

Regulatory Impact Statement

Amendment to Rule Part 139 Aerodromes – Certification, Operation and Use

Agency Disclosure Statement

1. This Regulatory Impact Statement (RIS) has been prepared by the Civil Aviation Authority (CAA) and reviewed by the Ministry of Transport.
2. It provides an analysis of options to improve safety practices at both certificated and non-certificated aerodromes and to bring the New Zealand Civil Aviation Rules in line with international best practice.
3. As there is no requirement for non-certificated aerodromes to provide data to the CAA, there is a lack of information, safety and cost data on non-certificated aerodromes in New Zealand. CAA technical experts have estimated costs outlined in this RIS, in particular, those relating to non-certificated aerodromes.
4. The Ministry of Transport is satisfied that the cost estimates are reasonable.

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Ministry of Transport

Date: 10 June 2015

Executive Summary

5. This Civil Aviation Rule amendment is addressing two areas of concern:
 - *Non-certificated aerodromes:* Gaps in safety oversight: The Director of Civil Aviation (the Director) has limited mechanisms for regulatory oversight at non-certificated aerodromes. There is also very little data available on aircraft movements at these aerodromes to enable assessment of risk.
 - *Certificated aerodromes:* compliance with International Civil Aviation Organization (ICAO) standards: New Zealand has fallen behind in its alignment and obligations with the ICAO Standards and Recommended Practices (SARPs) for aerodromes. This potentially undermines New Zealand's reputation for aviation safety and could have a negative economic impact.
6. To address these concerns the Rule introduces the following:
 - A new risk-based regulatory approach to regulation of non-certificated aerodromes so that the Director can assess and address risk on a case by case basis. Mandatory aircraft movement reporting requirements will support this approach.
 - New standards for certificated aerodromes to align with ICAO requirements.
7. The Civil Aviation Authority (CAA) considered a range of options to address these concerns - from voluntary approaches to mandatory requirements. Annex 1 contains a summary of this analysis. The selected options are the most effective, as they will allow the CAA to target interventions at the aerodromes that exacerbate risk in the aviation system.
8. The Rule has undergone two rounds of public consultation as a draft proposal. It has substantially changed following consultation to take into account submitters' views and to align with the CAA's move to a risk based approach to regulation. Key stakeholders agree with the change in approach.

Status quo

New Zealand's Aerodromes

9. Aerodromes are a key element of the New Zealand aviation industry. A report in 2009 estimated the industry revenue was \$9.7 billion, with \$5.9 billion from domestic activities and \$3.8 billion from export activities. Of this, 966 million or 10% of the total revenue originates from aerodrome operations¹.

¹ *New Horizons: A report on New Zealand's aviation industry, prepared for NZ Trade and Enterprise, Knotridge Limited June 2010.*

10. An aerodrome is any place an aircraft lands². New Zealand has 172 aerodromes published in the New Zealand Aeronautical Information Publication (NZAIP)³. Of these, the CAA has certificated 27 aerodromes⁴. The remainder are non-certificated.

Table 1: breakdown of Aerodromes published in the New Zealand Aeronautical Information Publication (NZAIP)

Aerodromes published in the NZAIP	172 Total
Aerodromes certificated by the CAA	27 Total <ul style="list-style-type: none"> • 4 international • 22 domestic • 1 military (Ohakea)
Non-certificated aerodromes published in the NZAIP	146 Total <ul style="list-style-type: none"> • 94 fixed wing aerodromes • 49 heliports • 3 water aerodromes

11. More than 28 million travellers pass through New Zealand’s aerodromes every year in over 700,000 aircraft movements. Of these, 10 million pass through our international aerodromes⁵.

12. The majority of passengers use New Zealand’s certificated aerodromes. However, non-certificated aerodromes also play an important role in passenger movements. For example, there are 20 non-certificated aerodromes adjacent to communities of greater than 5000 people⁶. Of these, 11 non-certificated aerodromes currently serve or have served regular mid-size air transport operations (9-30 seat) in the past. These include Kaitaia, Kaikohe, North Shore, Masterton, Kaikoura, Oamaru, Greymouth, Wanaka, Alexandra and Stewart Island (Ryan’s Creek).

² Aerodrome means “any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft”. *Civil Aviation Rule Part 1 - Definitions*.

³ The NZAIP is a guidance document commissioned by the CAA and published by Airways New Zealand. Pilots use the NZAIP to determine whether an aerodrome design is appropriate for their specific operation. It publishes runway widths and lengths, runway strip widths, obstacles and other useful operational data that enables the pilot to judge the risk and make a decision about whether or not it is safe to land.

⁴ Certificated aerodromes are: Auckland (International), Chatham Islands, Christchurch (International), Dunedin (International), Kerikeri/Bay of Islands, Gisborne, Napier, Hokitika, Invercargill, Paraparaumu, Woodbourne, Nelson, New Plymouth, Palmerston North, Queenstown (International), Rotorua, Ohakea (Military), Te Anau/Manapouri, Taupo, Tauranga, Timaru, Hamilton, Wanganui, Wellington (international), Westport, Whakatane and Whangarei.

⁵ *New Horizons: A report on New Zealand’s aviation industry, prepared for NZ Trade and Enterprise*, Knotridge Limited June 2010.

⁶ Non-certificated Aerodromes adjacent to communities of greater than 5,000 people include: Hastings, Masterton, Levin (Foxpine), Ashburton, Rangiora, Fielding, Oamaru, Tokoroa, Hawera, Greymouth, Waiheke Island, Motueka, Wanaka, Otaki, Stratford, Kaitaia, Dannevirke, Alexandra, Ardmore, North Shore.

13. In addition, over 50 non-certificated aerodromes are used for both tourist and smaller air transport operations. Some of these serve popular tourism centres, including Milford Sound, Mount Cook, Kaikoura, Franz Josef, Stewart Island (Ryan's Creek), Great Barrier Island, Golden Bay (Takaka), Tekapo, Waiheke Island, Wanaka, Coromandel and Kerikeri.
14. Over 1,000 more aerodromes are not listed in the NZAIP. These aerodromes serve general and recreational aviation (e.g., grass strips on farms for private use or for agricultural operations such as top dressing⁷).
15. New Zealand's aerodromes are diverse in their size and purpose. With the exception of Auckland International Airport, which serves mostly 19+ seat air transport operations, a number of certificated and non-certificated aerodromes serve a full range of operations. These include medium-large air transport operators, tourist operators, training providers, private operations, agricultural operations, aircraft storage facilities and engineering workshops.
16. Aerodromes are operated by a mix of organisations and individuals with a range of capabilities to ensure safety and regulatory practice at their aerodromes. They are managed by private for-profit companies, councils, a joint venture with the Crown, trusts, aero clubs and individuals.
17. Each aerodrome has its own unique characteristics and risk profile.

International obligations

18. Regulation of aerodromes in New Zealand is driven at least in part by international obligations. New Zealand is a member of ICAO as a signatory to the Chicago Convention. ICAO sets Standards and Recommended Practices (SARPs) for aviation safety, security, efficiency and environmental protection. The SARPs relating to aerodromes are in Annex 14 Volume 1 of the Chicago Convention. They include minimum specifications for aerodrome physical characteristics and obstacle limitation surfaces, facilities and technical services. New Zealand has an obligation to implement SARPs where practicable.
19. ICAO Standards are binding for member States unless the State files a difference with ICAO. New Zealand has filed a difference to notify ICAO that it does not comply with ICAO Standards for all domestic aerodromes, as ICAO Standards are designed for international operations, not smaller domestic aerodromes.

⁷ Because these aerodromes are not listed in the NZAIP, there is no record of the exact numbers. There could be over 6,000 farm airstrips because of the heavy reliance on top-dressing in New Zealand's farming sector. 49% of the 12,370 farms in New Zealand are hill country farms. Each of these will have an airstrip for top dressing or will share with a neighbouring farm. Farm data sourced from *Transforming hill country farming returns with remote soil scanning and variable rate aerial application, Nutrient know-how for New Zealand, A Primary Growth Partnership Research Initiative*; <http://www.ravensdown.co.nz/nz/Documents/pgp-brochure.pdf> 2014 version 3.

New Zealand Regulatory environment

20. The Civil Aviation Act 1990 (the Act) sets overarching requirements for certification of participants in the aviation system. The Act also requires that rules made by the Minister of Transport (the Minister) shall not be inconsistent with ICAO Standards relating to aviation safety and security, to the extent adopted by New Zealand⁸. Under section 14 of the Act, an objective of the Minister is to ensure that New Zealand's obligations under international civil aviation agreements are implemented.
21. Section 44 of the Act bestows powers on the Director to deal with dangerous situations involving aerodromes in a punitive sense. However, the Act specifically excludes aerodromes from Section 21 of the Act, which is the provision that provides the Director with the power to proactively address safety concerns about operators that are not certificated⁹.
22. Sections 28 and 29 of the Act provide for aviation rules to control safety at aerodromes. The key Rule governing aerodrome safety is Rule Part 139 - Aerodromes - Certification, Operation and Use (Rule Part 139). Rule Part 139 currently applies to aerodromes serving regular large domestic operators with aircraft with greater than 30 seats. It specifies both the certification process requirements and the specific controls that apply to these aerodromes. Once an aerodrome is certificated under this Rule, it comes under the CAA audit programme.
23. Rule Part 139 is silent on requirements for non-certificated aerodromes – i.e. those domestic aerodromes serving operations of less than 30 seats.
24. Some requirements on the use of aerodromes also exist in other Civil Aviation Rules. For example smaller commercial flight operators (i.e. less than 30 seats) must comply with operating rules that ensure the aircraft only uses aerodromes that are appropriate for the operating limits of the aircraft, including runway length, width and strip width. The rules governing private aircraft operations contain a generic requirement for pilots to ensure that the aerodrome is appropriate for their aircraft. These requirements apply at both certificated and non-certificated aerodromes.
25. To maintain safety at non-certificated aerodromes, the CAA focusses on the use of guidance (through aerodrome visits and advisory circulars that set out best practice) and provision of information to pilots through the NZAIP.

Relevant decisions

The Rule Part 139 project was on the 2014/15 Transport Rules Programme that Cabinet approved in August 2014 [CAB Min (14) 27/12 refers].

⁸ Section 33(1)(a) of the Act.

⁹ Issues with Limitations of the Civil Aviation Act are out of scope in this project. The Ministry of Transport Review of the Civil Aviation Act is looking at this matter.

Problem definition

26. There are two main areas of concern.

- **Non-certificated aerodromes: Gaps in safety oversight:** The Director has limited mechanisms for regulatory oversight over the safety of the public at non-certificated aerodromes. There is also very little data available on aircraft movements at these aerodromes.
- **Certificated aerodromes: ICAO compliance:** New Zealand has fallen behind in its alignment and obligations with the ICAO SARPs for aerodromes. This potentially undermines New Zealand's reputation for aviation safety and could have a negative economic impact.

Safety oversight at non-certificated aerodromes

What is the problem?

27. The Director has very limited regulatory powers to address significant aviation safety concerns at non-certificated aerodromes except through guidance and encouragement of voluntary action.

28. This is compounded by the lack of data about non-certificated aerodromes and aircraft movements at these aerodromes.

What are the safety implications?

29. The CAA has completed an analysis of 100 non-certificated aerodromes published in the NZAIP. It identified that 36 aerodromes of these aerodromes do not meet the ICAO SARPs for aerodromes¹⁰. At least 13 aerodromes serve small-medium air transport operations with less than 30 seats. While the ICAO SARPs are designed to apply to aerodromes servicing international air traffic, the SARPs cover aerodromes from 800-metre airstrips to major international runways.

30. Lack of compliance with ICAO SARPs does not in itself indicate a safety risk, but it provides an indicator that safety risks may be present at some non-certificated aerodromes. While the Director is able to work collaboratively with many of these aerodromes to mitigate any safety issues, there are occasions where a voluntary approach has failed. In these cases, the Director has very limited ability to ensure the safety of the public at the aerodrome.

¹⁰ *Minimum Standards at Aerodromes: Review of Part 139 Rule proposals*, Civil Aviation Authority, 20 February 2015.

31. For example, a 2012 Transport Investigation Accident Commission (TAIC) report on a mid-air collision in Paraparaumu in February 2008 identified failings in the CAA's ability to regulate non-certificated aerodromes¹¹. The TAIC report was followed by a Coroner's report in December 2014 that reached similar conclusions¹². Similarly, the Director considers that two small privately owned grass aerodromes are unsafe due to their close proximity to each other. However, the Director is unable to require the owners to address the safety risks.
32. Paraparaumu aerodrome is now certificated and is on the CAA's audit programme. However, this is not the case for the 11 aerodromes that serve or have served medium size passenger air services or the 50+ aerodromes serving tourist and smaller air transport operations.
33. It is difficult to precisely assess the safety risks associated with the CAA's inability to provide adequate oversight of these non-certificated aerodromes. Statistics show that 2 percent of all accidents since 2005 have happened at or around aerodromes¹³. However, a CAA study of incidents at New Zealand aerodromes from 2011-2014 indicates that there are no obvious trends that would require immediate action across all non-certificated aerodromes¹⁴. In fact, New Zealand's incident rate of 0.2 per 1,000 aircraft movements is significantly lower than the world average or one incident per 1,000 aircraft movements.
34. However, the level of data reporting by non-certificated aerodromes is very low, despite a requirement for aerodromes to report incidents under Rule Part 12. Of all incidents reported, 94 percent are from the 27 certificated aerodromes, while the remaining 6 percent are reported by all other aerodromes. The data available cannot therefore be relied on to provide confidence that all non-certificated aerodromes are safe.
35. The lack of data to track incidents at non-certificated aerodromes needs to be addressed.

What are the domestic economic implications?

36. The cost of any accident in aviation is high, both in terms of reputation for New Zealand and in human cost.¹⁵ It is therefore important that the Director has an effective mechanism to identify risk areas and reduce the risk where it is identified, and when education and encouragement of voluntary action fails.

¹¹ *Investigation Report 08-001, Cessna 152 ZK-ETY and Robinson R22 ZK-HGV, mid-air collision, Paraparaumu, 17 February 2008*
http://www.taic.org.nz/ReportsandSafetyRecs/AviationReports/tabid/78/ctl/Detail/mid/482/InvNumber/2008-001/language/en-US/Default.aspx?SkinSrc=%5BG%5Dskins%2FtaicAviation%2Fskin_aviation.

¹² *Decision number 131.2014 In the matter of an inquest into the deaths of James David Taylor, David Mark Fielding and Bevan Andrew Hookway, Coroner's Court, Wellington.*

¹³ Data obtained from CAA Intelligence, Safety and Risk unit, February 2015.

¹⁴ *Incidents at New Zealand aerodromes 2011-2014*, Civil Aviation Authority, February 2015.

¹⁵ For example, following the death of six Japanese tourists in a mid air collision in Milford Sound in 1989, the reputational impact for New Zealand was estimated at \$30 million in lost tourism revenue, *Te Ara*: <http://www.teara.govt.nz/en/air-crashes/page-4>.

ICAO compliance at Certificated Aerodromes

What is the problem?

37. In 2006, an ICAO audit of New Zealand's compliance with international requirements resulted in nine findings associated with inadequate regulation of aerodromes. The findings included issues with:
- runway friction levels
 - runway end safety areas (RESAs)¹⁶
 - emergency management including fire services at aerodromes
 - obligations to monitor land use changes¹⁷, and
 - the effective use of aeronautical studies (risk assessments) and safety management systems as a management tool.
38. Consistent management and design standards at international airports are an important way of reducing accidents. For example, inconsistency in the approach to calculation of runway friction coefficients¹⁸ can mean the difference between an aircraft landing safely and a runway overrun.
39. Because New Zealand's regulatory system does not fully match ICAO requirements, this can lead to a perception of non-compliance (both within ICAO and by other States). This creates a reputational risk for New Zealand that could result in economic impacts should our lack of international alignment discourage operators from flying to, from and between aerodromes in New Zealand.
40. In reality, the safety risk resulting from lack of regulatory alignment is not high, because most certificated aerodromes in New Zealand are largely compliant with ICAO Standards. The CAA has included the ICAO SARPs in the advisory circulars for aerodromes. The CAA and the aerodrome operators have relied heavily on these advisory circulars when determining whether the aerodrome can be certified. However, as advisory circulars are guidance documents they only have limited regulatory power.

¹⁶ Amendment 5 to Rule Part 139 in late 2006 addressed ICAO compliance regarding RESAs. This was not in response to the 2006 ICAO audit. The CAA has already initiated a Rule Project prior to the audit. The project was still underway at the time of the audit - hence the finding.

¹⁷ Land use matters are outside the scope of this rule project. The New Southern Sky programme to modernise New Zealand's aviation system is considering ways to improve collaboration between airports, local councils, users and their neighbours.

¹⁸ Runway Friction Coefficients are a way of measuring runway slipperiness - the coefficient is governed by the interaction of all components of the system which include the tyre, the pavement, the material on the pavement, and the atmospheric conditions.

Objectives

41. The key objectives for the proposed rule are to ensure effective safety oversight of all aerodromes in New Zealand by providing the Director with the appropriate tools to be able to manage risk without overburdening the aviation industry with unnecessary cost.

Regulatory Impact Analysis

42. The CAA identified and evaluated a number of interventions to meet the objectives of the proposed rule. A summary of the options analysis is contained in Annex 1. The options ranged from continuing with a voluntary approach through to adjusting regulatory standards. Options to adjust regulatory standards ranged from prescriptive 'one-size-fits-all' approach to a more flexible risk-based approach.
43. Two options are preferred that address the two problems identified.
- **For non-certificated aerodromes:** Implement a new risk-based regulatory approach that the Director can use to assess and address risk on a case-by-case basis. This would be supported by mandatory aircraft movement reporting requirements.
 - **For certificated aerodromes:** Align standards for certificated aerodromes with ICAO requirements.

Key features and impacts of the preferred options

Non-certificated Aerodromes: a new risk-based regulatory approach to certification

44. The proposed Rule amendment introduces the concept of risk into aerodrome safety oversight. Specifically this option would allow the Director to:
- Require an aeronautical study (risk assessment) if triggered by a set of criteria, including.
 - Changes in aerodrome use such as the introduction of an air transport service, changes in aircraft or ground movements or changes in the types of operations.
 - Where a safety concern is evident – such as increases in incidents or accidents, or notification of concerns to the Director.
 - Assess the risk based on the aeronautical study.
 - Consult with the operator to mitigate the risk.
 - If this process identifies the need, require a qualifying operator certificate.

45. Not all aeronautical studies will result in the Director requiring the operator to obtain a qualifying operator certificate. Those operators that are required to obtain one will go through a streamlined process compared with the standard aerodrome operator certification. Standard aerodrome operator certification requires the operator to comply with all standards. Certification and operating requirements for qualifying aerodromes will be more flexible. They can be designed in a way that aligns the risks identified during the aeronautical study with the requirements placed on the operating certificate.
46. To support the risk based approach to certification, and to address gaps in the data available on aerodrome movement, mandatory aircraft movement reporting will be extended to most aerodromes. Agricultural airstrips will be exempt from reporting requirements.
47. The rule will not prescribe exact reporting requirements, to allow the CAA to apply a flexible approach. Specifically, supporting advisory circulars will make it clear that smaller aerodromes that currently do not already track aircraft landings will be able to report estimated movement volumes. Non-certificated aerodromes will only be required to report annually whereas certificated aerodromes will be required to do so quarterly.

Benefits

48. The risk based assessment process will allow the flexibility to address safety concerns at New Zealand's domestic aerodromes based on the highest need or greatest risk at each aerodrome rather than a one size fits all solution.
49. It allows individual assessment of the unique range of factors at an aerodrome, including the local physical environment, weather patterns, the types and range of operations the aerodrome serves, the pattern of movement volumes and the interaction of all these factors with the specific design of the aerodrome.
50. Consequently, the CAA will be able to target interventions at the aerodromes that exacerbate risk in the aviation system, rather than spreading the regulatory burden across all aerodromes, regardless of risk.
51. It is difficult to properly assess how many incidents will be avoided due to the new risk based approach. The changes are likely to result in a net safety benefit, based on the assumption that the ability for the Director to target high-risk aerodromes will result in fewer incidents at these aerodromes.

Costs

Government costs

52. The net impact of the changes for the government will be minimal as the CAA recovers its costs from the industry through fees and charges.
53. The CAA does not expect any net increase in government oversight costs. The CAA resources are currently spread across all non-certificated aerodromes on education and encouragement of voluntary action. Under the proposed changes, the CAA will focus these resources more closely on risk exacerbaters, rather than those that have appropriate and effective safety systems in place.

54. Because the proposed risk based approach to certification is relatively new, the CAA expects that there will be some training requirements for CAA staff in the implementation of the new approach. The CAA will achieve this within its funding baselines.

Industry costs: Risk based approach to certification of other aerodromes

55. The main compliance costs associated with the risk based approach will be:

- when the Director requires an aerodrome to undertake an aeronautical study,
- when the Director requires a non-certificated aerodrome to obtain a qualifying operator certificate following his assessment of the Aeronautical Study.

Industry costs: Costs of aeronautical studies

56. Aeronautical studies are risk assessments. Depending on the issue, the scale of the risk assessment required will vary, so that small concerns or issues should require relatively low cost studies and mitigation options while larger issues may require more comprehensive assessment.

57. An example is the aeronautical study the Ministry of Transport conducted on Milford Aerodrome in 2012/13, which cost \$46,000. However, as this study included assessment of traffic flows and volumes well beyond Milford aerodrome itself, it was significantly wider in scope than the aeronautical studies the CAA will generally require under the new Rule. Studies required under the new Rule Part 139 will be limited to aerodrome management and design.

58. Three examples of different types of aeronautical study and their estimated costs are set out below:

- *Case 1: Low risk* – For example, the Director identifies trees at the end of the runway have grown too high and may be causing a safety risk. The aerodrome operator has not been proactive in identifying and responding to the risk.

Total \$1550 including:

- survey costs (\$400)
 - two hours of time for a person to complete the study and identify risk mitigation options (at \$275/hr)
 - two hours of CAA time to assess the study (at \$300/hr).
- *Case 2: Medium risk* – For example, the Director has concerns about a mid-size aerodrome serving a regular air transport operation where data movement reporting indicates traffic volumes have increased, resulting in increased incidents. The Director has concerns that the aerodrome operator has not fully considered the systems and design of the aerodrome required to handle this increased volume.

Total \$7500 including:

- 20 hours of an expert's time to assess likely risks associated with the interaction between the range of operations and identify risk mitigation options (at \$300/hr)
 - 5 hours of CAA time to assess the study (at \$300/hr).
- *Case 3: High risk* – An aerodrome in a popular tourist centre that already serves a large number of tourist operators accepts a new regular air transport passenger service operating 14 passenger seat aircraft. It is also in discussions with a new international flying school. The Director has concerns that the aerodrome operator has fully considered the systems and design of the aerodrome required to handle this increased volume.

Total \$21,000 including:

- 60 hour study to assess the risks associated with the introduction of the new operations (at \$300/hr)
- 10 hours of CAA time to inspect the aerodrome and assess the study (at \$300/hr).

Industry costs: Costs of obtaining a Qualifying Operating Certificate

59. Should any of the scenarios above result in the Director concluding that certification is required, then CAA certification costs will also apply. The qualifying operator certificate process is a streamlined version of the current certification process, so the average cost will be lower. The cost will range from \$3,000-\$10,000 depending on the nature of the risk presented at the aerodrome.
60. It is possible that some operators that have voluntarily obtained an aerodrome operator certificate under the current Rule may elect to obtain a qualifying aerodrome operator certificate when their current certificate expires, as this option may result in a reduced certification cost.

Costs: Implementation of risk mitigation measures

61. There are two points in the process where risk mitigation costs will apply to the aerodrome operator.
- Following the aeronautical study, the operator may propose risk mitigation measures that are satisfactory to the Director. The cost of these risk mitigation measures will vary depending on the risk mitigation. For example, in Case 1 above, risk mitigation costs may simply be the cost of tree pruning. In Case 2, the mitigation options may be more extensive depending on the risks identified. For example, it could involve agreement to increase taxiway and runway widths, improve lighting and install a flight information service.
 - If the Director concludes that a qualifying operator certificate is required, then similar risk mitigation costs will apply. In addition to this, ongoing costs of maintaining the qualifying operating certificate will also apply, including implementation of management and reporting processes and appointment and approval of senior people.

Aligning certificated aerodromes with ICAO Standards

62. This option addresses the need to align New Zealand's regulatory system to the following ICAO alignment requirements.

- **Design requirements:** The most significant amendment for certificated aerodromes is the addition of annexes B to H in the proposed Rule amendment¹⁹. These will align the New Zealand Rule with ICAO Standards. The standards have been transferred from the existing Advisory Circular to the proposed Rule amendment.
- **Fire-fighting:** Fire-fighting categories will be updated to clarify requirements for extinguishing agents, personnel, response capability and communications and alerting.
- **Movement data reporting:** A requirement will be added to collect traffic movement data monthly and report on a quarterly basis to the Director.
- **Aerodrome Maintenance:** A requirement will be added for the measurement and reporting of real time surface condition using standardised reporting methods when a runway is contaminated.
- **Emergency management:** Requirements will be added for modular tests of the emergency plan in specified timeframes, in addition to existing requirements for full scale exercises already required in the current Rule.
- **Aeronautical Study:** An additional requirement for aerodrome operators to conduct an aeronautical study prior to significant change (e.g. traffic volumes, type of operation, physical characteristics of the aerodrome, increase in incidents) and provide the Director with the results of this study.

Benefits

63. At international aerodromes and those serving large air transport operations, standards will be consistent with other similar sized aerodromes worldwide. This will protect New Zealand's reputation as a safe country to visit. Misalignment with these standards can result in increased safety risk to the flying public, loss of commercial opportunity if air operators choose not to fly into our aerodromes, and wider economic impact due to our reliance on international air transport for travel and international trade.

¹⁹ Annexes B to H cover: Aerodrome Reference Codes, (Aerodrome) Physical Characteristics, Obstacle Restriction and Removal, Visual Aids for Navigation, Visual Aids for Denoting Obstacles, Visual Aids for Denoting Restricted Uses Areas, (Aerodrome) Electrical Systems.

Costs

Government costs

64. The net impact of the changes for the government will be minimal. The CAA already audits the existing certificated aerodrome operators and recovers its costs. CAA auditors are already familiar with the new requirements and require minimal training.

Industry costs

65. In 2014, 16 of the 27 certificated aerodromes were re-certificated. During this process, CAA auditors checked aerodrome design and procedures against the aerodrome advisory circulars, which already contain all of the ICAO Standards. The majority were assessed to comply with the advisory circulars (and therefore ICAO Standards) with the exception of requirements to illuminate certain runway signs at night.
66. The CAA anticipates that the remaining 11 certificated aerodromes are in a similar position, and are largely compliant with proposed additional ICAO requirements relating to runway friction levels, fire-fighting and emergency planning. Upgrade costs for illuminated signs vary depending on the size and nature of the aerodrome, but could range up to \$50,000 for those certificated aerodrome operators who have not already completed these upgrades.
67. To ensure that certificated aerodromes have time to plan and complete any capital upgrades required to comply with these standards, the proposed rule includes a three-year transitional period for compliance with the new standards.

Conclusions and recommendations

68. To address the key problems in the current regulation of New Zealand's aerodromes, Part 139 amendment 10 includes two changes
- **For non-certificated aerodromes:** Implement a new risk-based regulatory approach that the Director can use to assess and address risk on a case-by-case basis. Mandatory aircraft movement reporting will support this process.
 - **For certificated aerodromes:** Align standards for certificated aerodromes with ICAO requirements.
69. The preferred options to update Part 139 present the best improvements on the status quo to reduce safety risks associated with aerodrome operations, and thereby improve safety outcomes for the travelling public. They will also enhance New Zealand's international reputation.

Consultation

70. This final proposed draft rule has taken over five years to develop. The CAA has prepared and consulted on two versions of a draft rule with aerodromes and relevant sectors of the aviation industry.
71. The final draft rule proposal discussed in this RIS reflects the significant feedback received during the consultation.

72. Stakeholders, most notably the affected aerodromes, supported the need to maintain alignment with ICAO Standards for international aerodromes and those supporting regular scheduled large passenger aircraft.
73. However, several of the original draft proposed changes remained contentious throughout the consultation period on the draft rules. Stakeholders did not support the need for minimum standards to align New Zealand's non-certificated domestic aerodromes with ICAO Standards. With limited data available supporting a safety case to extend international requirements to the domestic aerodromes, submitters indicated that the additional cost was not justified.
74. Stakeholders also rejected the idea of mandatory certification for an extended group of aerodromes. They argued that risks at each individual aerodrome are unique – and depend on a wide range of factors, including the local physical environment and weather patterns, the types of operation, the pattern of movement volumes and the interaction of all these factors with the specific design at an aerodrome.
75. The CAA accepted that an approach to certification that better targeted actual risk was the preferred approach and amended the final draft rule to reflect stakeholder feedback. The risk-based approach to certification has received positive feedback from stakeholders contacted as part of the drafting of the final version of the rule.
76. To check that the revised approach is in line with industry expectations, the CAA provided the New Zealand Airports Association (the Association) with two opportunities to review the final draft of the rule, and provided a briefing to Association members at their annual meeting in March 2015. The Association indicated support for the proposed final rule.
77. The Association expressed concern about the requirement that the aerodrome operator should have to pay for the cost of the aeronautical study when required by the Director. However, this reflects existing CAA funding policy, approved by Cabinet. It is based on the principle that aerodrome operators are an immediate beneficiary of aviation activities at the aerodrome²⁰.
78. The Association also expressed concern that the requirement to conduct an aeronautical study should not make the aerodrome operator generally responsible for assessing the risks associated with airspace around the aerodrome that they are unable to control. The rule has been adjusted to ensure that the risk mitigation measures arising from the aeronautical studies are linked to changes that the Aerodrome has control over.
79. The CAA also briefed the Aviation Community Advisory Group (ACAG)²¹ and provided it with a copy for review.
80. ACAG indicated general support for the changed approach to the rule.

²⁰ This principle is also reflected in the Charges Regulations (No 2) 1991, Schedule Part 9 (13)(g), which already provides for aeronautical studies and safety reviews by the CAA to be a chargeable activity.

²¹ ACAG is the industry body set up to advise the CAA on policy and regulatory matters. It includes representatives from all the major sectors of the industry, including air transport operators (large and small), private operators, Airways New Zealand, engineers and the New Zealand Airports Association.

Implementation

Transition

81. The proposed new risk based process for certification of aerodromes will come into force on 1 August 2015.
82. A three-year transition period will be implemented to enable transition for certificated operators to comply with the proposed new standards. These standards will come into force on 1 August 2018.

Industry notification, guidance and information

83. The CAA will notify the aerodrome industry when the Rule is made. The new rule will be available on the CAA website. The CAA will update the relevant advisory circulars. It will also ensure that aerodrome operators are aware of the potential safety risks and changes to aerodrome procedures that may lead to an aeronautical study or intervention by the Director. The advisory circulars will provide information on how operators can comply with the new reporting requirements.

CAA training and procedures

84. The proposed changes, especially around risk-based assessment of aerodromes, will require modification to the way the CAA approaches the enforcement of aerodrome regulation. Revised procedures are under development. The approaches are consistent with those the CAA sets out in its existing Regulatory Operating Model. The Regulatory Operating Model is set out in a document available on the CAA's website.

Offences and penalties

85. The proposed amendments to Part 139 require amendments to Schedule 1 of the Civil Aviation (Offences) Regulations 2006. These establish two new offences provisions and amend a number of existing offences to revise wording or to re-number (penalties are unchanged). These changes will require Cabinet approval.

Consequential amendments

86. Data tables in Rule Parts 135, 125 and 121 will be aligned with Rule Part 139. These changes are styling only and have no substantive effect.

Monitoring, Evaluation and Review

87. The proposed risk based certification process is a novel approach to certification and therefore is relatively untested. The CAA will collect data on aircraft movements, as well as data to implement the risk-based approach. The CAA will use this data to assess the effectiveness of the Rule, and in particular, the new risk based certification process.

Annex 1: Options considered to address problems with managing safety at New Zealand's aerodromes

Problem One: Non-certificated aerodromes: Gaps in safety oversight.				
Criteria	Reduces safety risk at New Zealand's aerodromes	Enhances New Zealand's international reputation	Minimises compliance and government administration costs	Addresses risk where it is most needed
Status Quo: CAA continues to work with non-certificated aerodromes to encourage voluntary safety management	This option does not allow the Director to ensure the safety of an aerodrome at which he/she had a safety concern. Therefore, this option would not actually lower the risk; it would manage it at its current level.	While New Zealand's non-certificated aerodromes are all domestic aerodromes and therefore not subject to international norms, the current gap in safety oversight may affect New Zealand's international reputation.	There will be no change to compliance or administration costs.	The status quo is not effective in circumstances where the CAA (or other person) has identified a significant safety risk that cannot be resolved through working with a willing operator. In these circumstances, the Director has no mechanisms (including through the Civil Aviation Act) to resolve the safety risk.
Education campaign: Encourage operators to assess and mitigate potential risks associated with design and management limitations	As above.	As above.	There will be no change to compliance or administration costs.	An education campaign could be targeted at the higher risk operators.
Set minimum standards for non-certificated aerodromes: to align with basic ICAO requirements	While setting minimum standards across all non-certificated aerodromes could improve safety, in the absence of good data, it is not clear what standards would actually achieve this. The imposition of minimum standards could lead some aerodromes to withdraw from the NZ Aeronautical Information Publication (as the standards would apply to aerodromes listed in this document). This would <i>increase</i> the safety risks as it would reduce information available to pilots.	Consistency with international standards at all our domestic aerodromes serving regular passenger operations would increase our international reputation.	A CAA study of the affected aerodromes indicates that at least 36 aerodromes would not comply with ICAO Standards if they were applied. The non-compliance occurs in high cost areas such as runway width, runway strip width and obstacles.	This option would apply to all non-certificated aerodromes regardless of the risk they actually pose.
Extend certification requirements: for certain types of operations – ie those serving medium size air transport operations or those with high traffic volumes	While requiring certification at some aerodromes may increase safety in certain circumstances, there is no evidence that this would be the case for all aerodromes. This is why this option proved extremely contentious with stakeholders over two consultation periods over more than two years.	Requiring certification for certain types of operations may improve New Zealand's reputation.	The cost of certification may be significant for some operators given the certification process requires compliance with ICAO standards. At least 36 non-certificated aerodromes could require significant upgrades (including changes to runway widths, strip widths and obstacle clearances).	This option would capture a wider range of aerodromes in New Zealand, with the requirements focused on higher risk areas (such as aerodromes serving mid-size passenger carrying operations and high volume movement aerodromes). However it is still a relatively crude approach to ensuring that risks are addressed where they are most needed.
Risk based regulatory approach: Director has the ability to target interventions at the highest risk aerodromes, supported by mandatory movement reporting PREFERRED APPROACH	This approach allows the Director to target actual safety risk and set controls accordingly using an aeronautical study and, if required, a qualifying aerodrome operating certificate. This can also be targeted at the actual risk posed by the aerodrome. In this way, safety will be improved at non-certificated aerodromes.	This option would improve New Zealand's international reputation as it addresses all aerodromes.	This option will result in increased cost to those parts of the industry that present the highest risk. However, the cost of any regulation should be proportional to the risk. The cost of the safety benefit should therefore be justified. Key stakeholders support this option.	This approach would, by design, be aimed at the higher risk aerodromes and enable targeted intervention.

Problem two: ICAO compliance at certificated aerodromes				
Criteria	Reduces safety risk at New Zealand's aerodromes	Enhances New Zealand's international reputation	Minimises compliance and government administration costs	Addresses risk where it is most needed
Status quo: ICAO Standards and Recommended Practices are maintained in advisory circulars	Most certificated aerodromes are largely compliant with ICAO Standards and Recommended Practices; however there are a few gaps (such as aerodrome signage lighting).	This option will not improve New Zealand's Reputation. ICAO is due to conduct its next audit in 2016. Failure to demonstrate that the New Zealand has addressed previous ICAO is likely to result in a lower safety rating for New Zealand.	A guidance-based approach for the standards that apply to certificated aerodromes provides greater flexibility for operators.	Advisory circulars appear to be largely effective in encouraging certificated operators to apply best practice.
Introduce Standards into the Rule: to align Part 139 with ICAO Standards and Recommended Practices PREFERRED APPROACH	ICAO Standards are considered international best practice and have been devised by a wide range of technical experts. More consistent application should therefore improve safety overall.	This option would increase our international reputation.	While a standards-based approach may result in additional costs in some areas (notably signage lighting), it is not expected to be significant as most certificated aerodromes are already largely compliant. The Airports Association supports consultation on the proposed introduction of ICAO Standards. Clear and unambiguous standards that demonstrate international compliance is critical to the commercial success of these aerodromes.	ICAO Standards will apply to the highest risk aerodromes – those servicing regular international operators and large 30+ seat domestic air transport operators. These are higher risk because of the consequences of any accident or incident for both people and New Zealand's international reputation.