

## **Notice of Proposed Rule Making**

**NPRM 22-01**

### **Part 139 Runway Condition Reporting**

*Docket* **21/CAR/02**

## Background to the Civil Aviation Rules

The Civil Aviation Rules (the Rules) establish the minimum regulatory safety boundary for participants to gain entry into, operate within, and exit the New Zealand civil aviation system. The rules are structured in a manner similar to the Federal Aviation Regulations of the USA.

Rules are divided into Parts and each Part contains a series of individual rules which relate to a particular aviation activity. Some rules empower the use of a CAA notice. Notices contain specific mandatory requirements including detail about the approvals, standards, conditions, procedures and technical specifications that have been approved or determined by the Director as being appropriate in accordance with the corresponding enabling rule.

Advisory circulars accompany many rule parts and contain information about standards, practices and procedures that the Director has established to be an acceptable means of compliance with the associated rule. An advisory circular may also contain guidance material to facilitate compliance with the rule requirements.

The objective of the Rules system is to strike a balance of responsibility between, on the one hand, the Crown and regulatory authority (CAA) and, on the other hand, those who provide services and exercise privileges in the civil aviation system. This balance must enable the Crown and regulatory authority to set standards for, and monitor performance of, aviation participants whilst providing the maximum flexibility for the participants to develop their own means of compliance within the safety boundary.

Section 12 of the Civil Aviation Act 1990 prescribes general requirements for participants in the civil aviation system and requires, amongst other things, participants to carry out their activities safely and in accordance with the relevant prescribed safety standards and practices.

Section 28 of the Act allows the Minister to make ordinary rules for any of the following purposes:

- the implementation of New Zealand's obligations under the Convention
- to allow for the mutual recognition of safety certifications in accordance with the ANZA mutual recognition agreements
- the provision of aviation meteorological services, search and rescue services and civil aviation security programmes and services
- assisting aviation safety and security, including but not limited to personal security
- assisting economic development
- improving access and mobility
- protecting and promoting public health
- ensuring environmental sustainability
- any matter related or reasonably incidental to any of the following:
  - i. The Minister's objectives under section 14 of the Act;
  - ii. The Minister's functions under section 14A of the Act;
  - iii. The Authority's objectives under section 72AA of the Act;
  - iv. The Authority's functions and duties under section 72B of the Act; and
  - v. The Director's functions and powers under section 72I of the Act
- any other matter contemplated by any provision of the Act.

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## 1. Purpose of this NPRM

The purpose of this rule-making proposal is to update the Rules that prescribe the requirements relating to Runway Condition Reporting (RCR) to be fit for purpose. In its current form, the affected Rules are not workable with the use of the term ‘real time’.

All ICAO member states are expected to implement a standardised approach to assessing the condition of the runway and reporting this information to the appropriate persons to ensure safe take-off and landing. International consistency with regards to runway condition reporting (RCR) is crucial in order to achieve the full safety benefits.

## 2. Background to the proposal

### 2.1 General Summary

ICAO amended their SARPs and produced a range of guidance to support the implementation of standardised RCR. The revised SARPs came into effect on 5 November 2020.

In anticipation of the ICAO changes, Rule Part 139 was amended to require all certificated aerodromes to provide ‘real-time’ runway surface condition reporting from 31 July 2018. However, ICAO’s work on this was delayed, and Rule Part 139 was finalised before ICAO had finalised their SARPs and associated guidance.

Rule 139.103(b)(3) requires a holder of an aerodrome operator certificate to have a maintenance programme which provides for the measurement and provision of real-time RCR. However, in its current form, problems have emerged in its implementation at various aerodromes across New Zealand. The problems found include the following -

- the rule is difficult to interpret and ill-defined, due to a lack of clear policy intent;
- the use of the term ‘real-time’ is problematic because the cost of technology required to undertake ‘real-time’ assessments of runway surface condition is prohibitive for most New Zealand aerodromes;
- the rule only applies to situations where there is contamination namely snow, ice and standing water on the runway, and does not provide for RCR for a wet runway. This is a safety risk and inconsistent with ICAO SARPs, and therefore risks being inconsistent with the expectation of international airlines flying into New Zealand and for New Zealand pilots flying internationally; and
- the rule requiring ‘real time’ RCR applies across all certificated aerodromes without any consideration of the costs and burdens to aerodromes.

There is a serious risk of harm if an aircraft goes off the runway unexpectedly. Contamination on the runway (such as water, snow or ice) affects the braking performance of the aircraft and can cause a runway excursion<sup>1</sup>

The International Civil Aviation Organization (ICAO) has recently published new Standards and Recommended Practices (SARPs) for runway condition reporting.<sup>2</sup> All member states are expected to implement runway condition reporting (RCR). RCR is a standardised approach to assessing the condition of the runway and reporting the information to the flight crew members. The flight crew members then use this information alongside aircraft performance data to ensure a safe take-off and landing. International consistency in the reporting of the runway condition is crucial to achieve the safety benefits.

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<sup>1</sup> A runway excursion occurs when an aircraft veers off, or overruns, the runway surface during either take-off or landing.

<sup>2</sup> ICAO is a UN specialised agency, established by States in 1944 to manage the administration and governance of the Convention on International Civil Aviation. ICAO works with the Convention’s 193 Member States and industry groups to reach consensus on international civil aviation SARPs and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector. These SARPs and policies are used by ICAO Member States to ensure that their local civil aviation operations and regulations conform to global norms, which in turn permits more than 100,000 daily flights in aviation’s global network to operate safely and reliably in every region of the world. SARPs are generally focussed on international operations, with States having more flexibility in applying SARPs to domestic operations.

The key issue addressed is how New Zealand will implement RCR, given that there is some flexibility in terms of how each State implements RCR and whether it is used at regional aerodromes.

## 2.2 What is the policy problem or opportunity?

*Runway excursions have been recognised internationally as a significant safety risk*

Contamination on the runway (such as water, snow or ice) affects the braking performance of the aircraft. The reduced friction between the tyre and the runway means that more space is required for the aircraft to fully stop, and there is a greater risk of an aircraft aquaplaning. Serious harm is likely to occur if an aircraft departs the runway unexpectedly. This is known as a ‘runway excursion’ – a veer off or overrun of the runway surface. Runway excursions are one of the Authority’s eight safety and security focus areas.<sup>3</sup>

Of the 1,429 accidents internationally from 1995 to 2008 involving commercial transport aircraft resulting in major or substantial damage, 417 were runway excursions – resulting in 712 deaths.<sup>4</sup> There has been a range of research undertaken on the causes of runway excursions.

- A 2009 report by the Flight Safety Foundation found that ineffective braking due to runway contamination was the third most common landing excursion risk factor at the time.
- A study by Boeing found that, after touchdown, the primary contributing factors of runway excursions are the actual runway condition and inadequate or late use of deceleration devices.<sup>5</sup>
- ICAO analysis in 2011 found that that 38 % of runway excursions resulted from some type of runway contamination.<sup>6</sup>

Most of the research identified a need to properly inform the flight crew members about the type and amount of contamination so that they can apply the optimal aircraft performance settings to ensure a safe landing.<sup>7</sup>

Runway excursions resulting from contamination have not historically been an issue in New Zealand. For the period 2000 to 2017, there were 20 reported runway excursions at Part 139 certificated aerodromes. None of these related to snow, ice, or excess surface water. There have been no fatal runway excursion incidents. Nevertheless, several certificated New Zealand aerodromes do experience snow and ice conditions, and all experience a wet runway and are at risk of standing water. The high number of international accidents, and the catastrophic nature of many of those accidents, demonstrates the need for a proactive approach to manage the risk.

In 2015 a passenger jet aircraft aquaplaned on standing water at Christchurch airport and stopped five meters from the end of the runway. While technically not a runway excursion, it was a near miss and highlighted the importance of communicating the change in runway conditions in a consistent, standard manner and the impact contamination can have on the braking performance of the aircraft.<sup>8</sup>

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<sup>3</sup> <https://www.aviation.govt.nz/assets/publications/safety-and-security-focus-area-work-programme/Focus-Areas-2018-2020.pdf>

<sup>4</sup> *The Runway Safety Initiative – Reducing the Risk of Runway Excursions* (May 2009) Flight Safety Foundation

<sup>5</sup> *Reducing runway landing overruns*, Boeing, [https://www.boeing.com/commercial/aeromagazine/articles/2012\\_q3/3/](https://www.boeing.com/commercial/aeromagazine/articles/2012_q3/3/) (last accessed 01/10/2019)

<sup>6</sup> The second edition of the *IATA/ICAO Runway Excursion Risk Reduction (RERR) Toolkit* (May 2011). Of 164 runway excursions, 62 were due to runway contamination.

<sup>7</sup> For example, *Identification and analysis of veer-off risk factors in accidents/incidents – Future Sky Safety*, J. A. Post (2005).

<sup>8</sup> Australia Transport Safety Bureau Transport Safety Report, *Reduced braking effectiveness during landing involving 737-800* (September 2018) <http://www.atsb.gov.au/media/5774950/ao-2015-046-final.pdf>

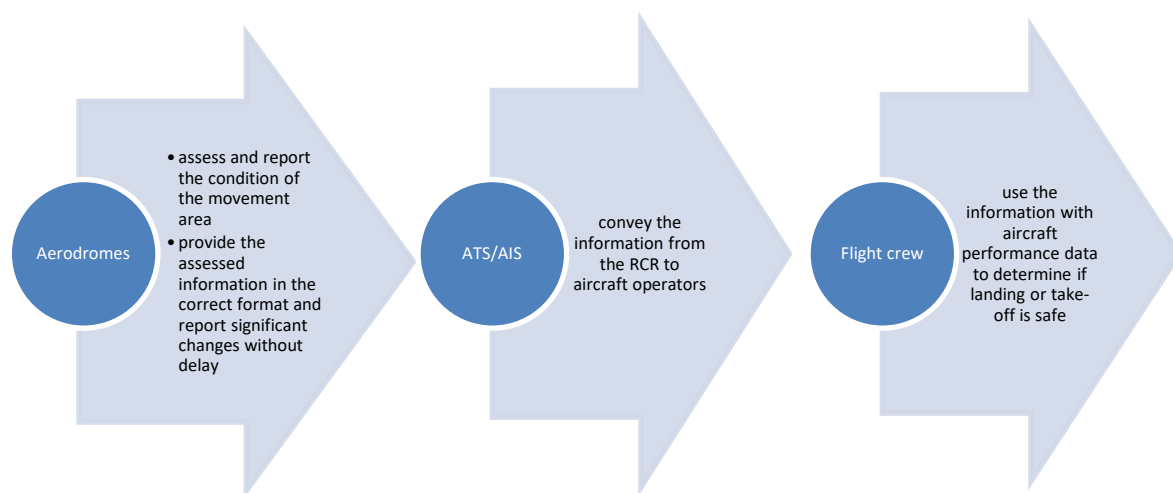
*RCR reduces that risk through the use of a globally standardised method of runway assessment and reporting*

Current methods to report on runway surface conditions have been implemented differently across States, resulting in inconsistent information being provided to aircraft operators and pilots.<sup>9</sup>

RCR was designed to improve the safety of landing or taking off on wet and contaminated runways<sup>10</sup> by providing a standardised approach to assessing and reporting runway surface conditions and its effect on the aircraft landing and take-off performance.<sup>11</sup>

The aerodrome operator is required to assess the runway surface conditions whenever water, snow, slush, ice or frost are present on an operational runway. The runway is assessed in thirds, and each third is reported on using a standardised code. The code relates the surface condition directly to the impact on aircraft braking performance. The runway must be reassessed each time the runway surface conditions change.

This information is communicated to the flight crew members as quickly as possible by the aeronautical information service (AIS) and air traffic services (ATS). The flight crew members use this information to ensure a safe landing or take-off, for example by adjusting the aircraft's performance settings to compensate for the reduced braking on a runway with reduced friction due to water or contamination.



*The introduction of RCR in New Zealand is part of a global implementation*

Aerodromes already inspect their runways as part of a more general inspection programme. The proposed changes are part of the implementation of a globally standardised approach which has been tested and validated to replace subjective judgements with objective assessments directly tied to criteria relevant for aeroplane performance.<sup>12</sup> New Zealand is one of many countries implementing RCR. Ensuring global consistency, where appropriate, is important to New Zealand remaining part of the global aviation system.

ICAO have amended their Standards and Recommended Practices (SARPs) and produced a range of guidance to support the implementation of standardised runway condition reporting (RCR). The revised SARPs came into effect on 5 November 2020.

<sup>9</sup> ICAO Circular 355 Assessment, Measurement and Reporting of Runway Condition paragraph 2.9

<sup>10</sup> ICAO State Letter AN 4/1.1.55-15/30, pp A-1 – A-3.

<sup>11</sup> ICAO Annex 14 – Aerodromes, Part 1.1 (definitions)

<sup>12</sup> ICAO Circular 355, 4.22

The current rule is not practicable and will not enable us to implement the globally standardised method (the problem).

In anticipation of the ICAO changes, Rule Part 139 was amended to require all certificated aerodromes to provide ‘real-time’ runway surface condition reporting from 31 July 2018. However, ICAO’s work on this was delayed, and the Rule Part 139 amendment was finalised before ICAO had finalised their SARPs and associated guidance.

As a result, all of New Zealand’s certificated aerodromes were initially exempted from rule 139.103(b)(3) up to November 2020. Internationally, RCR commenced in November 2021. However due to COVID impacts on both the sector and the CAA, it was decided that the implementation date be extended to November 2022. After taking into consideration possible further delay in getting the necessary infrastructure in place, it is anticipated that all of the existing exemptions are to be extended to November 2024.

This means that there is generally a lack of reporting on the condition of the runway in New Zealand. One of the implications resulting from a lack of reporting is that it would be difficult to establish if an accident was caused, or partly caused by the lack of information relating to a contaminated runway.

It is worth noting that some aerodromes are reporting on the condition of the runway. Queenstown aerodrome is largely reporting in line with ICAO requirements, and they have a specific agreement in place with airlines over the winter months for how this information will be communicated. Where reporting is occurring elsewhere, it is occurring inconsistently.

*Failure to take any action will result in the current exemptions expiring, and New Zealand being out of line with other States*

Initial exemptions for all New Zealand certificated aerodromes expired in November 2020. These were extended to November 2022, with an anticipated further extension to November 2024, as mentioned earlier. The extended exemption period is to coincide with the completion of the necessary infrastructure.

Failure to align New Zealand’s regulatory approach for our international aerodromes with other countries could create problems with New Zealand’s international reputation, especially given the significant uptake by many countries that have linking air routes with New Zealand, including the US, Europe and Australia. This could also lead to commercial or economic impact if New Zealand’s approach to runway condition reporting does not align with the expectations of international airlines.

There are also impacts if we fail to align our regional aerodromes with the approach taken by our international aerodromes. Pilots and aeroplanes on regular air transport operations that fly into our regional aerodromes also fly into our international aerodromes and a consistent approach reduces the potential for confusion. Consistency across all certificated aerodromes involved in the training of commercial pilots is also beneficial because, no matter where they fly in the future, they will encounter the same RCR terminology and processes.

### **Who is affected and how?**

*The 29 certificated aerodromes are the main stakeholders affected.*

Aerodromes will need to assess the condition of their runways and report that information consistently using the global reporting format. The current rule requires this to be done in ‘real time’, and the technology to support a ‘real time’ assessment is prohibitively expensive for most aerodromes – and all aerodromes are exempt from this rule requirement as a result. At this stage, Wellington International Airport Ltd is the only aerodrome to introduce this technology. All other aerodromes support a more proportionate approach to RCR.

*RCR builds on the regular inspections that aerodromes already do*

There are existing rule requirements relating to regular inspections and communicating unsafe conditions. For example, rule 139.117 requires aerodromes to have a documented aerodrome inspection programme. Inspections should be undertaken daily before the first flights, and again at dusk if further flights are expected.<sup>13</sup> These are more general inspections, but they do include inspecting the runway for example to identify foreign object damage.

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<sup>13</sup> AC 139-3 says at 3.2.1 that ‘Regular inspections’ should be carried out at least once daily before the first flights, and again at dusk if further flights are expected.



As part of the exemption application process, aerodromes provided information about their current assessment regime, their runway and the runway contamination they experience. Through this exercise and our subsequent engagement, we obtained a good overview of how aerodromes were currently undertaking assessments and communicating any information to flight crew.

We confirmed that all aerodromes undertake inspections of their runways twice a day (except Ohakea and Ardmore which do not receive scheduled passenger flights). Some undertake more regular assessments, for example Hamilton reported that they undertake assessments four times per day, and Westport reported three times per day. At the four largest aerodromes (Auckland, Wellington, Christchurch and Queenstown), staff are available to undertake inspections onsite 24/7. The remaining aerodromes have staff (or third-party ground staff) onsite prior to all scheduled passenger flights.

There are also impacts on our AIS provider, airlines and pilots. Our AIS provider Airways/Aeropath will also be affected because aerodromes will require timely methods to communicate RCR to the flight crew. Airways/Aeropath will need to update existing methods (such as NOTAM and ATIS) to enable the standardised RCR to be communicated.

Airlines and pilots will need to learn the new RCR terminology and become familiar with the delivery methods used to get this information from the ground to the cockpit. Air New Zealand supports the implementation of RCR.

### **What are the objectives sought in relation to the identified problem?**

The objective is to improve aviation safety by minimising the risks of runway excursions due to a lack of information, or unclear information, about runway conditions.

### **What options have been considered?**

*The following criteria were used to assess the options*

Effective – it should deliver the policy objective by providing an accurate assessment of the runway surface condition in a standardised format to the flight crew in a timely manner.

Consistent – supports consistency across New Zealand aerodromes, and consistency of our international aerodromes with ICAO’s globally harmonised approach where appropriate.

Proportionate – balances the safety benefits with compliance costs and administrative burdens on those stakeholders that are impacted.

#### *Option 1 - Retain the status quo*

Under this option no further action is taken. This means that the current rule would continue to exist unchanged, and the exemptions to this rule would expire in November 2020. Aerodromes would need to meet the requirements for real-time runway reporting as currently set out in rule 139.103.

We have already reviewed the current rule through our internal issue assessment process and identified a range of problems and decided that we need to take remedial action. The rule is not effective as it is difficult to interpret, not aligned with international expectations and unrealistic for aerodromes to implement. Implementing ‘real-time’ reporting would be very expensive and have significant resource implications. As a result, we assume most aerodromes will seek further exemptions.<sup>14</sup>

#### *Option 2 - Provision of guidance and definitions, but retaining the current rule*

We could retain the existing rule and provide guidance on how to comply with the rule in an advisory circular. For example, we could define what we mean by ‘real-time’ in a way that reduces implementation burdens, or provides clear definitions based on an assessment of risk or benefit.

However, this would not achieve the policy objective. The current rule is limited to RCR when there is contamination on a runway and does not include reporting on a wet runway. Failure to report on a wet runway is a safety risk, as braking

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<sup>14</sup> Wellington International Airport Ltd may be able to meet the current rule in future as they have invested in sensors in their runway to provide real-time assessments of their runway. However, this was at significant expense.

action is reduced on a wet runway compared to a dry runway. This would not align with ICAO, or the expectations of international jets flying in and out of New Zealand.

We could also define what we mean by ‘contaminated’ to include a wet runway. However, this would further remove New Zealand from the standardised RCR used internationally, which could cause confusion for international airlines and pilots, as well as damage our reputation – which could have commercial or economic impacts.

This option would also result in leaving an unclear or confusing rule in existence, rather than amending it to better achieve the policy objective.

*Option 3 – Extend the exemptions or amend the rule to extend the implementation date*

Extending the implementation timeframe would give aerodromes more time to comply with the current rule. However, this option doesn’t address the wider problems with the current rule, such as the lack of RCR for a wet runway or issues with interpretation. This option also fails to address the disproportionate impact on aerodromes, and the current requirements for ‘real-time’ reporting would continue to apply.

*Option 4 - Amend the rule to enable RCR (ie make it voluntary)*

We could amend the rule to be enabling, so that aerodromes can choose to provide RCR based on their own assessment of the benefits and costs. The system could be based on the Director approving their choice.

Some aerodromes that are ‘higher risk’ may choose not to undertake RCR for other reasons, such as commercial reasons. This undermines the safety benefits of RCR and the overall policy objective. This option could also lead to inconsistency and confusion, with two different systems in operation across New Zealand – and there may be no clear basis for whether an aerodrome is undertaking RCR or not.

*Option 5 - Amend the rule to require two assessments per day*

We could require all certificated aerodromes to undertake RCR consistent with the standardised approach, but limit the frequency to twice per day (reflecting the current requirements for their regular aerodrome inspections). This would have the benefit of ensuring consistency in RCR across all certificated aerodromes while limiting the burden of ‘real-time’ assessing and reporting.

This option is not effective in achieving the policy objective. Runway surface conditions change throughout the day and this option provides no mechanism to ensure the flight crew are provided with up to date information to prepare for a safe landing if the conditions have changed. If the RCR was undertaken at 7am when the aerodrome opens for the day and not updated until the evening, it may quickly become out of date. For example, there may be periods of heavy rain, or snow in winter, but at 7am the runway was dry. It could cause confusion for the pilots when other sources of information are confirming rain or snow, but the RCR has not been updated.

The option does not align our international aerodromes with ICAO’s requirements and would result in New Zealand being out of line with the globally standardised approach.

*Option 6 – Amend the rule to require RCR twice per day and ‘when required’ (proposed approach)*

This option would require all aerodromes to undertake RCR at least twice per day and ‘when required’. We would identify triggers that would require a further assessment and update of the RCR, such as:

- when the runway surface conditions may have changed significantly due to meteorological conditions<sup>15</sup> and a flight is due to land or take off, and
- on request from a pilot at top of descent, for the purposes of Take-off and Landing Performance Assessments (TALPA) calculations, or following a report of poor or unexpected braking action.

This option is different to the ICAO SARPs because aerodromes will not have to report every change in runway surface condition throughout the day when there is no one to receive the information. It will be up to the aerodrome to set how

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<sup>15</sup> PANS 9981 at 1.1.3.3 defines a significant change in the runway surface conditions as: any change in the RWYCC, contaminant type, contaminant coverage, contaminant depth or any other information (for example a pilot report of runway braking action) which according to assessment techniques used, are known to be significant.

far in advance the assessment should be undertaken to ensure the information to the pilot is up to date – and this will depend on the amount of time it takes to assess the runway and communicate the information. However, we will need to specify that it must be within a certain amount of time prior to landing (such as half an hour).

A comparison of this option with the ‘second best’ option is set out below, and the benefits of this option are set out in the following section.

#### *Option 7 - Amend the rule to require only some aerodromes to undertake RCR based on certain criteria*

This option involves setting criteria so only ‘higher risk’ aerodromes would need to provide RCR. We considered this option in considerable detail. Criteria we reviewed included busy, high volume aerodromes (ie high movements and passenger numbers), international aerodromes, aerodromes receiving jets, and risk of contamination (ie average snow and rainfall, grooved runway). We determined that the best criteria was whether the aerodrome was attended by ATS or not as it made a clear distinction between those busier, high volume aerodromes (including all international and jet aerodromes) while also reflecting the practical considerations around technology.

The key disadvantage of this option is that it results in two different systems in operation which could cause confusion – some aerodromes would be using the standard RCR terminology and reporting system, and others would not. Pilots would fly from an aerodrome required to undertake RCR into an aerodrome not required to. Also, some smaller aerodromes have flight schools attached, and it is valuable to train future air transport pilots in line with consistent international standards.

The other disadvantage of this option is the missed safety benefits for aircraft flying into unattended aerodromes. Pilots generally receive less advance and en-route information when flying into an unattended aerodrome. A runway could be wet or contaminated, and there will be no requirement for unattended aerodromes to record or communicate that information to pilots. Because there is no ATS at these aerodromes, the safety benefits of having RCR at these aerodromes could be arguably greater.

Overall, we felt that the safety benefits of RCR at all aerodromes outweigh the additional burdens of undertaking RCR – noting that the preferred option significantly reduces the burden of the status quo.

*Options 6 and 7 were the only options that met our criteria.*

### **What is the proposed approach?**

The proposed option is to amend the rule to require RCR twice per day and ‘when required’ (option 6). This option has the greatest safety benefits and delivers consistent reporting across all certificated aerodromes.

Compared to option 7, the benefits of this option are:

- All aerodromes are at risk of a wet runway – which reduces braking action compared to a dry runway. This information has safety benefits for all pilots, whether they are flying TALPA-enabled jets, ATRs or smaller aircraft. Passengers will benefit from the safety benefits at all certificated aerodromes.
- International aerodromes will meet the ICAO requirements to update the RCR after every significant change to the runway condition due to the frequency that aircraft land and take off (with no large gaps between flights like the smaller regional aerodromes). However, this option achieves a proportionate and practical approach for regional aerodromes by avoiding the need to update the RCR throughout the day when there are no passenger aircraft scheduled to land. This is one of the key problems with the current rule.
- This option drives consistent use of terminology and standard reporting across all certificated aerodromes in New Zealand. Everyone from manufacturers, pilots, air traffic services and ground crew will all use the same terminology to describe the runway surface condition.
- Flights at unattended aerodromes receive very limited information pre-flight and en-route. Being able to access accurate information about the condition of the runway will help to better inform the judgements they make for landing in poor weather.
- Unattended aerodromes could benefit from wider economic benefits of RCR – such as reduced diverted or cancelled flights due to the pilot not having sufficient information about the runway surface in poor weather.

- Having reviewed the current arrangements at some aerodromes, along with the existing twice-daily inspections, the CAA considers that this option does not add significant burdens. All certificated aerodromes already inspect the runway at least twice a day, and many also undertake additional assessments after a particular event like heavy rain, an earthquake or during winter.<sup>16</sup> All certificated aerodromes have staff onsite prior to all scheduled passenger flights – even unattended aerodromes. This proposal builds on the existing processes and systems in place at aerodromes. However, these staff will need to be trained, and maintain currency, to undertake runway assessment and RCR.

## NPRM Development

Technical experts from the operational groups within the CAA and key external stakeholders contributed to the development of the policy and this NPRM. Airways contributed to the development of this proposal from an aeronautical information services provider perspective. Airways Ltd will need to update their software to enable communication of the RCR to the flight crew through ATIS, digital ATIS and amendments made to the NOTAM.

The development of the NPRM reflects comments and feedback received from industry through various consultation avenues referred to in the consultation section below.

In 2019, Cabinet approved the Minister of Transport’s proposal to update the rules to remove the requirement for ‘real time’ runway condition reporting. In 2020, the proposal was put on the Rules programme for an NPRM to be developed and released for public consultation.

## Consultation

The CAA engaged with key stakeholders from the earliest possible point in this project. Initial engagement included visiting some aerodromes to better understand how they undertake runway assessments. This was followed by a workshop in July 2019 to which all stakeholders were invited, to share information on RCR and gauge early feedback on proposals. Based on early feedback received, the CAA refined the proposal and re-engaged with stakeholders to get their feedback and ensure it fully understood the impact of the proposal on the stakeholders.

Meetings were held by the National Runway Safety Group which consist of the CAA, Airways and NZ Airports Association. The CAA will continue to endeavour to engage with the Board of Airline Representatives (BARNZ) and Jetstar (who were unable to attend our workshop) and also plan to re-engage with the National Runway Safety Group.

Most feedback has focussed on implementation details. Important points included the need to provide the updated Advisory Circular (AC) and any guidance well in advance so there is sufficient time to prepare. The current limitations of NOTAM’s were noted, with a desire for quality, speed and consistency and the risk of an out of date NOTAM.

There will be further opportunities for sector engagement through public consultation on the NPRM. A draft AC is included as part of the NPRM consultation, so submitters have clarity on the proposal and its impact in order to make informed submissions to the CAA.

### 2.3 Key Stakeholders

The following are identified by the CAA as key stakeholders in the proposed rule amendments contained in this NPRM:

- The Minister of Transport;
- The Ministry of Transport;
- The CAA;
- Airport Association NZ (representing all 29 Part 139 aerodromes);
- Aerodrome operators (Wellington airport, Queenstown Airport, Invercargill Airport, Christchurch Airport, Auckland Airport, Dunedin Airport, Kapiti Coast Airport)

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<sup>16</sup> AC 139-3 section 4 states that special aerodrome inspections should occur after an unusual condition or event, after receipt of a complaint (for example, substandard braking action) or an accident or incident.

- Airways Corporation Limited;
- Airlines (Part 121 and 125 - Air New Zealand, Mt Cook Airlines, Qantas, Virgin);
- Aviation Community Advisory Group (ACAG) have been updated as part of the usual policy update process;
- JNP Aviation (Ground handler company operating at numerous aerodromes);
- NZ Airline Pilot Association; and
- National Runway Safety Group (made up of CAA, Airways and NZ Airports Association – and with NZALPA in attendance at 30 April 2019 meeting).

### **3. Issues addressed during development**

One of the main issues discussed was Airways' ability to support the necessary infrastructure, especially in the wake of COVID impacts on the whole aviation sector. Internationally, RCR commenced in November 2021. However due to COVID impacts on both the sector and the CAA, it was decided that the implementation date be extended to November 2022.

The CAA initially planned to work towards a timeframe whereby the new Rules would come into force by November 2022. Due to other large drafting projects which have dragged out, the November 2022 timeframe is not feasible. As a result, exemptions previously granted by the Director with respect to rule 139.103(b)(3) which are to expire in November this year will be extended. The new extended period will take into account the global reporting format implementation date of November 2023.

A pertinent issue raised was how to get RCR to an aircraft. All parties, including Airways, agreed that the best system would be Digital ATIS (DATIS). This is similar to what other countries in APAC have implemented. However, Airways is not able to carry out the software engineering work due to resourcing constraints and the inability to get the necessary engineers into New Zealand to do the work. This will lead to further delay. It is anticipated that Airways will have the engineering work completed and the necessary infrastructure in place by November 2024.

ICAO have endorsed the SNOWTAM. The CAA considers that SNOWTAM is not a feasible solution and points out that New Zealand has a difference filed against SNOWTAMs. In any event, this solution would still require an engineering change and is therefore subject to the same constraints as the DATIS.

It was agreed that the CAA will continue to develop the rules within the current timeframes (allowing for some lag due to pressures) and that implementation may need to be delayed.

#### **3.1 ICAO Standards and Recommended Practices (SARPS)**

The proposed rule amendments are intended to align with International Civil Aviation Organization (ICAO) annexes and are written in consultation with the following annexes:

- Annex 1 – Personnel Licensing
- Annex 2 – Rules of the Air
- Annex 3 – Meteorological Services for International Air Navigation
- Annex 6 – Operation of Aircraft
- Annex 11 – Air Traffic Services
- Annex 14 – Aerodromes
- Annex 15 – Aeronautical Information Services
- Annex 19 – Safety Management

#### **3.2 Level of Risk to NZ Aviation Safety**

The level of risk as a result of the proposal is low. It is envisaged that the proposal will improve aviation safety by minimising the risks of runway excursions due to a lack of information, or unclear information, about runway conditions.

### 3.3 Compliance Costs

For affected aerodromes, the proposed approach reduces the current cost of implementing ‘real time’ runway reporting, which would have required the implementation of expensive technology.

Because all aerodromes are exempt from meeting the current rule, the overall cost of implementation will apply. Costs relate mainly to training, but at some aerodromes may include having staff on the ground for a little longer than they currently do.

This is balanced with the fact that all aerodromes currently undertake at least two inspections per day, and staff are available at all aerodromes before a passenger flight is due to land.

These marginal costs will depend on the current situation at each individual aerodrome, and in many cases will be limited to the costs of training staff.

For airlines, the main impact on airlines will be training flight crew. As mentioned earlier, the training involves getting flight crew members to learn the new RCR terminology and the delivery methods of getting RCR from the ground to the cockpit. As RCR will be implemented internationally, this training would be required for any pilot flying internationally. Airlines we have spoken to are motivated to use RCR as soon as possible.

Airways Ltd will need to update their software to enable communication of the RCR to the flight crew members through ATIS, digital ATIS and amendments made to the NOTAM. The costs for Airways are more significant than any other party.

## 4. Summary of changes

Rule 139.103(b)(3) is amended to remove the term ‘real time surface’ in the phrase *real time surface condition reporting*. Given the problems resulting from the requirement to report in real time, the initial policy work proposed to have the term ‘real time’ removed. However, when reviewing the rule, it was considered appropriate to also remove ‘surface’, for consistency with usage in the ICAO document entitled ICAO Circular 355, Assessment, Measurement and Reporting of Runway Condition, which refers to ‘runway condition reporting’.

The rule is also amended to better clarify intent that a RCR is the culmination of assessing each third of the runway and includes the measurement of runway contaminants if present. Note that the requirement to assess each third of the runway is derived from Circular 355 and not specifically expressed in the rule. Part of the assessment exercise would be to firstly determine whether the runway is contaminated. If the runway is contaminated, then the second step would be to measure the extent of the contaminant. An assessment of runway condition is more encompassing than just measuring a contaminant. In this regard, the current wording of paragraph (b)(3) which states “*provide for the measurement and provision of real-time surface condition reporting...*” is to be replaced with “*provide for an assessment of runway condition and provision of runway condition report....*”.

Rule 139.103 is further amended to state that the assessment of runway condition and the provision of runway condition report are as specified in a new rule 139.107. Although RCR is part of the general aerodrome maintenance (current rule 139.103 is entitled ‘Aerodrome maintenance’), the CAA considers RCR to be a distinct separate matter from aerodrome maintenance. It is therefore appropriate to place all matters relating to RCR in a separate rule, hence the creation of new rule 139.107.

New rule 139.107 prescribes the requirements relating to the assessment of runway condition and RCR. A holder of an aerodrome operator certificate (certificate holder) must ensure that the assessment of the runway condition and the provision of RCR is carried out either in accordance with the ICAO document entitled ICAO Circular 355 Assessment, Measurement and Reporting of Runway Conditions, or in an equivalent format acceptable to the Director. The ideal situation is that certificated aerodromes will endeavour to assess the runway condition and provide RCR in accordance with Circular 355. However, the CAA appreciates that certificated aerodromes do not have the same resources or facilities, even when these aerodromes provide services for similar aircraft operations. For instance, an uncontrolled aerodrome such as Whakatane serves operators carrying out air transport operations under Part 121, same as Wellington airport which is a controlled aerodrome. Note though that Wellington airport has more advanced infrastructure such as underground sensors in its runway to measure contamination, linked to Singapore Air.

Being mindful of the varied logistics across certificated aerodromes, the proposed rule will allow a certificate holder the flexibility to choose an assessment method and RCR method that is proportionate to meet its needs; taking into account its unique set of circumstances, whilst the passengers reap the safety benefits of RCR.

The rationale for capturing Part 121 air transport operations is to facilitate coverage of all regular passenger transport operations by aircraft with 30 or more seats. This would ensure that the majority of passengers will reap the safety benefits of RCR. New Zealand has 24 certificated aerodrome serving regular operations by a Part 121 operator. Of the 24 certificated aerodromes, 15 are controlled (ATC present) the remaining 9 are uncontrolled aerodromes (no ATC).

The proposed rule distinguishes between a controlled aerodrome and an uncontrolled aerodrome. It is proposed that a RCR is only required at an uncontrolled aerodrome after agreement between the Part 121 operator and aerodrome operator is reached regarding when and how RCR information is passed to aircraft. This acknowledges that ATC staff and associated technologies are not available at uncontrolled aerodromes. The uncontrolled aerodromes currently serving aeroplanes operated by Air New Zealand which carry out Part 121 air transport operations are Taupo, Bay of Islands, Hokitika and Timaru. The uncontrolled aerodromes currently serving aeroplanes operated by other airlines carrying out Part 121 air transport operations are Whakatane, Whangarei, Whanganui, Chatham Islands and Kapiti Coast.

#### Consequential amendments:

Rule 172.93(c) is amended to clarify that the procedures to be established are for visually determining and promulgating the description of the runway surface condition for runway third used in the RCR. This establishes the basis for the runway condition code for aeroplane performance purposes; namely whether the runway surface is dry or wet. The surface condition of dry or wet is assessed and disseminated by the air traffic control operator. Given that the current paragraph (c) contains quite a lot of information, it is proposed that the paragraph be split into 2 paragraphs (now numbered '(c)' and '(d)').

The new paragraph (d) requires an applicant for the grant of an air traffic service certificate for an aerodrome control service or aerodrome flight information service to ensure that when a runway is contaminated, a description of the runway surface conditions for each runway third is made available, using one of the terms specified in the paragraph. The current terms 'DAMP', 'WET', 'WATER PATCHES' and 'FLOODED' are to be deleted and replaced with the 8 runway descriptors used in Circular 355. These descriptors are dry snow, compacted snow, frost, ice, slush, standing water, wet ice and wet snow. The runway contaminants are assessed by the aerodrome operator and passed to the ATCO for wider dissemination.

- Rule 121.221(c)(2)(i) is amended by deleting 'real time'.
- Appendix D.3 to Part 121 which provides for TALPA procedures is to be revoked.
- Rule 125.233(c)(2)(i) is amended by deleting 'real time'.
- Appendix D.3 to Part 125 which provides for TALPA procedures is to be revoked.
- Rule 135.233(c)(2)(i) is amended by deleting 'real time'.
- Appendix D.3 to Part 135 which provides for TALPA procedures is to be revoked.

The definitions of 'contaminated', 'dry' and 'wet' in Part 1 are to be revoked and replaced with definitions of those terms which align with Circular 355. The definition of 'TALPA procedures' and abbreviation 'TALPA' are to be revoked as the use by CAA NZ of TALPA phraseology will become redundant as a result of the proposal.

## **5. Legislative analysis**

### **5.1 Power to make rules**

The Minister may make ordinary rules under sections 28, 29, 29A, 29B and 30 of the Civil Aviation Act 1990 (the Act), for various purposes including implementing New Zealand's obligations under the Convention, assisting aviation safety and security, and any matter contemplated under the Act.

These proposed rules are made by the Minister pursuant to the following sections of the Act:

- (a) Section 30(a) which allows the Minister to make rules for the designation, classification, and certification of all or any of the following:
  - (i) aircraft:
  - (ii) aircraft pilots:

- (iii) flight crew members:
  - (iv) air traffic service personnel:
  - (viii) air traffic services:
  - (ix) aerodromes and aerodrome operators:
  - (xiii) aeronautical procedures:
  - (xvii) any other person who provides services in the civil aviation system, and any aircraft, aeronautical products, aviation related services, facilities, and equipment operated in support of the civil aviation system, or classes of such persons, aircraft, aeronautical products, aviation related services, facilities, and equipment operated in support of the civil aviation system.
- (b) Section 30(d) which allows the Minister to make rules for the definitions, abbreviations, and units of measurement to apply within the civil aviation system.

## **5.2 Matters to be taken into account**

The development of this NPRM and the proposed rule changes take into account the matters under section 33 of the Act that the Minister must take into account when making ordinary rules including the following:

### ***ICAO Standards and Recommended Practices***

The proposed rule amendments are consistent with applicable sections of the following International Civil Aviation Organization (ICAO) Annexes:

- Annex 1 – Personnel Licensing
- Annex 2 – Rules of the Air
- Annex 3 – Meteorological Services for International Air Navigation
- Annex 5 – Units of Measurement to be Used in Air and Ground Operations
- Annex 6 – Operation of Aircraft
- Annex 11 – Air Traffic Services
- Annex 14 – Aerodromes
- Annex 15 – Aeronautical Information Services

### ***Assisting economic development***

Passengers will benefit from the decreased risk of runway excursion during poor weather. There are also potential (and untested) economic benefits that using RCR could help to avoid cancelled flights or diversions to another aerodrome. Unattended aerodromes could benefit from wider economic benefits of RCR, such as reduced diverted or cancelled flights due to the pilot not having sufficient information about the runway surface in poor weather.

### ***Assisting safety and personal security***

From a reputational point of view, the CAA benefits from greater compliance with ICAO SARPs, and international consistency, as well as the safety benefits within the aviation system. The New Zealand aviation system will meet the expectations of international pilots flying into New Zealand.

### ***Improving access and mobility***

It is envisaged that the proposal will improve access and mobility, as pilots are able to access accurate information about the condition of the runway which will help to better inform the judgements they make for landing in poor weather.

There could possibly be less diverted or cancelled flights due to the pilot now having sufficient information about the runway surface in poor weather.

### ***Protecting and promoting public health***

The proposal will not have a detrimental impact on public health.



**Ensuring environmental sustainability**

The proposal will not have a detrimental impact on environmental sustainability.

**5.3 Incorporation by reference**

ICAO Circular 355 Assessment, Measurement and Reporting of Runway Conditions is to be incorporated by reference in rule 139.107. Pan-Aerodromes (Doc 9981) is to be incorporated by reference in rule 172.93.

**5.4 Civil Aviation (Offences) Regulations**

Schedule 1 of the Civil Aviation (Offences) Regulations is made by the Governor General pursuant to section 100 of the Civil Aviation Act 1990 and contains a list of summary and infringement penalties associated with offences against various civil aviation rules.

The proposed rules will require an amendment to the Civil Aviation (Offences) Regulations 2006. The CAA considers it appropriate that a breach of new rules 139.107(b) and (c) should be an offence.

**6. Submissions on the NPRM****6.1 Submissions are invited**

Interested persons are invited to participate in the making of the proposed rules by submitting written data, views, or comments. All submissions will be considered before final action on the proposed rulemaking is taken. If there is a need to make any significant change to the rule requirements in this proposal as a result of the submissions received, then interested persons may be invited to make further submissions.

**6.2 Examination of submissions**

All submissions will be available for examination by interested persons both before and after the closing date for submissions. A consultation summary will be published on the CAA web site.

Submissions may be examined by appointment with the Docket Clerk during business hours on weekdays, except statutory holidays. Appointments to examine submissions are to be arranged by phone or email [docket@caa.govt.nz](mailto:docket@caa.govt.nz).

**6.3 Official Information Act**

Submitters should note that subject to the Official Information Act 1982 any information attached to submissions will become part of the docket file and will be available to the public for examination.

Submitters should state clearly if there is any information in their submission that is commercially sensitive or for some other reason the submitter does not want the information to be released to other interested parties. The CAA will consider this in making a decision in respect of any Official Information Act requests. It should be noted that the CAA cannot guarantee confidentiality in respect of any specific submissions.

**6.4 How to make a submission****6.4.1 Submission response sheet**

A submission response sheet may be downloaded from our website and sent by the following methods:

e-mail: [docket@caa.govt.nz](mailto:docket@caa.govt.nz) and marked NPRM 22-01

by mail: Docket Clerk (NPRM 21/CAR/02)  
Civil Aviation Authority  
PO Box 3555  
Wellington 6140  
New Zealand

**6.5 Final date for submissions**

Comments must be received by close of business on November 30.

**6.6 Availability of the NPRM:**

Any person may obtain a copy of this NPRM from—

CAA web site: [www.caa.govt.nz](http://www.caa.govt.nz)

***or from:***

Docket Clerk

Phone: 64-4-560 9640 (quoting NPRM 22-01 )

**6.7 Further information**

For further information, contact:

Salote Raiwalui

Rules Drafter

[Salote.Raiwalui@caa.govt.nz](mailto:Salote.Raiwalui@caa.govt.nz)

[Note: Inserted texts are shaded, deleted texts are struck through and shaded]

## Part 139 Aerodromes Certification, Operation and Use

### 139.103 Aerodrome maintenance

- (a) A holder of an aerodrome operator certificate must establish a maintenance programme, including preventative maintenance if appropriate, for maintaining the aerodrome facilities in a condition that does not impair the safety, security, regularity, or efficiency of aircraft operations.
- (b) The maintenance programme must –
- (1) provide for the surface of paved manoeuvring areas to be kept clear of any loose objects or debris that might endanger aircraft operations; and
  - (2) provide for the surface of paved runways to be maintained in a condition that provides good surface friction characteristics and low rolling resistance for aircraft; and
  - (3) after 31 July 2018, provide for the measurement an assessment of runway condition and provision of real-time surface-runway condition reporting report when a runway is contaminated using standardised reporting methods as specified in rule 139.107.

### 139.107 Assessment of runway condition and provision of runway condition report

- (a) A holder of an aerodrome operator certificate must ensure that the assessment of the runway condition and the provision of a runway condition report –
- (1) is in accordance with the ICAO Circular 355 Assessment, Measurement and Reporting of Runway Conditions which includes using the runway condition code as contained in the AIPNZ; or
  - (2) is in an equivalent format acceptable to the Director.
- (b) The holder of an aerodrome operator certificate for a controlled aerodrome that serves an air transport operation being carried out under Part 121 must ensure that the runway condition report –
- (1) is produced daily before the start of the operation; and
  - (2) is amended when there is a change in the conditions since the last report was made; and
  - (3) is issued in a timely manner to operators.
- (c) The holder of an aerodrome operator certificate for an uncontrolled aerodrome that serves an air transport operation being carried out under Part 121 must ensure that the runway condition report –
- (1) is produced daily before the start of the operation, with a second inspection at civil evening twilight if additional operations are scheduled; and
  - (2) is amended when there is a change in the conditions since the last report, and immediately before the runway is used for an operation; and
  - (3) upon agreement with an operator, is available for issue in a timely manner and in a format acceptable to the Director.
- (d) For the purposes of this rule, a change in the conditions includes –
- (1) when the runway conditions have changed significantly due to meteorological conditions; or
  - (2) following a report of poor braking action.

## Part 172 Air Traffic Service Organisations Certification

### 172.93 Flight information service

#### General

(a) An applicant for the grant of an air traffic service certificate must establish procedures for ensuring that a flight information service is provided to the following -

- (1) each aircraft being provided with an ATC service that is likely to be affected by the information in paragraph (b):
- (2) each aircraft being provided with an aerodrome flight information service that is likely to be affected by the information in paragraph (b):
- (3) each aircraft operating IFR that is likely to be affected by the information in paragraph (b):
- (4) any aircraft operating VFR for which the pilot has submitted a VFR flight plan to an ATS unit:
- (5) any aircraft operating VFR if the pilot makes a specific request to an ATS unit for flight information.

(b) The applicant must ensure that the procedures required by paragraph (a) for the provision of the flight information service includes the provision of available and relevant—

- (1) SIGMET information; and
- (2) information on weather conditions reported or forecast at departure, destination, and alternate aerodromes; and
- (3) information concerning pre-eruption volcanic activity, volcanic eruptions, and volcanic ash clouds; and
- (4) information concerning the release into the atmosphere of radioactive materials or toxic chemicals; and
- (5) information on changes in the serviceability of navigation aids; and
- (6) information on changes in the condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow, ice, or water; and
- (7) information on unmanned free balloons; and
- (8) other information likely to affect safety.

(c) An applicant for the grant of an air traffic service certificate for an aerodrome control service or aerodrome flight information service must establish procedures for ensuring that, whenever water is present on a runway, a description of the runway surface conditions on the centre half of the width of the runway is made available using one of the following terms: for the air traffic service personnel to visually determine and promulgate one of the following description of the condition of the runway surface used in the runway condition report which establishes the basis for the determination of the runway condition code for aeroplane performance purposes -

- (1) dry – runway surface is free of visible moisture and not contaminated within the area intended to be used; or
- (2) wet – the surface is soaked but there is no standing water.

(d) An applicant for the grant of an air traffic service certificate for an aerodrome control service or aerodrome flight information service must establish procedures for ensuring that, whenever water is present on a runway, a description of the runway surface conditions on the centre half of the width of the runway. After receiving advice regarding a runway condition from a holder of an aerodrome operator certificate, the applicant referred to in paragraph (c) must ensure that a description of the runway condition for each runway third is made available using one of the following terms -

- (1) DAMP – the surface shows a change of colour due to moisture (paragraph number to be reserved):
- (2) WET – the surface is soaked but there is no standing water dry snow – snow from which a snowball cannot be readily made (paragraph number to be reserved):

- (3) ~~WATER PATCHES~~ — significant patches of standing water are visible (paragraph number to be reserved):
- (4) ~~FLOODED~~ — extensive standing water is visible (paragraph number to be reserved):
- (5) dry snow – snow from which a snowball cannot be readily made:
- (6) compacted snow – snow that has been compacted into a solid mass:
- (7) frost – consists of ice crystals formed from airborne moisture on a surface whose temperature is below freezing; crystals have a more granular texture than ice; and under certain conditions can cause the surface to become very slippery and it is then reported as reducing braking action:
- (8) ice – water that has frozen or compacted snow that has transitioned into ice, in cold and dry conditions:
- (9) slush – snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully:
- (10) standing water – water of depth greater than 3mm, which includes running water of depth greater than 3mm:
- (11) wet ice – ice with water on top of it or ice that is melting; it can cause the surface to become very slippery and is to be reported appropriately as reduced braking action in line with procedures in the PAN-Aerodromes (Doc 9981):
- (12) wet snow – snow that contains enough water content to be able to make a well-compacted, solid snowball, but water does not squeeze out.

(e) An applicant for the grant of an air traffic service certificate for an aerodrome control service, approach control service, or aerodrome flight information service must establish procedures for ensuring that, if practical, local aircraft operators likely to be affected by the information are advised of short-notice changes to published hours of service if they are unlikely to have the information from any other source.

#### **Traffic Information**

(f) An applicant for the grant of an air traffic service certificate for an air traffic control service must establish procedures for ensuring that essential traffic information is passed to all affected traffic.

(g) An applicant for the grant of an air traffic service certificate must establish procedures for ensuring that each ATS unit operating under that certificate provides traffic information to flights that are known to the ATS unit and are likely to be affected by the information as follows:

- (1) in class C airspace, between VFR flights, together with traffic avoidance advice on request:
- (2) in class D airspace, between IFR and VFR flights, and between VFR flights, together with traffic avoidance advice on request:
- (3) if practical, in class E airspace, between IFR and VFR flights, and between VFR flights on request:
- (4) in class G airspace, between IFR flights, and, if practical, between other flights on request.

## **Part 121 Large Aeroplanes**

### **121.221 Landing distance - runways**

(a) A holder of an air operator certificate must ensure that, for each aeroplane it operates, the landing weight for the estimated time of landing will not exceed the landing weight specified in the aeroplane flight manual.

(b) A holder of an air operator certificate must use the following procedures for calculating the landing distance for an aeroplane on a runway:

- (1) that have been approved under paragraph (c); or

- (2) as provided in Appendix D.
- (c) The Director may, after taking account of the following matters, approve an application by a holder of an air operator certificate for procedures if satisfied—
- (1) whether or not the aeroplane proposed has performance data issued by the manufacturer supporting the procedures that is available for use by the pilot or flight crew; and
  - (2) whether the operator has reliable access to either –
    - (i) accurate, ~~real time~~ reporting on runway conditions that is appropriate for the procedures to be used; or
    - (ii) data that enables the operator to identify equivalent conditions; and
  - (3) the margin of error that should be applied when calculating landing distance using the procedures which must take into account:
    - (i) the implications of pilot technique on landing distance;
    - (ii) the implications of unexpected environmental conditions at the destination aerodrome;
    - (iii) whether the calculation is being undertaken at the dispatch stage or en-route;
    - (iv) whether the margin of error is supported by the reporting of the runway conditions; and
  - (4) whether all personnel involved in the reporting of runway conditions, calculation of data and operation of the flight have had appropriate training in the use of the procedures.

## Appendix D — Landing Distance Assessments for Runways

### ~~D.3 TALPA procedures~~

~~A holder of an air operator certificate must carry out the following alternate procedure under rule 121.221(b)(2) that provides for calculation of the landing distance for a runway:~~

- ~~(1) utilising TALPA performance data provided by the aircraft manufacturer to enable inflight calculation of landing performance by the flight crew in accordance with the manufacturer's recommendations; and~~
- ~~(2) utilising appropriate aerodrome data including, but not limited to, surface conditions and ambient weather, on runway conditions.~~

## Part 125 Medium Aeroplanes

### 125.233 Landing distance – runways

- (a) A holder of an air operator certificate must ensure that, for each aeroplane it operates, the landing weight for the estimated time of landing will not exceed the landing weight specified in the aeroplane flight manual.
- (b) A holder of an air operator certificate must use the following procedures for calculating the landing distance for an aeroplane on a runway:
- (1) that have been approved under paragraph (c); or
  - (2) as provided in Appendix D.
- (c) The Director may approve an application by a holder of an air operator certificate for procedures referred to in paragraph (b)(1) if satisfied of the following matters:
- (1) whether or not the aeroplane proposed has performance data issued by the manufacturer supporting the procedures that is available for use by the pilot or flight crew; and
  - (2) whether the operator has reliable access to either –
    - (i) accurate, ~~real time~~ reporting on runway conditions that is appropriate for the procedures to be used; or

- (ii) data that enables the operator to identify equivalent conditions; and
- (3) the margin of error that should be applied when calculating landing distance using the procedures which must take into account the following:
  - (i) the implications of pilot technique on landing distance;
  - (ii) the implications of unexpected environmental conditions at the destination aerodrome;
  - (iii) whether the calculation is being undertaken at the dispatch stage or en-route;
  - (iv) whether the margin of error is supported by the reporting of the runway conditions; and
- (4) whether all personnel involved in the reporting of runway conditions, calculation of data and operation of the flight have had appropriate training in the use of the procedures.

## Appendix D — Landing Distance Assessments for Runways

### D.3 TALPA procedures

~~A holder of an air operator certificate must carry out the following procedures under rule 125.233(b)(2) that provides for calculation of the landing distance for a runway —~~

- ~~(1) utilising TALPA performance data provided by the aeroplane manufacturer to enable inflight calculation of landing performance by the flight crew as specified in the manufacturer's recommendations; and~~
- ~~(2) utilising appropriate aerodrome data including, but not limited to, surface conditions and ambient weather, on runway conditions.~~

## Part 135 Small Aeroplanes

### 135.233 Landing distance – runways

- (a) A holder of an air operator certificate must ensure that, for each aeroplane it operates, the landing weight for the estimated time of landing will not exceed the landing weight specified in the aeroplane flight manual.
- (b) A holder of an air operator certificate must use the following procedures for calculating the landing distance for an aeroplane on a runway:
  - (1) that have been approved under paragraph (c); or
  - (2) as provided in Appendix D.
- (c) The Director may approve an application by a holder of an air operator certificate for procedures referred to in paragraph (b)(1) if satisfied of the following matters:
  - (1) whether or not the aeroplane proposed has performance data issued by the manufacturer supporting the procedures that is available for use by the pilot or flight crew; and
  - (2) whether the operator has reliable access to either –
    - (i) accurate, ~~real time~~ reporting on runway conditions that is appropriate for the permitted procedures to be used; or
    - (ii) data that enables the operator to identify equivalent conditions; and
  - (3) the margin of error that should be applied when calculating landing distance using the permitted procedures which must take into account the following:
    - (i) the implications of pilot technique on landing distance;
    - (ii) the implications of unexpected environmental conditions at the destination aerodrome;

- (iii) whether the calculation is being undertaken at the dispatch stage or en-route;
  - (iv) whether the margin of error is supported by the reporting of the runway conditions; and
- (4) whether all personnel involved in the reporting of runway conditions, calculation of data and operation of the flight have had appropriate training in the use of the procedures.

### **D.3 TALPA procedures**

~~A holder of an air operator certificate must carry out the procedures under rule 135.233(b)(2) that provides for calculation of the landing distance for a runway~~

- ~~(1) utilising TALPA performance data provided by the aircraft manufacturer to enable inflight calculation of landing performance by the flight crew in accordance with the manufacturer's recommendations; and~~
- ~~(2) utilising appropriate aerodrome data including, but not limited to, surface conditions and ambient weather, on runway conditions.~~

## **Part 1 Definitions and Abbreviations**

### **1.1 General definitions**

**Contaminated**, in relation to a runway, means a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed in the runway surface condition descriptors as contained in the NZAIP: ~~more than 25% of the runway surface area within the required length and width is covered by surface water, slush, or loose snow more than 3 millimetres in depth, or ice on any part of the runway surface area~~

**Dry**, in relation to a runway, means a runway surface is free of visible moisture and not contaminated within the area intended to be used;

**Wet**, in relation to a runway, means a runway surface is covered by any visible dampness or water up to and including 3 mm deep within the area intended to be used:

#### ~~TALPA procedures~~

- ~~(1) means a standardised approach, developed by the Federal Aviation Administration, for assessing the condition of runways and determining the length of runways required for landing; and~~
- ~~(2) includes the use of performance data provided by an aircraft manufacturer; and~~
- ~~(3) includes a standardised approach referred to in paragraph (1) as adopted or amended by an aircraft manufacturer;~~

### **1.3 Abbreviations**

~~**TALPA** means Take-off and Landing Performance Assessment~~