refers].

The Ministry has identified three further areas where regulatory and enforcement powers in relation to civil aviation could be modernised and/or made consistent with other legislation. These could also be addressed in the Civil Aviation Bill (the Bill). These include:

a) A proposal to enable the seizure, detention and destruction of unmanned aerial vehicles (UAVs)¹

UAVs (more commonly known as drones) differ from traditional aircraft in that the pilot is not on board, as they are controlled remotely. This includes autonomous vehicles or aircraft controlled by an operator on the ground or in another vehicle. UAVs vary in size, weight, cost, and purpose, and have become popular for recreational and business use. UAV technologies are rapidly evolving and becoming more accessible on the market for any person who wishes to procure them. In 2017, it was estimated that there were already 77,600 UAVs in New Zealand.

The increasing number of UAVs presents new safety, security, and privacy risks to the public and other transport system participants. The total number of UAV incidents reported to the CAA increased from 119 in 2015, to 506 in 2018². Airways (New Zealand's air traffic service provider) reports that, on average, there are two unauthorised UAV incursions into controlled airspace every week. While UAVs also present economic and social opportunities, these cannot be fully realised if there are no intervention powers for appropriate authorities to effectively combat unlawful UAV use.

The 1990 Act did not anticipate the proliferation of unmanned aircraft or the potential need to intervene against an aircraft in flight. For the rules currently regulating UAV use to be effective,

¹ UAVs are also known as drones, unmanned aircraft (UAs), or Remotely Piloted Aircraft Systems (RPAS).

² Reported incidents may not reflect the actual number of unlawful UAV operations.

they need to be supported by intervention and enforcement powers in primary legislation. UAVs present a clearly distinguishable circumstance to traditional aircraft, the potential proliferation of which was not contemplated when the 1990 Act was enacted. The Bill provides the best opportunity to set the right balance for intervention powers relating to unmanned aircraft for the future.

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c) A proposal to use the Bill as an opportunity to align regulator powers with those available under other regulatory regimes

The regulatory powers in the 1990 Act largely reflect the 1980s context of its development, with some incremental improvements in the intervening three decades. The Bill is an opportunity to refresh these provisions and support the regulator to take a risk based approach to regulation, using regulatory tools that we would expect to be present to support a best practice regulatory system.

Summary of Preferred Option or Conclusion (if no preferred option)

How will the agency's preferred approach work to bring about the desired change? Why is this the preferred option? Why is it feasible? Is the preferred approach likely to be reflected in the Cabinet paper?

Approval for these proposals will be sought in the Cabinet paper.

The Ministry recommends that new provisions are included in the Bill to:

- give individuals approved by of the Director of Civil Aviation (the Director) and constables the power to seize, detain and destroy UAVs (including its means of control) that are committing an offence under the new Civil Aviation Act or being used in the commission of imprisonable offences under other Acts.
- provide for the use of broad and proportionate regulatory tools as part of the regulatory system: enforceable undertakings, improvement and prohibition notices, and injunctions.

³ W-ECM is defined as any equipment or device that does any or all of the following: detect, intercept, disable, disrupt, or interfere with radiocommunications.

[Redacted]

The proposed regulatory powers would ensure that the Civil Aviation Authority (the CAA) and other suitable persons (where applicable) have a best practice flexible set of regulatory powers available to undertake their roles.

Section B: Summary Impacts: Benefits and costs

Who are the main expected beneficiaries and what is the nature of the expected benefit?

The primary benefit of the proposed powers, collectively, is that they will increase the ability to promote a safe and secure aviation system for New Zealand.

These proposals will ensure that authorised persons, as appropriate, are equipped with the tools they need to enforce compliance with safety and security requirements outlined in the Bill and in Civil Aviation Rules. They will also support the integration of emerging technologies, such as UAVs, into the aviation system: by ensuring there are effective means of responding to offenders, the “good” operators can more readily obtain the social licence necessary to expand their operations within the law.

The Ministry considers that each of these proposals is consistent with what would be reasonably expected in a best practice aviation regulatory system.

The beneficiaries of these proposals are:

Beneficiary	Benefit(s)
Public	Increased confidence that the aviation system is safe and secure.
Industry	The changes make for a more nuanced and proportionate range of interventions, and industry also benefits from a safer aviation system.
CAA	Improved access to regulatory instruments available to other comparable regulators in New Zealand. The new powers allow decisive and timely safety and security interventions.
New Zealand Police	Provides explicit powers to intervene where there is illegal use of a UAV, [Redacted] Withheld for security reasons
Government	Assurance that the regulatory system for civil aviation is updated to reflect changes to the aviation sector since 1990, and is aligned with current regulatory best practice in a way that also incorporates new and emerging technologies.

Where do the costs fall?

There are no financial implications directly associated with the legislative proposals in this paper. There will, however, be costs to operationalise these powers, which have been considered but not modelled.

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(a & b) Power to seize, detain and destroy UAVs, [REDACTED]

The cost of operationalising these powers will depend on a number of variables, including:

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- the initial cost of procuring any systems or technologies to enable this role [REDACTED]
- the ongoing cost of training personnel to fulfil this role, including ability to use the technologies, and understanding legitimate UAV uses
- administrative and operational considerations regarding the required size and scope of the pool of authorised persons, and process for becoming an authorised person
- the evolving state of intervention technologies, and UAVs, will have an ongoing impact on options, costs and lead times for any investment made to operationalise these powers, and
- investigation and testing of new technologies, which will be an ongoing cost as technologies emerge.

There is potential cost to aviation system participants (industry and the general public) where intervention results in destruction or damage to private property, including UAVs. However, the Ministry considers that this cost is reasonable when action is taken to maintain the law and public safety and security. We expect operational procedures to mitigate the risk to private property – e.g. considering the size and location of a UAV, and identifying other potentially affected parties, before selecting an intervention method. There will also be a means of obtaining compensation in the event the power is used inappropriately.

Non-monetised costs include the opportunity cost of directing constables or other authorised persons to respond to UAVs acting in contravention of the Civil Aviation Rules (i.e. use of limited time and personnel resources). The policy intent is that these powers will be an additional tool, and that the opportunity cost to constables will be minimal. However, this will require further attention during operational design if Cabinet agrees the policy decisions.

(c) Enforceable undertakings, improvement and prohibition notices, and injunctions

There may be small upfront costs for the CAA to develop operational policy to guide the use of these new powers, and train its staff in their use. However, we expect this to be minimal, given it can benefit from the knowledge and experience that WorkSafe has in operationalising the same powers, found in the Health and Safety at Work Act 2015.

What are the likely risks and unintended impacts? How significant are they and how will they be minimised or mitigated?

The likely risks and unintended impacts of these proposals are largely operational in nature and will be considered by the regulator (and Police) when developing operational procedures.

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(a & b) Power to seize, detain and destroy UAVs, [REDACTED]

UAV and counter-UAV technologies will continue to evolve

Careful design will be necessary to ensure that any associated legislative provisions will provide sufficient scope to address future technologies (such as new types of UAV, [REDACTED])

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is expected to be minimal, particularly if the separate regulatory programme for UAVs is progressed concurrently. This programme is assessing other initiatives to support the safe use of UAVs, such as registration and remote identification of UAVs and their pilots. [REDACTED]

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(c) Enforceable undertakings, improvement and prohibition notices, and injunctions

No risks have been identified. As the CAA already has, and utilises, these powers under the Health and Safety at Work Act 2015, it is already aware of how these instruments could be best implemented across the civil aviation sector. Therefore, the Ministry considers these proposals low risk.

Section C: Evidence certainty and quality assurance

Agency rating of evidence certainty

The evidence that exists gives the Ministry reason to believe that the UAV intervention powers, and the other regulatory powers proposed, have the capacity to address the identified risks to aviation safety and security from UAVs.

As the proposal is for enabling provisions, evidence of their effectiveness in practice will depend on how the intervention powers are operationalised and UAV operators behave in future. The costs of implementing the powers will be contingent on factors such as operational choices, technology deployed, and associated regulatory requirements.

Further consultation is anticipated on all items proposed in this Regulatory Impact Assessment, both within the legislative process, and as part of policy design.

To be completed by quality assurers:

Quality Assurance Reviewing Agency:

Ministry of Transport

Quality Assurance Assessment:

Partially meets the QA criteria

Reviewer Comments and Recommendations:

The RIA Panel at the Ministry of Transport has reviewed the RIA “New Civil Aviation Regulatory Powers” written by MoT and considers that it partially meets the QA criteria. The RIA clearly sets out criteria and these have been applied to the options in a way that makes it clear why certain options have been recommended. The panel recognises the limitations of the available evidence base, and for that reason, strongly recommends that before implementation, baseline evidence of the use of counter drone technology should be established, including through undertaking more testing and trialling against which the effectiveness of this policy and collateral consequences can be monitored in future reviews. There will also need to be further work done on when it will be appropriate to use different levels of interference within the graduate interference system suggested, as well striking the right balance in terms of content between operational procedures and the legislation. The impact analysis is constrained by the fact that the costs for the various options have been described in relative terms, but have not been quantified. The panel understands that this information cannot be obtained because of time constraints and lack of evidence.

Impact Statement: New civil aviation enforcement powers

Section 1: General information

1.1 Purpose

The Ministry of Transport is solely responsible for the analysis and advice set out in this Regulatory Impact Assessment, except as otherwise explicitly indicated. This analysis and advice has been produced for the purpose of informing:

- final decisions to proceed with policy changes, to be taken by Cabinet for implementation in the Civil Aviation Bill (the Bill).

1.2 Key Limitations or Constraints on Analysis

Public consultation was undertaken on high-level policy, but not on some technical detail of the proposals

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The proposal to establish unmanned aerial vehicle (UAV) intervention powers was included in a public discussion paper. [REDACTED]

[REDACTED] The proposals to enable for enforceable undertakings, improvement and prohibition notices, and injunctions (collectively, “other regulator powers”), have not yet been discussed publicly. The public will have an opportunity to comment on the inclusion of these powers at the select committee stage.

The range of options proposed for other regulator powers is constrained by the purpose of the proposals

We have only proposed one option other than the status quo for the suite of other regulator powers. However, this is consistent with the nature of the legislative reforms sought within the Bill. The purpose of these amendments is to align the Civil Aviation Act 1990 (the 1990 Act) with other pieces of comparable New Zealand legislation (such as the Health and Safety at Work Act 2015).

The future state of UAV and intervention technologies is unknown

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A key assumption that underpins the analysis for the UAV intervention powers, [REDACTED] is that these provisions are needed to enable the system to respond to an evolving regulatory environment. While the current state can be fairly easily legislated for, the analysis in this paper is constrained by the unknown direction of future technologies. These proposals seek to be technology and system neutral, to provide maximum flexibility for agencies to adapt to future environments, while protecting the rights of system users and property owners.

The analysis of these powers assumes that, in the future, these provisions will be broad enough to enable the Director of Civil Aviation and Police to decide how these powers would be best implemented, including funding and operational considerations. As such, these costs and operational technicalities have not been analysed at this time, other than to scope whether the powers provided in the Bill would be sufficient for future implementation by agencies.

Other jurisdictions are also considering how to effectively implement UAV intervention powers

New Zealand continues to work with other jurisdictions in terms of sharing lessons learned and frameworks for consideration. However, given how recently UAV proliferation has occurred, all States are still seeking to develop information and to test the efficacy of UAV interventions. Our ability to convey the full regulatory impact of the proposed powers is constrained by the limited data available from other jurisdictions.

1.3 Responsible Manager (signature and date):

5 March 2020

Shelley Tucker
Policy Manager – Resilience & Security
System & Regulatory Design Group
Ministry of Transport

Section 2: Problem definition and objectives

2.1 What is the current state within which action is proposed?

The scope of the aviation industry in New Zealand is broad, with participants ranging from airport companies and large and small airlines, to commercial operators, private owners, recreational users, and a range of craft from fixed and rotating wing, gliders, balloons, microlights, model and UAV operators, and associated functions such as air traffic control, engineering and goods handling. The government's role is predominately as a policy maker and regulator, although it has some ownership and operational functions.

The air transport sector, a subset of the broader aviation sector, is particularly significant for New Zealand's economy. 99% of international visitors to New Zealand arrive by air, making aviation a cornerstone of New Zealand's tourism economy. Passenger numbers through the five main airports (Auckland, Wellington, Christchurch, Queenstown and Dunedin) increased by 57% between 2006 and 2017. This was driven by increased domestic travel, more New Zealanders departing on overseas trips, and growth in the number of overseas tourists.

The context relating to UAVs is rapidly evolving, and presents specific opportunities and risks

Globally, UAVs are a relatively recent addition to the aviation sector. In New Zealand, the current regulatory regime was built to regulate conventional aircraft, operated with people on board. Given this, intervention powers were not anticipated in relation to aircraft in flight. This regime is now being challenged by the proliferation of unmanned aircraft.

Emerging technologies, such as UAVs, are reshaping the aviation industry. In 2017, the number of UAVs in New Zealand was estimated to be around 77,600, but this number could now be much higher. Work to determine the prevalence of UAVs in New Zealand's aviation system is ongoing. UAV technologies are advancing rapidly, with economic and recreational opportunities for aerial photography, leisure, freight, and the agricultural sector, among other benefits. However, this sub-sector also presents new legal questions and regulatory challenges.

The increasing number of UAVs presents new safety, security, and privacy risks to the public and other transport system participants. The total number of UAV incidents reported to the CAA increased from 119 in 2015, to 506 in 2018⁴. Airways (New Zealand's air traffic service provider) reports that, on average, there are two unauthorised UAV incursions into controlled airspace every week. While UAVs also present economic and social opportunities, these cannot be fully realised if there are no intervention powers for appropriate authorities to effectively combat unlawful UAV use.

Small-to-medium sized UAVs can already be purchased at electronics stores and online by members of the public. This means that an increasing number of people outside of the traditional aviation industry are now participating in the aviation system, including potentially interacting with traditional air space users or other UAV operations. This requires a distinct regulatory approach, to ensure new system participants are incorporated safely without limiting the ability of private persons to benefit from these new technologies.

New Zealand already has robust UAV rules in place that, if followed, provide for a safe aviation system. Internationally, our regime is considered progressive, particularly in terms of the risk-based and enabling approach to advanced operations. The gap in the current context is that there are no express powers to intervene if the rules are not being followed.

⁴ Reported incidents may not reflect the actual number of unlawful UAV operations.

2.2 What regulatory system(s) are already in place?

A number of people and agencies are involved in (or are proposed within this Regulatory Impact Assessment to be involved in) the development and enforcement of rules and regulations under civil aviation legislation:

Actor/agency	Role in the aviation system
The Minister of Transport	<ul style="list-style-type: none"> The Minister of Transport determines government policy and exercises statutory functions with respect to transport. Unless delegated to an Associate Minister, this includes responsibility for government oversight of civil aviation.
The Ministry of Transport (the Ministry)	<ul style="list-style-type: none"> The Ministry is the government's principal transport adviser. It provides impartial advice to the government in order to help it meet its objectives for transport (including civil aviation).
The Civil Aviation Authority (the CAA)	<ul style="list-style-type: none"> The Civil Aviation Authority is a Crown entity responsible to the Minister of Transport, governed by a five-member board. Its statutory objective is to undertake its functions to facilitate the operation of a safe and secure civil aviation system. The CAA is also designated to administer the Health and Safety at Work Act 2015 with respect to aircraft in operation.
The Director of Civil Aviation (the Director)	<ul style="list-style-type: none"> The Director has a number of functions and powers under civil aviation legislation including: <ol style="list-style-type: none"> controlling entry into, and operation within, the civil aviation system, through granting, suspending, revoking, or imposing conditions on aviation documents; taking any action that may be in the public interest to enforce the provisions of the Act and the Rules made under the Act, including inspections and monitoring. monitoring adherence to regulatory requirements relating to civil aviation.
New Zealand Police (Police)	<ul style="list-style-type: none"> Civil aviation legislation gives Police certain powers, particularly in relation to maintaining the security of the aviation system. Police also has a range of other law enforcement functions, some of which may interlink with the aviation system.

Key legislation

The Civil Aviation Act 1990 (the 1990 Act)

The 1990 Act governs the civil aviation system in New Zealand and sets the overall framework for aviation safety, security and economic regulation in New Zealand. The 1990 Act has been amended several times since its enactment, but has never been substantively revised. The aviation industry and the government regulatory environment have changed markedly over that same period, during which, New Zealand's aviation sector has been a major contributor to the national economy.

The Civil Aviation Bill (the Bill)

The Bill will repeal and replace both the 1990 Act and the Airport Authorities Act 1966. The draft Bill reflects recommendations from a 2014 review of the 1990 Act and the Airport

Authorities Act, the Domestic Aviation Security Review 2014/15, and the policy investigation into reducing the risks of alcohol and drug impairment in aviation, maritime and rail in 2014.

The Bill also presents an opportunity to ensure that the enforcement powers available to the CAA and other key participants in the regulatory structure are fit for purpose and future proofed to enable the safe and secure use of emerging technologies.

The Civil Aviation Rules

The aviation system is also regulated through the Civil Aviation Rules. New rules relating to UAV operation, Civil Aviation Rule Parts 101 and 102, were introduced in 2015. These Rule Parts include an outline of the legal uses for UAVs, and certification processes for certain activities where this is required (such activities are considered by the regulator to be higher risk than is acceptable for non-certificated uses). In April 2019, there were 104 UAV operators certified by the CAA to conduct operations outside of the parameters for non-certificated UAV use.

The UAV regulatory work programme

The UAV intervention powers proposed and assessed in this document are connected to ongoing UAV regulatory work being undertaken across government, led by the Ministry and the CAA. The focus of the broader UAV regulatory work programme is integrating UAVs into the aviation system, including reviewing the regulatory framework (particularly the Civil Aviation Rules), and considering new options such as registration, remote identification, and operator competency and testing courses, that could enhance the benefits and opportunities presented by UAV technologies while mitigating the risks those same technologies can pose.

2.3 What is the policy problem or opportunity?

The Ministry is currently reviewing the 1990 Act, which presents an opportunity to modernise all aspects of the legislation, including alignment with other comparable legislation and other jurisdictions.

Through consultation with industry since 2014, it has become clear that many aspects of the civil aviation regulatory system are due for modernisation. The 1990 Act has served its purpose well over the past 30 years, but has inevitably fallen behind other regulatory regimes and technological advances. For example, the CAA is designated under the Health and Safety at Work Act 2015, allowing it to accept enforceable undertakings. However, this has not yet been translated into civil aviation legislation more broadly.

While the existing Bill, supported by previous Cabinet decisions, does much to address the shortcomings in the existing Act, the Ministry has identified three further areas where regulatory and enforcement powers in relation to civil aviation could be modernised and/or made consistent with other more recent legislation. These can also be addressed in the Bill. These are outlined below.

(a) Power to seize, detain and destroy UAVs

The 1990 Act did not anticipate the proliferation of unmanned aircraft or the potential need to intervene against an aircraft in flight

There are currently no express legislative or regulatory mechanisms that provide powers for Police or other agencies to enforce against UAV incursions, or to prevent incidents *before* they pose an imminent threat to people or property.

Under existing powers, Police and others can take immediate action against UAVs and other threats such as motor vehicles being driven dangerously, provided there is an imminent threat to people or property. However, there is no express power to take action if the operation is committing an offence, but that there is no imminent threat to people or property.

For example, if a UAV enters the airspace above an airport, this airspace may be closed to prevent other aircraft from entering that area – thus removing the risk to other aircraft, but not providing specific means to remove the UAV so that airspace can be reopened and normal airport activities (such as commercial passenger services) can resume.

Powers exist within the 1990 Act in relation to detention and seizure of aircraft and aeronautical products, but these were developed in relation to conventional aircraft and do not contemplate the potential need to intervene against an (unmanned) aircraft in flight. These powers do not allow detention and seizure of aircraft in flight, which is entirely appropriate for aircraft with people on board. The 1990 Act provides for actions preventing take-off, or the CAA taking regulatory action against a pilot or operator subsequent to an event.

The key problem is that there have been real life situations in New Zealand and elsewhere where UAVs commit offences that cause significant economic or public nuisance issues, but any “imminent risk to safety or property” has been removed by actions such as closing airspace. This creates an intervention gap, which can reasonably be expected to get worse, for which there is no current mechanisms to address. Without specific legislative provisions, the Police and other agencies are limited in the immediate action that can be taken, to situations where an imminent threat to people or property can be identified. This is at odds with the government’s vision for UAVs, to enable a thriving, innovative and safe unmanned aircraft sector.

For the rules regulating UAV use to be effective, they need to be supported by intervention and enforcement powers in primary legislation.

Further to this gap analysis, international experience demonstrates that UAVs have the potential to cause significant risk and disruption to other aircraft, aviation operations and people on the ground. Many of our international partners are pursuing specific intervention powers, and are trialling intervention technologies.

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(c) Other regulator powers

The Bill presents an opportunity to align regulator powers with those available under other regulatory regimes

The Ministry considers that the civil aviation regulatory system would benefit from CAA having additional best practice regulatory tools found in other equivalent regimes, including the ability to accept enforceable undertakings, court injunctions to restrain contraventions of offences and improvement and prohibition notices.

The regulatory powers in the 1990 Act largely reflect the 1980s context of its development, with some incremental improvements in the intervening three decades. The Bill is an opportunity to refresh these provisions and introduce regulatory tools that we would expect to be present to support a best practice risk-based regulator, and to ensure the regime is kept in line with other overlapping regimes, principally the Health and Safety at Work Act 2015.

Enforceable undertakings

Statutory frameworks for enforceable undertakings support the operators and the regulator in reaching sensible outcomes where the operator is willing to make voluntary changes that would avoid the need to prosecute or take other action. They ensure that an operator is accountable for their promises, while giving certainty that no action will be taken if they honour them. Enforceable undertakings are a feature of many regulatory regimes including health and safety, competition, consumer protection and financial markets laws, and are being progressed for land and maritime transport.

Court injunctions to restrain contraventions of civil aviation law

Prosecution for an offence and administrative action such as removal of an aviation document are usually effective tools to deal with non-compliance. There are, however, circumstances where a participant may choose continued non-compliance, and to pay any fines that might eventuate. One option the 1990 Act uses to deal with this risk is to provide penalties for continuing offences in some cases, but that approach is inconsistent with the Legislation Design and Advisory Committee Guidelines and is not being carried over into the new Bill. An alternative is to provide for the regulator to apply to the court for injunctions to restrain breaches of statutory offence provisions. While these are available in the High Court's inherent civil jurisdiction, a statutory framework provides more certainty and prominence to its availability. Similar injunctions are used in a number of regimes including financial markets, and are planned in other parts of the transport regulatory system.

Improvement and prohibition notices

The 1990 Act provides a general power for CAA enforcement officers to enter aircraft and aviation related workplaces for the purposes of carrying out regulatory functions under the Act. While there, the enforcement officer can, if prompt action is necessary to prevent danger to people or property, exercise the powers to detain aircraft and prohibit or impose conditions on the use of aircraft delegated to that officer. These powers are very targeted and limited. The officer does not, for example, have powers under the 1990 Act to take immediate action beyond the use of the aircraft. However, these same officers could have such powers under the Health and Safety at Work Act 2015. To address this discrepancy, powers are proposed to issue improvement and prohibition notices that mirror the Health and Safety at Work powers. Such front line regulator powers are not needed for the Secretary for Transport.

2.4 What do stakeholders think about the problem?

(a) Power to seize, detain and destroy UAVs

As agreed by Cabinet in April 2019 [CAB-19-MIN-0167], the Ministry invited public submissions on these provisions via a commentary document that accompanied the exposure draft⁵ of the Civil Aviation Bill in mid-2019.

Through the submissions process, a wide range of views were presented by stakeholders on the proposals. The Ministry received 16 submissions from interested parties on this particular issue, with some submissions supported by other individuals (one submission received 66 endorsements from other submitters). Submitters ranged from model plane hobbyists and UAV operators, to airlines and airports.

Some individuals objected to the characterisation of the problem, as they disagree that there is sufficient evidence of unlawful UAV use to justify the proposed amendments. While this concern has been noted, agencies' data show that there have been increasing complaints to the CAA and incursions into controlled airspace.

The majority of submitters (including those opposed to the Ministry's preferred option) agreed that, to facilitate the integration of UAVs into the aviation system, it is necessary to develop legislation by ensuring legitimate users and people outside the aviation system can be appropriately protected from unlawful UAV activity, and that it is reasonable to enable some level of intervention action alongside a broader suite of enabling integration measures to balance the risks and opportunities associated with UAV use. Airlines and airports agree with the Ministry's view of the problem but had differing views on the preferred solution.

Further analysis of the submissions, including support for and opposition to the three options presented during public consultation, is provided in **Appendix One**.

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⁵ The exposure draft of the Bill and the commentary document are available at <https://www.transport.govt.nz/air/civil-aviation-bill/>

(c) Other regulator powers

The CAA has been consulted on the proposal to align regulator powers with those available under other modern regulatory regimes. Public consultation is not planned prior to the select committee stage of the Bill, due to the nature of these changes and the small impact these powers are likely to have on industry, although the public will have opportunity to comment at the select committee stage.

2.5 What are the objectives sought in relation to the identified problem?

The primary objective relating to this suite of proposals is to ensure the provisions in the Bill are:

- modernised to reflect changes in the aviation sector and regulatory best practice since the 1990 Act came into force.
- consistent with other relevant, more recent, New Zealand legislation (e.g. the Health and Safety at Work Act 2015 and the Customs and Excise Act 2018).

However, there are also problem-specific objectives, which are outlined below:

(a) Power to seize, detain and destroy UAVs

The objective sought is to ensure that the legislation provides a means to intervene against UAVs while they are in flight, if they are committing an offence under the Civil Aviation Act, or being used in the commission of an imprisonable offence. A requirement of this intervention is that there are no people on board the aircraft.

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(c) Other regulator powers

The objective sought is to align regulator powers in civil aviation legislation with those available under other modern regulatory regimes.

Section 3.1: Intervention powers to seize, detain and destroy unmanned aerial vehicles (UAVs)

3.1.1 What options are available to address the problem?

Option 1 – Status quo

The 1990 Act does not provide specific powers to take action in relation to an aircraft in operation. It provides for a focus on preventing take-off or the CAA taking regulatory action against the pilot or operator after the event.

If prompt action is necessary due to an imminent threat to people or property, constables can take immediate intervention action without a warrant. However, the status quo does not provide for the ability to take action against a UAV that is operating in breach of civil aviation rules in instances where it is not immediately apparent whether or not it poses an immediate danger to people or property.

Law enforcement agencies who take action against manned or unmanned aircraft that are obviously threatening persons or property are instead exercising their law enforcement functions (including preventing crime, keeping the peace and maintaining public safety) and rely on the availability of defences and prosecutorial discretion.

If the intervention options provided for by the 1990 Act are not strengthened within the context of the industry growth and change outlined earlier, it is likely that agencies' effectiveness will erode over time, as the powers in the 1990 Act will become further outdated and the characteristics of aviation activity shifts away from the scope of the existing powers.

Option 2 – Expand power to authorised persons to take action (*preferred option*)

The proposed power, under the Civil Aviation Bill, would enable constables and other suitably qualified and trained individuals authorised by the Director of Civil Aviation to intervene in relation to UAVs of any size, where the authorised person has reason to believe that the UAV is committing an offence under the Civil Aviation Act, or being used in the commission of any other offence for which a imprisonment is an available penalty. This option gives the Director of Civil Aviation oversight of the special intervention powers, including through directions given in respect of the use of the power, or, in the case of NZ Police, input into the operational procedures.

Authorised persons refers to:

1. individuals appointed by the Director, and
2. constables, in accordance with New Zealand Police operational guidelines.

The provisions will enable a broad suite of interventions. These would include the ability for an authorised person to use physical, mechanical and electronic means to:

- seize, detain or disable (including by destroying) a UAV, or its controller (e.g. remote control)
- prevent a UAV from taking off
- bring a UAV under their control

The proposed powers are graduated. This means that authorised persons will be enabled to exercise their judgment to use the most appropriate intervention in the circumstances, but they will be constrained by the scope of their authorisation, what they have been trained to do, direction issued by the Director, operational requirements, and most

importantly, a limitation making the power subject to the use of reasonable force. Extreme action, such as destroying a UAV, would be a last resort. However, graduated responses beneath this, such as the ability to seize a controller from an operator (and providing an express power to locate the pilot and/or controlling mechanism), are necessary for the enforcement of lower-level offences (i.e. offences in civil aviation law, or other imprisonable offences in other specified Acts, where threat to people or property is not immediately ascertainable or is not present).

There are a number of offences and penalties under civil aviation legislation, although not all of these relate to UAVs and UAV use. UAV-related offences include operating in controlled airspace or above private property without appropriate authorisation, operating above certain altitude, beyond visual line of sight, or at night without appropriate certification, and operating in a manner that causes unnecessary danger to people or property.

Various levels of the proposed intervention power might be used (once all necessary safety considerations have been made) in the following situations:

- trespass over private property, where administrative action is not practicable or another offence (such as breach of privacy) is being committed
- incursion into an airport's airspace, disrupting other uses of that airspace (e.g. scheduled passenger services)
- "pitch invasion" by UAVs at major sporting and cultural events
- UAVs being used to deliver illegal substances or other packages to a Corrections facility, and
- where a UAV is being used to obstruct responders in an emergency response situation (e.g. if a UAV is preventing a helicopter from responding to a bush fire because of its presence and proximity in the airspace).

All of the above scenarios are offences under the Civil Aviation Act⁶ and/or at least one other imprisonable offence under other legislation, but may or may not cause an imminent threat to people or property. Progressing this option would ensure that offending under the Civil Aviation and other Acts can be stopped even in the absence of an imminent threat. New Zealand Police and any other agencies employing persons authorised by the Director will build operational procedures to incorporate this power in the context of their respective roles.

This option places the power within the civil aviation law framework. This would ensure that the power is focussed on compliance with offences under civil aviation legislation and is exercised proportionately, with oversight from the Director of Civil Aviation to ensure enforcement is pursued in line with the Civil Aviation Rules. The focus on offences under civil aviation law recognises that not all contraventions of civil aviation law give rise to offences – and it is only those matters for which an offence is prescribed that should trigger the power.

Enabling the power to be used in relation to imprisonable offences under other legislation would also ensure the power is aligned with and supports other regulatory systems. For example, in the case of UAVs being used to deliver illegal substances or other packages to prisoners at Corrections facilities:

- Intervention might be possible under Civil Aviation Rules, which make it an offence to operate in airspace above a property, unless prior consent has been obtained from the occupier and/or property owner.

⁶ Offences specified in regulations are offences under the Act.

- However, a more appropriate Act to rely on might be the Corrections Act 2004, which outlines that it is an imprisonable offence to place any thing, or cause it to be placed, anywhere on prison grounds with the intention that a prisoner would come into possession of that thing.

For this reason, the Ministry proposes that the power would not be constrained to offences under civil aviation law.

Option 2 is most similar to the approaches being considered by other jurisdictions, although those systems remain under design, at varying stages of consideration and testing. Singapore and the United States of America, for example, continue to test viable technologies for law enforcement to successfully intervene against UAVs of varying types and sizes, and in populated areas where falling UAVs could cause injury to passers-by.

[REDACTED]

Withheld for security reasons

Option 3 – General defence to take action

One option that was presented as part of public consultation was a ‘general defence to take action’. Under this option, persons or classes of person, in accordance with special legislative provisions and regulations, would have a statutory justification or a defence against prosecution in respect of various offences (including civil aviation law, the Aviation Crimes Act, and the Crimes Act) where the person used reasonable force against a UAV. The justification might, for example, apply to any person who was certain that the aircraft had no people on board, and was operating in contravention of civil aviation law or might endanger people or property.

Under this option, the protection would apply to a class of people (to be defined in the Bill), so there is less reliance on the Director or the delegated agency. As a consequence, however, the circumstances in which action was justified, and the persons who are protected, would require careful design. A defence that was too broad might encourage reckless or disproportionate behaviour, while a too-narrowly defined defence would offer little improvement on the status quo, as it may not provide sufficient certainty.

In addition, this approach would require an emphasis on public education, to ensure there is not a perception that any person would have an absolute right to this “general defence”, for example to take action against a UAV that is being operated lawfully by the operator, but in a way the person deems a nuisance.

There is a risk that the option may be perceived as enabling vigilante-style counter-UAV operations, and would require considerable ongoing investment in public education campaigns and other mitigations, to ensure the parameters of the action (and classes of person to whom the defence would apply) are well known and unambiguous.

Amendments to Option 2 after public consultation

The Ministry undertook public consultation on a version of Option 2 that would only give the intervention powers to the Director of Civil Aviation and the Director’s delegates (i.e. not directly to constables). Some submitters who support Option 2 indicated that they would prefer UAV intervention functions to be performed by constables, rather than the Director and the Director’s delegates.

Since these submissions were received, the Ministry has worked with the CAA and Police to re-shape Option 2. The current proposal addresses submitters’ concerns by specifying

constables as approved persons, alongside any suitably qualified and trained authorised persons approved by the Director of Civil Aviation.

Key characteristics of the publicly consulted Option 2 in the commentary document, and amendments made following consultation, are:

Option 2 (commentary document)	Option 2 (current proposal)
The power would be exercisable by the Director or delegates of the Director (which could include CAA employees, Police, or other agencies).	The power is exercisable by constables, and suitably trained and qualified persons authorised by the Director of Civil Aviation.
The person exercising the power would have to have reasonable grounds to believe that the aircraft had no people on board, and was operating in contravention of civil aviation law or might endanger people or property.	Refined scope: “contravention of civil aviation law or might endanger people or property” has been changed to an offence under the Civil Aviation Act, or is being used in the commission of an imprisonable offence.
The power to seize includes the power to use reasonable force to bring a UAV in operation under the control of the person, such as by using nets, radiofrequency jamming or interception, or more extreme action such as destroying the UAV.	No change, [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] Withheld for security reasons
In choosing what action to take to seize the UAV, the person exercising the power must give such consideration as is reasonable in the circumstances to any risks to people or other property from taking the action.	No change
The seizure would be only maintained for such time as was necessary to ensure compliance with the civil aviation law, provided that the aircraft could be retained for the purposes of evidence for any prosecution.	No change.

A further description of the option, as it was consulted on, and public feedback on that version of Option 2, is provided in **Appendix One**.

3.1.2 What criteria, in addition to monetary costs and benefits have been used to assess the likely impacts of the options under consideration?

The options are assessed against the following criteria⁷:

Number	Criteria	Description
1.	Effective	The option will support civil aviation law to be upheld.
2.	Credible	The option is credible from the perspective of both domestic and international organisations, i.e. the New Zealand government is seen as taking safety and security operations seriously.
3.	Property rights of UAV users	The option does not negatively affect the property rights of law-abiding UAV operators.
4.	Other rights issues	The option does not negatively affect the rights of the public or property owners (third parties).

All criteria are equally weighted in the analysis, with the final assessment being an average representation of the analysis against the criteria.

3.1.3 What other options have been ruled out of scope, or not considered, and why?

One submitter suggested the adoption of a rules-based certification regime to address the policy problem. The submitter proposed that this would provide a flexible approach to approve organisations and/or individuals to operate counter-UAV systems, with complete oversight by the Director.

The Ministry considers that this suggested system has similarities to Option 2. Option 2 – which treats this as a regulatory power rather than a licensed activity is more appropriate..

3.1.4 Impact analysis

Key:

- ++ much better than doing nothing/the status quo
- + better than doing nothing/the status quo
- 0 about the same as doing nothing/the status quo
- worse than doing nothing/the status quo
- much worse than doing nothing/the status quo

	Option 1: Status quo	Option 2: Expand power to authorised persons	Option 3: General defence to take action
Effective	0 The regulator and constables will continue to be able to respond to imminent threats to persons or property, but will be unable to respond with force in case of other breaches of New Zealand	+ Regulatory and operational systems will be developed to ensure authorised persons are able to respond decisively to breaches of New Zealand law involving UAVs.	+ Any approved persons who have access to counter-UAV technology can act in defence of their property.

⁷ These criteria are aligned with analysis undertaken on similar, temporary proposals to enable counter-UAV operations during APEC 2021.

	law that do not meet this higher threshold.		
Credible	0 A lack of immediate enforcement ability is unlikely to be viewed as a credible approach, domestically or by international partners.	++ This approach would ensure that New Zealand is seen as taking safety and security in the aviation system seriously.	- It is likely that the credibility of this approach would be negatively impacted by the potential perceived vigilante nature of the proposal. Careful system design and public relations would be needed on an ongoing basis.
Property rights of UAV users	0 Property rights would be unaffected beyond existing controls.	- If UAVs are operated legally, there would be no anticipated impact on property rights of UAV users. UAV users' property rights may be affected if a UAV is seized or destroyed because illegal activity is suspected.	-- If general defence intervention powers are deployed legally, there would be no impact on property rights of UAV pilots. However, there would be greater potential for misuse of the powers compared to the other options.
Other rights issues	0 Threats from UAVs may put the rights of others at risk, including property rights, freedom of assembly and privacy.	++ Authorised persons would be able to uphold the law, including in relation to property and privacy.	+ People would have an increased ability to protect their property and privacy.
Overall assessment	0 While this option presents the best outcome for property rights of UAV users, it does not provide the desired ability for agencies to ensure a safe and secure aviation system.	+ This option provides Police and authorised persons with express authority to intervene against unlawful activity while protecting and supporting legitimate system users.	- This option would require extremely careful design, to ensure reasonable force is well defined and understood by the persons who wish to intervene against UAVs.

3.1.5 What option, or combination of options is likely to best address the problem, meet the policy objectives and deliver the highest net benefits?

Option 2 is recommended.

Expand power to authorised persons to take action

The suggested intervention powers, used in a graduated fashion, will support the growth of the aviation sector, while ensuring powers exist to mitigate any risks to safety or security, and to support proportionate and effective agency responses.

The Ministry's recommended approach is Option 2. The Ministry considers that:

- The current ability to take action in respect of UAVs that are committing offences under the law only where there is an imminent threat to people or property is not sufficient to support the purposes of the Civil Aviation Act.

- formal intervention powers are necessary to ensure authorised persons, and constables, have clear authority to respond to UAV incidents that do not meet the current threshold for intervention by Police (immediate threat to persons or property).
- it is necessary for the Director to have oversight of these powers, including the ability to give directions to Police, to ensure continued alignment with Civil Aviation Rules and any appropriate international civil aviation recommended practices.
- due to the complexity of understanding the UAV regulatory regime and deploying counter-UAV technologies, the process of becoming an authorised person should be tightly controlled and overseen by the regulator.
- it is important for the Director to be able to authorise suitably trained and qualified persons, other than constables, to ensure that the power can be flexibly implemented to suit a range of contexts, and used in situations where Police is unable to respond swiftly (e.g. due to geographical constraints).

This view is supported by the options analysis and stakeholder submissions on the proposal.

- Option 1 (status quo) is not sufficient to future-proof the regulatory system to enable the integration of UAVs into the aviation system, or to ensure that agencies can effectively fulfil their safety and security roles.
- Option 3 would require very careful legislative design and supporting education programmes to avoid the perception that it grants legal protection for vigilante-type reactions to legitimate UAV use, and to avoid any resulting misuse of the powers.
- Option 2 would also require careful design, but the scope of powers and protections is much clearer. The intervention power would sit with authorised persons (constables and persons authorised by the Director) who are suitably trained to undertake counter-UAV operations, including understanding the risks involved in forcibly removing UAVs of various sizes from the airspace.

3.1.6 What other impacts is this approach likely to have?

This work is complementary of broader regulatory work for UAVs being undertaken by the CAA, the Ministry, and the Ministry of Business, Innovation and Employment. The focus of the broader UAV regulatory work programme is integrating UAVs into the aviation system, including reviewing the regulatory framework (particularly Civil Aviation Rules), and considering new options such as registration, remote identification, and operator competency and testing courses, that could enhance the benefits and opportunities presented by UAV technologies while mitigating the risks those same technologies can pose.

3.1.7 Summary table of costs and benefits of the preferred approach

Affected parties (identify)	Comment: nature of cost or benefit (eg ongoing, one-off), evidence and assumption (eg compliance rates), risks	Impact \$m present value, for monetised impacts; high, medium or low for non-monetised impacts	Evidence certainty (High, medium or low)
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Additional costs of proposed approach, compared to taking no action

Regulated parties	There is no direct cost to regulated parties, as long as UAVs are operated lawfully.	LOW	HIGH
Agencies	Administrative and operational costs of implementing these provisions are expected to primarily fall within existing baselines, although greater cost may be incurred for training and procurement of required technologies.	MEDIUM	MEDIUM
Wider government	Cost of enabling intervention is low. [REDACTED] [REDACTED] Withheld for security reasons	LOW	MEDIUM
Other parties	N/A	N/A	N/A
Total Monetised Cost	Monetised cost has not been modelled	N/A	N/A
Non-monetised costs		LOW-MEDIUM	MEDIUM

Expected benefits of proposed approach, compared to taking no action

Regulated parties	Increased confidence in agencies to maintain a safe and secure aviation system.	HIGH	HIGH
Agencies	Assurance that activity does not need to meet the high bar of "imminent threat" to persons or property in order to take action against unlawfully operated UAVs and their pilots.	HIGH	HIGH
Wider government	New Zealand will be an early adopter for counter-UAV interventions.	LOW	MEDIUM
Other parties	Public confidence in agencies' ability to take action against unlawfully operated UAVs increased.	HIGH	HIGH
Total Monetised Benefit	Monetised benefit has not been modelled	N/A	N/A
Non-monetised benefits		HIGH	HIGH

Pages 26-30 are withheld for security reasons

Section 3.3: Other regulator powers (summary analysis)

3.3.1 What options have been considered?

Option 1 – Status quo

The Director of Civil Aviation and CAA staff with delegated authority have powers to address non-compliance with civil aviation law. These include:

- powers to revoke, suspend, or place conditions on a participant's aviation document⁸
- the ability to issue fines and take prosecutions for breaches of the Act and rules and regulations made under it
- powers to seize or prohibit the use of certain aeronautical products (such as aircraft)
- non-legislative powers, such as issuing warning letters.

These powers have generally worked well, and supported the regulator's role in promoting a safe and secure civil aviation system. However, since the passage of the 1990 Act, regulators in other regimes (such as workplace health and safety, financial markets laws, competition and consumer protection) have had access to a more graduated and comprehensive set of enforcement powers, providing them with greater flexibility in the action they take to address non-compliance.

Option 2 – include enforceable undertakings, improvement and prohibition notices, and injunctions in the Bill

In addition to its functions under the CA Act, the CAA is designated to administer the Health and Safety at Work Act 2015 with respect to aircraft in operation. This designation allows the CAA to exercise enforcement powers available under the Health and Safety at Work Act 2015 in order to carry its function under that Act.

Some of the enforcement powers available to the CAA when carrying out its function under the Health and Safety at Work Act 2015 are not present in civil aviation legislation, and could benefit regulation under civil aviation law (listed below).

The Bill is an opportunity to provide for similar powers under civil aviation law. This would provide the regulator with a greater suite of tools to help enforce the civil aviation law, and would align with the powers the CAA has available when carrying out its role under the Health and Safety at Work Act 2015.

The provision of an updated regulatory toolbox supports a better relationship between the regulator and regulated community and better enables the regulator to take a risk-based approach to its regulatory work (for example by intervening earlier to prevent harm from occurring). While the regulator is able to do most of these things without statutory backing, providing for these powers in statute provides a clear steer to the approach the regulator should be taking when carrying out its regulatory function.

⁸ Aviation documents, such as pilot's license and air operator certificates, are required to perform certain activities or provide certain services in the aviation system.

The power to accept enforceable undertakings

A statutory framework for enforceable undertaking supports operators and the regulator coming to sensible outcomes where the operator is willing to make voluntary changes that would avoid the need to prosecute or take other action. They ensure that the operator is held to account for carrying out their promises, while giving certainty that no action will be taken if they do. Enforceable undertakings are a feature of many regulatory regimes including health and safety, competition, consumer protection and financial markets laws, and are being progressed for inclusion in land and maritime transport legislation.

The power to issue improvement and prohibition notices

Improvement and prohibition notices can be issued by a regulator to require up-front action to address safety concerns. Such notices state the contravention and time in which the regulated party has to address the situation. They can also contain recommendations concerning measures that could be taken to address non-compliance. Non-compliance with a notice carries its own offence and associated penalties. The 1990 Act provides a general power for CAA staff with delegations from the Director to enter aircraft and aviation related workplaces for the purposes of carrying out regulatory functions under the Act. While there, they can, if prompt action is necessary to prevent danger to people or property, exercise the powers to detain aircraft and prohibit or impose conditions on the use of aircraft delegated to that officer. These powers are very targeted and limited. The officer does not, for example, have powers under the 1990 Act to take immediate action beyond the use of the aircraft. However, these same officers may have such powers under the Health and Safety at Work Act. To address this discrepancy, the Ministry proposes powers to issue improvement and prohibition notices that mirror Health and Safety at Work Act 2015 powers.

Injunctions

Prosecution for an offence and administrative action such as removal of an aviation document are usually effective tools to deal with non-compliance. There are, however, circumstances where a participant may choose continued non-compliance, and to pay any fines that might eventuate. One option the 1990 Act uses to deal with this risk is to provide penalties for continuing offences in some cases, but that approach is inconsistent with the LDAC Guidelines and is not being carried over into the new Bill. An alternative is to provide for the regulator to apply to the court for injunctions to restrain breaches of statutory provisions. While these are available in the High Court's inherent civil jurisdiction, a statutory framework provides more certainty and prominence to its availability. Similar injunctions are used in a number of regimes including financial markets.

3.3.2 Which of these options is the proposed approach?

Option 2 is recommended.

This will provide the regulator with regulatory powers found in other similar regimes. Access to a wider suite of powers will support the regulators role in ensuring a safe and secure civil aviation system.

3.3.3 Summary table of costs and benefits

Affected parties <i>(identify)</i>	Comment: nature of cost or benefit (eg, ongoing, one-off), evidence and assumption (eg, compliance rates), risks	Impact <i>\$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts</i>
Additional costs of proposed approach, compared to taking no action		
Regulated parties	There are no upfront or ongoing compliance costs to industry associated with the new powers.	LOW
Regulators	There may be small upfront costs for the CAA to develop operational policy to guide the use of these new powers, and train its staff in their use.	LOW
Wider government	N/A	NONE
Other parties	N/A	NONE
Total Monetised Cost	We have not attempted to calculate the monetised costs of the proposal	
Non-monetised costs	There is little cost associated with this proposal.	LOW

Expected benefits of proposed approach, compared to taking no action		
Regulated parties	There are likely to be some small benefits to regulated parties associated with the regulator having a broader suite of powers to undertake its role. For instance, the CAA may be less likely to issue financial penalties if it has access to a larger suite of alternative enforcement powers.	LOW
Regulators	The regulator will benefit from having access to a wider range of flexible, graduated enforcement powers to undertake its role in ensuring safe and secure aviation.	MEDIUM
Wider government	N/A	NONE
Other parties		MEDIUM
Total Monetised Benefit	We have not attempted to calculate the monetised benefits of the proposal	
Non-monetised benefits		MEDIUM

3.3.4 What other impacts is this approach likely to have?

Better access to a wider range of enforcement tools is likely to contribute to ensuring a well regulated, safe and secure aviation system.

3.3.5 What do stakeholders think about the problem and the proposed solution?

The Ministry has consulted with the CAA on the proposal. It is supportive.

The Ministry has not consulted industry on the proposal, given the impacts are likely to be small.

Section 4: Implementation and operation

4.1 How will the new arrangements work in practice?

The proposed enforcement powers will be incorporated into the Civil Aviation Bill, which is anticipated for introduction in the first half of 2020. The commencement date for these provisions is to be on a date specified by Order in Council.

Once implemented, the CAA will have ultimate responsibility for overseeing the proposed new arrangements and any incidental rule changes. Police will have joint responsibility for the UAV intervention powers, alongside the Director of Civil Aviation, who will be responsible for authorising persons other than constables and their operating procedures.

Engagement with stakeholders, including other agencies, is built into the planned approach for progressing this work, and will be a continuation of existing engagement on the Bill. The CAA and the Ministry will work with agencies and stakeholders to draft and implement the proposed amendments.

(a) Power to seize, detain and destroy UAVs

As part of the implementation relating to the power to seize, detain and destroy UAVs, responsible agencies will develop appropriate guidance and operational procedures for use of the proposed intervention powers. While we do not have complete certainty around the extent of the regulatory impact this may have, we understand that the impacts will extend to enforcing agencies, who will need to consider resourcing and other implementation risks, and affected members of the public.

As part of agencies' ongoing role in monitoring and reviewing the implementation of these measures, we anticipate that we will have the additional information needed to provide a more robust picture of the regulatory impacts.

Withheld for security reasons

[Redacted content]

4.2 What are the implementation risks?

Withheld for security reasons

(a & b) Power to seize, detain and destroy UAVs, [Redacted]

Police, MBIE and the CAA agree that the Ministry's preferred options present the best approach in legislation. However, further work is needed (outside the policy approval process) to address operational matters and develop appropriate guidance and operating protocols, including:

- how procurement, training and other associated costs will be funded
- who will own, store and operate any counter-UAV technology
- how other agencies with a substantive interest in utilising these powers, such as the Department of Corrections, can be delegated authority
- how the powers can be most optimally used, including search and seizure of UAVs or their controllers
- who the Director of Civil Aviation can appoint to be an authorised person (whether this should reasonably be extended to employees of private companies), and
- what operational procedures will look like in relation to very large UAVs that cannot be intervened against using existing technology.

This will require ongoing dialogue between a number of parties, including:

- the Ministry of Transport
- the CAA
- Police
- MBIE, and
- the Ministry of Justice.

(c) Other regulator powers

There is little implementation risk associated with providing for these powers under the Act. The same powers are provided for in other regimes that the CAA can use as models from which to develop best practice for their implementation and use.

Section 5: Monitoring, evaluation and review

5.1 How will the impact of the new arrangements be monitored?

The CAA would monitor the implementation and effect of the proposed changes through its usual certification, auditing and surveillance functions. Accident and incident data captured by the CAA will provide additional insight into the effects of the proposed changes, primarily in the identification of safety and compliance trends.

5.2 When and how will the new arrangements be reviewed?

Withheld for security reasons

[Redacted content]

Stakeholders will have further opportunity to suggest modification of these powers after introduction of the Bill, i.e. during the select committee process.

Appendix One: Summary of public submissions on options relating to the detention, seizure, and destruction of UAVs (UAV enforcement powers) – presented by Option

Below is a summary of the Ministry of Transport’s high-level analysis of submissions, received in mid-2019, on proposals and problem definition relating to the detention, seizure, and destruction of UAVs.⁹

Option 1 – Status quo

As noted above, the status quo does not provide for an appropriate balance for the ability to take action against a drone that is operating in breach of the rules, but does not pose an immediate danger to people or property. While an action in trespass or nuisance may be available, private law enforcement would not provide for effective enforcement.

- Civil Aviation Bill Commentary Document, page 28.

Of the 16 public submissions on the proposals relating to the detention, seizure and destruction of UAVs, the Ministry received:

- three (3) submissions ‘for’ the status quo;
- ten (10) submissions ‘against’ the status quo; and
- three (3) submissions of ‘mixed’ opinion, or partial support for the status quo.

Support for the status quo comes primarily from UAV and/or model aircraft operators. Concerns raised by those who support, or partially support, the status quo include:

- the danger of forcibly removing UAVs from airspace (particularly to persons or property on the ground).
- the danger and potential technical complications of electronic signal jamming as a means to intervene against a UAV in flight.
- desire to focus on measures to identify and apprehend rogue operators, rather than focusing attentions on UAVs while they are in flight.

Opposition to the status quo comes from a range of individuals and groups, including airlines, airports, and small-to-medium enterprises in the aviation sector. These submitters consider that changes are necessary to successfully integrate UAVs into the broader aviation sector, and to protect legitimate airspace users of all kinds from rogue UAV operations.

The concerns of Option 1 (status quo) supporters have been noted, and the Ministry expects that those concerns would be managed when agencies develop operational policies and practices to support the preferred option. As such, of the Ministry maintains its support for Option 2.

⁹ The commentary document containing the original proposals and problem definition are available from the Ministry of Transport website, at <https://www.transport.govt.nz/assets/Import/Uploads/Air/Documents/a79c4827e4/Civil-Aviation-Bill-Commentary-document.pdf>

Option 2 – Expand power to authorised persons to take action

Under this option, the power to seize or detain non-passenger carrying drones would be expanded, as follows:

- *The power would be exercisable by the Director or delegates of the Director (which could include CAA employees, Police, or other agencies).*
- *The person exercising the power would have to have reasonable grounds to believe that the aircraft had no people on board, and was operating in contravention of civil aviation law or might endanger people or property.*
- *The power to seize includes the power to use reasonable force to bring a drone in operation under the control of the person, such as by using nets, radiofrequency jamming or interception, or more extreme action such as destroying the drone.*
- *In choosing what action to take to seize the drone, the person exercising the power must give such consideration as is reasonable in the circumstances to any risks to people or other property from taking the action.*
- *The seizure would be only maintained for such time as was necessary to ensure compliance with the civil aviation law, provided that the aircraft could be retained for the purposes of evidence for any prosecution.*

This option places the power in the regulator or delegate within the CA Act framework. This would ensure that the power is focussed on compliance with civil aviation legislation and is exercised proportionately. The power relies on the Director or a delegated agency allocating resources to support its use, and the establishment of operational procedures for exercising power.

- Civil Aviation Bill Commentary Document, pages 28-29.

The Ministry received five (5) submissions in support of Option 2, including one submission that was supported by 66 individuals who wrote to the Ministry to inform it of their support for the original submission. Additionally, four (4) submitters presented views that were mixed or partially supportive of Option 2.

Support for Option 2 comes from a range of aviation system participants, including airlines and pilots. These submitters present the view that:

- the proposed changes are necessary to modernise the civil aviation system and benefit from the opportunities presented by advancements in UAV technology.
- the Director is in the most appropriate position to oversee the intervention functions proposed.

Opposition to Option 2 centres on concerns raised:

- by airports, who are of the view that this proposal may not be sufficient to respond to events at their respective premises (discussed further under Option 3).
- by supporters of the status quo (Option 1), particularly the ability of authorised persons to accurately and safely perform this function without creating additional hazards.

Option 3 – General defence to take action

Under this option, persons or classes of person would have a statutory justification or a defence against prosecution in respect of various offences (including civil aviation law, the Aviation Crimes Act and the Crimes Act) where the person used reasonable force against a drone. The justification might, for example, apply to any person who reasonably believed that the aircraft had no people on board, and was operating in contravention of civil aviation law or might endanger people or property.

Under this option, the protection generally applies to a class of people, so there is less reliance on the Director or the delegated agency. As a consequence, however, the circumstances in which action was justified, and the person who is protected, would require careful design. A defence that was too broad might encourage reckless or disproportionate behaviour, while a too-narrowly defined defence would offer little improvement on the status quo, as it may not provide sufficient certainty.

- Civil Aviation Bill Commentary Document, page 29.

Airports and the New Zealand Airports Association support Option 3. Airports prefer Option 3 (or Option 2 with emergency clauses enabling Option 3) because it would provide a defence for airport employees to conduct counter-UAV activities to prevent incursions preventing operations at their facilities. Airports agree that the Director/law enforcement agencies should have primary responsibility, but believe that other industry participants should be empowered to respond if the Director/law enforcement agencies are unable to.

Three (3) submitters are explicitly opposed to Option 3. These submitters are (or comprise) UAV operators. Key concerns regarding Option 3 include:

- difficulty educating those who might exercise the power sufficiently to be sure that the power will be used safely and correctly.
- the vigilante and “open season” nature of the proposal.
- concern that members of the public will believe they have the right to seize or destroy any UAV they believe is being operated inappropriately (regardless of whether the actual powers allow this).

While the Ministry has not directly addressed airports’ concerns regarding their own ability to take action against UAVs being operated illegally, the current proposal for Option 2 does not preclude suitably trained and qualified airport employees from becoming approved by the Director as an authorised person.