

# Regulatory Impact Statement

## ICAO Alignment Project 2017

### Agency Disclosure Statement

This Regulatory Impact Statement (RIS) has been prepared by the Civil Aviation Authority (CAA) and the Ministry of Transport.

The New Zealand Civil Aviation Act 1990 (the Act) establishes the key safety obligations for participating in New Zealand's civil aviation system, including for persons, aircraft and flight. These are underpinned by the Civil Aviation Rules (CARs), which set additional, more detailed requirements.

A suite of amendments to the CARs are proposed that are intended to address findings raised following the 2006 International Civil Aviation Organization (ICAO) audit, as well as safety risks and regulatory burdens. The proposals are packaged together as the individual issues do not warrant individual rule projects.

These proposals address technical matters, rather than significant policy issues. Operators already largely conform with the proposed changes. Consequently, the analysis included in this RIS is limited to describing the policy problems, options and recommended solutions, rather than providing a comprehensive cost-benefit analysis.

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Date:

## Executive Summary

This RIS proposes a number of amendments to the CARs to align New Zealand with the Standards and Recommended Practices (SARPs) contained in the annexes to the Convention on International Civil Aviation 1944 (the Convention). Problem statements specific to each of the individual issues are provided throughout the discussion.

The set of proposals presented here will amend a number of CARs.

1. A requirement for operators to establish aerodrome operating minima for each aerodrome to be used in operations (CAR Part 121);
2. A requirement for New Zealand registered aircraft engaged in international commercial operations to carry a document attesting noise certification (CAR Part 91);
3. A requirement for the pilot-in-command to inform the appropriate air traffic services and relevant authorities of what dangerous goods are on the aircraft to assist the emergency services in their response (CAR Part 92);
4. Update specifications for aircraft black boxes (FDRs and CVRs) (CAR Parts 121 and 125);
5. A requirement for single pilot operations under IFR or at night to have means of displaying charts in all ambient light conditions (CAR Part 125); and
6. A requirement for all aeroplanes operated at night to be equipped with two landing lights (CAR Parts 121 and 125).

The primary objective of these proposals is to update the CARs so that they better align with ICAO SARPs, without compromising aviation safety, and with minimal cost to the aviation industry, the travelling public, and government. This will address the findings from the 2006 ICAO audit, and avoid the implications for New Zealand registered operators and visiting foreign registered aircraft of non-alignment between the CARs and the ICAO SARPs.

For each of the issues, the possible alternatives to a rule change are similar: retaining the status quo, or filing a difference with ICAO. In all cases, a rule change is assessed as best meeting the objectives and providing government with an efficient means of addressing a number of issues in a single package.

As part of the standard rule-making process, a comprehensive Notice of Proposed Rule Making (NPRM) would provide the opportunity to consult with industry and other affected stakeholders. Given the nature of the issues, the impacts on industry are expected to be neutral or positive.

Proposed CAR changes that are ultimately implemented will be supplemented by relevant guidance material and other information to support industry implementation and compliance.

## Introduction

1. Traditionally, there have been two categories of Civil Aviation Rule (CAR) changes: Omnibus, for minor editorial changes; and standard rule changes for all others. In 2016, a third category was developed, Small Issues. These projects combine a suite of distinct rule changes that do

not meet the criteria for an Omnibus rule<sup>1</sup> and would not, on their own, warrant the more resource-intensive standard rule change process. Individually these changes are not likely to meet cost-benefit or significance thresholds to be prioritised for rule development, so they have been packaged together as a cost effective way of addressing the individual issues. This RIS relates to six areas of non-alignment with the Annexes to the Convention. The characteristics of this suite of proposed changes are similar to a Small Issues project.

2. This Regulatory Impact Statement (RIS) provides the policy rationale for the rule amendments proposed in preparation for the ICAO audit in December 2016. The six proposals are:
  - A. A requirement for operators to establish aerodrome operating minima for each aerodrome to be used in operations (CAR Part 121);
  - B. A requirement for New Zealand registered aircraft engaged in international commercial operations to carry a document attesting noise certification (CAR Part 91);
  - C. A requirement for the pilot-in-command to inform the appropriate air traffic services and relevant authorities of what dangerous goods are on the aircraft to assist the emergency services in their response (CAR Part 92);
  - D. Update specifications for aircraft black boxes (FDRs and CVRs) (CAR Parts 121 and 125);
  - E. A requirement for single pilot operations under IFR or at night to have means of displaying charts in all ambient light conditions (CAR Part 125); and
  - F. A requirement for all aeroplanes operated at night to be equipped with two landing lights (CAR Parts 121 and 125).

## **International obligations**

3. ICAO Member States, including New Zealand, are expected to follow standards and recommended practices (SARPs) to the extent practicable, but are not required to do so where it would be unreasonable or impractical. Where alignment with SARPs is not possible, states may file differences with ICAO, indicating whether their aviation regulations align with individual SARPs partly or not at all, or whether the state uses an alternative standard that achieves the same or a similar outcome as the SARP.
4. To monitor member states' compliance with the SARPs, ICAO has adopted a Continuous Monitoring Approach (CMA) process and undertakes on-site audits as part of the Universal Safety Oversight Audit Programme (USOAP). The CMA process requires states to notify their compliance status with ICAO, which the ICAO Secretariat reviews regularly. This is supplemented by on-site audits where ICAO inspectors visit member states to evaluate their compliance with the SARPs. New Zealand's next on-site audit is scheduled for December 2016.
5. ICAO's USOAP audit measures a state's effective implementation (EI) of the eight critical elements (CEs) of an aviation safety oversight system.<sup>2</sup>

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<sup>1</sup> Omnibus criteria are: minor or insignificant policy change; minor technical matters or updates; no significant compliance cost or safety risks result; not controversial; little or no regulatory impact; grammatical or editorial changes of an insignificant nature.

<sup>2</sup> The eight critical elements are: 1: Primary aviation legislation, 2: Specific operating regulations, 3: State civil aviation system and safety oversight functions, 4: Technical personnel qualification and training 5: Technical guidance, tools and provision of safety-critical information, 6: Licensing, certification, authorisation and approval obligations, 7: Surveillance obligations, 8: Resolution of safety concerns.

6. New Zealand was last audited in March 2006 and achieved an overall EI score of 83.72% (the OECD average was 83.03%). Sixty-one findings were made against New Zealand and its implementation of ICAO's eight CEs. Findings were often due to discrepancies between New Zealand's aviation rules and regulations and the SARPs.
7. Areas of non-conformity with ICAO SARPs are likely to result in findings during the upcoming audit. Cumulatively, findings will have an impact on New Zealand's ICAO ranking, and have further consequences for the New Zealand aviation sector.
8. Maintaining a good rating is important to New Zealand for a number of reasons:
  - It provides assurance to other states that New Zealand gives full effect to its ICAO obligations and maintains an internationally acceptable level of regulatory oversight;
  - It encourages other states to enter into bilateral arrangements with New Zealand;
  - It facilitates the movement of New Zealand aviation products and personnel; and
  - It enables New Zealand to enter into air services agreements conferring traffic rights, all of which require compliance with ICAO SARPs.
9. Preparations for the December 2016 USOAP audit suggests New Zealand could achieve a theoretical overall EI score of 90% or better. However, this is partly dependent on ICAO being satisfied that outstanding findings from 2006 have been adequately addressed.
10. If New Zealand fails to maintain its ranking, New Zealand's international operators, trade in aviation products and qualified aviation personnel may be negatively impacted. The economic consequences could include: a negative impact on imports and exports; job losses where businesses are negatively impacted; or reduced tourism to, from and within New Zealand.

## **New Zealand regulatory environment**

11. The Civil Aviation Act 1990 sets overarching requirements for participation in the aviation system. The Act requires that rules made by the Minister of Transport are not inconsistent with the Convention. In addition, section 14 of the Act provides that an objective of the Minister is to ensure that New Zealand's obligations under international civil aviation agreements are met. The proposals in this RIS aim to achieve this.

## Summary Problem Statement

12. There are two problems to be addressed by the proposals covered by this RIS:

- gaps between the SARPs and the CARs which might lead to findings against New Zealand in the upcoming ICAO audit; and
- costs associated with a lack of alignment between the SARPs and the CARs.

### *ICAO audit findings against New Zealand*

13. The first problem relates to the upcoming ICAO audit. Gaps between New Zealand law and the SARPs may lead to findings against New Zealand. Cumulatively, a number of findings have the potential to undermine New Zealand's ICAO rating.

14. The issues assessed in this project were raised as findings after the 2006 ICAO Universal Safety Oversight Audit Programme (USOAP) audit of New Zealand. New Zealand submitted a Corrective Action Plan to address the findings from the audit. The six issues described in this RIS remain open due to questions raised during the *Better Regulation, Less Regulation* review of regulatory effectiveness and the subsequent reduction in the number of aviation project proposals to be included in the Transport Rules Programme.

### *Cost of non-alignment*

15. The second problem relates to costs associated with non-alignment. Inconsistency between New Zealand law and practice and international aviation standards may create uncertainty for other states, operators, and the users of international air transport services. Uncertainty may cause parties to lose confidence in New Zealand's regulatory system, and may inhibit the efficient facilitation of imports and exports, and the travelling public.

16. Continuing non-alignment with long-standing requirements in the ICAO SARPs may undermine New Zealand's credibility as an ICAO member state.

17. Problem statements specific to each of the six issues in this RIS are provided in the respective sections below.

## Objectives

18. The overall objective of the proposals presented here is to update the CARs so that they better align with ICAO SARPs, without compromising aviation safety, and with minimal cost to the aviation industry, the travelling public, and government. This will:

- respond to the findings from the 2006 ICAO audit, and
- minimise costs associated with non-alignment between the CARs and the ICAO SARPs for New Zealand registered operators and visiting foreign registered aircraft.

## Options Identification

19. The same options are available for resolving each of the issues covered by this RIS.

- **Status quo:** Ongoing non-conformity with the SARPs without reasonable justification is likely to result in findings during the upcoming 2016 audit. This could affect New Zealand's ICAO ranking and have further consequences for the New Zealand aviation sector. For most of the issues discussed here, New Zealand has filed a difference with ICAO in the category 'less protective, or partially implemented, or not implemented'. This category of difference is the least compliant option available to states.
- **Rule amendments (recommended option):** For each area of non-alignment, the Civil Aviation Authority (CAA) and the Ministry of Transport recommend a rule amendment to best meet the stated objectives. The Rule amendments proposed in this RIS would address long-standing gaps between New Zealand law and the ICAO SARPs, and contribute to improving New Zealand's ICAO rating and international aviation reputation.
- **Filing a difference in a new category:** Where New Zealand operators do, in practice, conform with the SARPs, New Zealand may be able to file a difference with ICAO, advising that its compliance with the Standard is 'different in character or met by an alternative means of compliance'. This category of difference may be used where domestic regulation and practices are different to the SARP, but achieve the same objective as the SARP. Unlike a difference in the 'less protective or partially implemented or not implemented' category, a difference in this category is unlikely to result in a finding.

In order to file a difference in this category, the CAA would also need to confirm that its own auditing and certification systems give effect to the intent of all relevant SARPs. This is likely to be a time consuming exercise and may require considerable resources. It may also fail to alleviate concerns around New Zealand's commitment to ICAO, particularly because it does not align with the response New Zealand provided following the audit finding.

20. Where rule changes are made, these would be supplemented by guidance where appropriate, as well as any education, information, and training required for effective implementation.

## Proposed Options Analysis

### A. Establishment of aerodrome operating minima

#### Status quo

21. Following the 2006 audit, ICAO issued a finding in relation to the lack of a requirement in the CARs for air operators to establish operating minima for each aerodrome to be used in operations.<sup>3</sup> ICAO recommended that the CAA amend the CARs to reflect the requirements, and that the CAA approve the methods that may be used by air operators to determine the aerodrome operating minima.
22. Annex 6, Part I, 4.2.8.1 provides as follows:  
*“The state of the Operator shall require that the operator establish aerodrome operating minima for each aerodrome to be used in operations and shall approve the method of determination of such minima. Such minima shall not be lower than any that may be established for such aerodromes by the state in which the aerodrome is located, except when specifically approved by that state.”*
23. Annex 6, Part I, 4.2.8.2 goes on to list a number of matters that should be taken into account by air operators when establishing aerodrome operating minima.
24. The CAA discussed the issue at a 2008 meeting with stakeholders. Those present acknowledged that the process required by ICAO Annex 6 is generally being followed by operators. It is standard practice for airlines operating internationally to determine aerodrome operating minima for each aerodrome as part of their expositions. This ensures that the airlines are able to continue operating internationally, as an operator’s compliance with ICAO SARPs is generally a prerequisite to continued operations in the territory of another state.

#### Problem statement

25. Due to the lack of a regulatory requirement for operators to establish aerodrome operating minima, the CAA anticipates that ICAO is likely to issue another finding. Cumulatively, a number of findings could undermine New Zealand’s ICAO rating and have further consequences for the New Zealand aviation sector.

#### Recommendation

26. It is recommended that CAR Parts 121 and 125 are amended to require air operators engaged in international air transport operations to establish aerodrome operating minima for each aerodrome in their expositions. This will address the finding raised during the last audit, avoid the consequences of a negative audit finding, and formalise existing practice. Due to widespread compliance by airlines, a CAR amendment is not associated with notable additional compliance costs.<sup>4</sup>

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<sup>3</sup> Aerodrome operating minima are the limits of usability of an aerodrome in relation to take-off, approach and landing

<sup>4</sup> Three of the five affected operators, Air New Zealand, Jetconnect and Skyline Aviation, have all confirmed that they comply with this provision.

## **B. Noise certification document**

### **Status quo**

27. The CARs require foreign registered aircraft entering New Zealand to carry:
- a current certificate of registration for the aircraft, or a certified copy of the certificate of registration; and
  - written evidence that the aircraft complies with the requirements of CAR 91.803(a)(2) regarding aircraft noise level compliance, and CAR 91.807(2) regarding engine emission compliance (CAR Part 91.111(5)).
28. There is no requirement in the CARs for New Zealand registered aircraft leaving New Zealand for international destinations to carry these documents. The gap means that New Zealand is inconsistent with ICAO SARPs.
29. New Zealand has filed a difference with ICAO in the category of 'less protective or partially implemented or not implemented' – the lowest form of SARP compliance – in relation to this finding for both fixed-wing and helicopter aircraft.
30. To comply with other states' entry and operational requirements, aircraft of New Zealand registered operators such as Air New Zealand and Jetconnect must carry documentation attesting noise certification. These operators are complying with the ICAO SARPs in accordance with other states' requirements, rather than because of a requirement by New Zealand regulation as the State of Registry.

### **Problem statement**

31. New Zealand is relying on the requirements of other states to meet ICAO SARPs. This could lead to inconsistencies amongst New Zealand operators simply because of what state they are flying to.
32. Further, the CARs are inconsistent with ICAO Annex 6 SARPs. They do not require New Zealand registered aircraft engaged in international commercial operations to carry a document attesting noise certification (Standard 6.13).
33. If this gap is not addressed, it could result in another finding during any future ICAO audit. Each finding has an impact on New Zealand's ICAO effective implementation (EI) score, which has flow-on consequences for the New Zealand aviation system.

### **Recommendation**

34. It is recommended that the CARs be amended to require New Zealand registered aircraft engaged in international commercial operations to carry a document attesting noise certification in accordance with ICAO Annex 6, Standard 6.13. This will address the 2006 audit finding, and align New Zealand with international standards and the regulatory practice of other comparable jurisdictions.

35. The impost of a CAR requirement on affected operators (8) would be minimal. Fewer than 80 New Zealand registered fixed-wing and helicopter operators have aircraft that are certificated to engage in international operations. Most are likely to already be voluntarily complying with ICAO noise certification requirements in order to operate their aircraft in other states' jurisdictions. Therefore, the type certificate and associated data for aircraft examined by the CAA should mean few aircraft if any, would not be able to meet a new CAR requirement.

## **C. Provision of information: carriage of dangerous goods**

### **Status quo**

36. Dangerous goods are safely carried by air on a regular basis. Common dangerous goods include lithium ion batteries (including faulty units), radioactive material, aerosol cans, petrol and gas. Since 2010, the CAA has received notification of 33 major or critical incidents involving dangerous goods (declared and not) being carried on flights.
37. ICAO Annex 18<sup>5</sup> requires the pilot-in-command to inform the appropriate air traffic services and relevant authorities of what is on the aircraft to assist the emergency services in their response to an incident. ICAO Annex 6<sup>6</sup> specifies the information and instructions that must be provided in the aircraft's operations manual regarding the carriage of dangerous goods, in accordance with Chapter 14 Dangerous Goods. This includes a description of the action to be taken in the event of an emergency, including how to convey information to emergency services and to appropriate authorities in the event of an incident or accident in relation to an aircraft carrying dangerous goods.
38. Civil Aviation Rule (CAR) Part 92.175 requires an operator of an aircraft carrying dangerous goods to provide the pilot-in-command with written information detailing those goods before departure. The operator must also ensure that it is readily available to the pilot-in-command before and during the flight; and presented on a dedicated form. It must detail information for use in emergency response to accidents and incidents involving the dangerous goods being carried.
39. The CARs do not require provision of that information to the "relevant authorities or agencies," such as air traffic services or other authorities in the event of an incident or accident involving aircraft carrying dangerous goods.
40. A key element of an effective safety management system (SMS) as required under Part 100 is "*Coordinated Emergency Response Planning*" (ERP). These are procedures for the orderly and efficient transition between normal and emergency operations; delegation of emergency authority; and assignment of emergency responsibilities. An ERP will reflect the scale of the operation; develop and define the procedures, roles, responsibilities and actions of the various organisations and key personnel during an emergency. CAA is unlikely to approve an SMS not containing an ERP.

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<sup>5</sup> Annex 18 deals with the "Safe Transport of Dangerous Goods by Air".

<sup>6</sup> Annex 6 deals with the operation of aircraft engaged in international commercial air transport

## **Problem statement**

41. The regulatory expectation is not clear around the provision of dangerous goods information if an inflight emergency were to occur. The CARs do not align with ICAO SARPs regarding the provision of information to emergency services and appropriate authorities in the event of an incident or accident involving aircraft carrying dangerous goods.
42. The status quo effectively leaves it to the pilot-in-command's discretion or memory to provide air traffic services and relevant authorities with information of any dangerous goods on-board in the event of an incident or accident.
43. This creates a high consequence safety risk if an operator or pilot-in-command fails to provide the appropriate information to emergency services and appropriate authorities in the event of an incident or accident involving aircraft carrying dangerous goods. Emergency services could be unaware of the nature and location of the dangerous goods on an aircraft, limiting the effectiveness of their response.

## **Recommendation**

44. It is recommended that CAR Part 92 is amended to address a minor, but outstanding ICAO compliance issue and to minimise safety risks.
45. The overall impost to operators would be minimal. The CARs already require operators to have a dangerous goods training programme in place. This includes safety training, which covers the hazards presented by dangerous goods, their safe handling and emergency response procedures.
46. A CAR amendment to require the provision of information to the relevant authorities or agencies in an emergency would be a minor extension of current requirements. For most, this would be formalising current practice, contained in their CAA-approved SMS or other emergency planning. Compliance would be monitored through existing auditing processes and through existing training programme requirements.

## **D. Flight Data Recorder (FDR) / Cockpit Voice Recorder (CVR) specifications**

### **Status quo**

47. Following the 2006 audit of New Zealand, ICAO issued a finding on the basis that the CARs did not contain all of the Annex 6 SARPs for operations-derived equipment<sup>7</sup> to be installed where the equipment was not part of the type certification<sup>8</sup> of the aircraft or helicopter. ICAO recommended that the Minister of Transport introduce requirements for operations-derived equipment on aircraft.

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<sup>7</sup> Operations-derived equipment is equipment that is not part of the type certification.

<sup>8</sup> A type certificate is issued by a regulatory authority and confirms that the aircraft is manufactured according to an approved design, and that the design ensures compliance with airworthiness requirements.

48. There are several requirements for operations-derived equipment in Annex 6 that are not reflected in the CARs. This includes requirements relating to Flight Data Recorders (FDRs) and Cockpit Voice Recorders (CVRs), commonly referred to as 'black boxes'.
49. FDRs record the flight parameters from aircraft sensors. The data collected includes flight path, altitude, speed, and the positioning of some lift and drag devices on the aircraft, such as wing flaps. CVRs record the conversations and noises in the cockpit. Together, these devices provide invaluable information for accident and incident investigators and are required equipment on certain classes of aircraft.

#### **Application of Annex 6, Part I to New Zealand aircraft**

50. Annex 6 Part I sets out various requirements in relation to CVRs and FDRs. Many of these are reflected in the CARs. Several specific requirements are not currently included in the CARs and are outlined in more detail below.
51. Annex 6 Part I applies to aeroplanes engaged in international air transport operations. The New Zealand requirements for FDRs and CVRs on aeroplanes engaged in international air transport operations are contained in CAR Parts 121 and 125.
52. CAR Part 135 applies to smaller aeroplanes. The CAA's Flight Operations team have confirmed that no CAR Part 135 aeroplanes are authorised to conduct scheduled and non-scheduled international air transport operations. This is unlikely to change in the future due to New Zealand's location and approach to New Zealand registered aircraft operating internationally.
53. New Zealand operators with approval for international air transport operations

<b>Operator Type and Name</b>		<b>International Capable Aircraft</b>
<b>Part 121</b>	Air New Zealand Ltd	55
	Jetconnect Limited	8
	Airwork Flight Operations Ltd	8
<b>Part 125</b>	Skyline Aviation Ltd	2
	Pacific Jets Ltd	1

#### **Application of Annex 6, Part II and Part III to New Zealand aircraft**

54. Annex 6, Part II applies to aeroplanes involved in international general aviation operations. A general aviation activity is defined for the purpose of Annex 6, as involving an aeroplane operation other than a commercial air transport operation but does not include aerial work. Annex 6, Part III applies to all helicopters engaged in international commercial air transport operations or in international general aviation operations (except aerial work).
55. Due to New Zealand's isolated location and our approach to aircraft operating in other jurisdictions, there are no New Zealand-registered helicopters or general aviation operators undertaking international air transport operations. This is unlikely to change in the future.

Compliance with Parts II and III will not be considered further. The lack of relevant aircraft should be clearly noted in New Zealand's response to the audit questions to avoid a further finding in relation to this standard.

### **FDRs to be capable of retaining information for at least 25 hours**

56. Annex 6, Part I, Standard 6.3.1.4 provides as follows:

#### *Duration*

*All FDRs shall be capable of retaining the information recorded during at least the last 25 hours of their operation, except for the Type IIA FDR<sup>9</sup> which shall be capable of retaining the information recorded during at least the last 30 minutes of its operation.*

57. CAR 121 Appendix B.6 (3) requires FDRs to be capable of storing at least 25 hours of data and is, therefore, compliant with the Convention. CAR 125 Appendix B.4 (3) requires only that FDRs be capable of storing information for eight hours, and is thus not compliant with the Convention. Jetconnect, Air New Zealand, Airwork and Skyline Aviation have confirmed that their aircraft conducting international air transport operations are capable of storing at least 25 hours of data in compliance with the SARP.

### **Magnetic tape and wire CVRs to be discontinued**

58. Standard 6.3.2.2 provides as follows:

#### *Discontinuation*

*The use of magnetic tape and wire CVRs shall be discontinued by 1 January 2016.*

59. In the past, FDRs and CVRs used magnetic tape as a storage medium. Modern FDRs and CVRs use digital technology and memory chips to store information. The new technology increases recording capacity, improves fire and impact resistance, and is more reliable

60. Currently the CARs enable the continued use of magnetic tape CVRs due to the incorporation by reference of the Technical Standard Order (TSO) C84 series in CAR Part 121, Appendix B.5 (1) and CAR Part 125 Appendix B.3 (1). TSO 84 was introduced in the 1960s and is now out of date.

61. The 1 January 2016 deadline has since passed. Internationally, the expectation will be that aircraft undertaking international air transport operations will no longer be fitted with a magnetic tape or wire CVR. Information provided by Jetconnect, Air New Zealand and Skyline Aviation indicates that their aircraft conducting international air transport operations comply with the requirement. Airwork has advised that all its aircraft except one complies. This aircraft is certified for international operations and will be expected to comply with Standard 6.3.2.2.

### **CVRs to be capable of retaining information recorded for previous two hours**

62. Standard 6.3.2.3.2 provides:

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<sup>9</sup> A Type IIA FDR records the parameters required to determine the aircraft's flight path, speed, attitude, engine power, and configuration of lift and drag devices.

*From 1 January 2016, all CVRs shall be capable of retaining the information recorded during at least the last two hours of their operation.<sup>10</sup>*

63. CAR Part 121 Appendix B.5 (3) and CAR Part 125 Appendix B.3 (1) reflect the previous standard, which required all CVRs to be capable of recording information for at least the last 30 minutes of operation.
64. Jetconnect, Air New Zealand and Skyline have confirmed that their aircraft conducting international air transport operations comply with this requirement. Airwork has advised that it has aircraft engaged in international operations that have CVRs only capable of recording the last 30 minutes. While these aircraft have a maximum certificated take-off mass of over 5 700 kg, the first certificate of airworthiness was issued prior to 1 January 2003, and Standard 6.3.2.3.2 does not apply.

#### **Provision of an alternate power source**

65. Standard 6.3.2.4.2 provides:

*All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2018 shall be provided with an alternate power source, as defined in 6.3.2.4.1<sup>11</sup> that powers the forward CVR in the case of combination recorders.*

66. As this requirement does not enter into force until 1 January 2018, it is less likely to result in a finding than the other outstanding requirements. Nevertheless, the upcoming ICAO omnibus rule provides an opportunity to align New Zealand law with the latest version of the SARPs. The cost implications associated with this requirement will be minimal as the requirement only applies to aircraft submitted for type approval on or after 1 January 2018.

#### **Problem statement**

67. The CARs do not currently require CVRs and FDRs that comply with modern standards. This may result in accident investigators being less able to identify the causes and contributing factors of an accident or incident.
68. The CAA anticipates that ICAO will issue another finding after the next ICAO audit in December 2016. By not meeting the standards in SARPs, New Zealand may be perceived as putting public safety and effective accident investigation at risk by failing to require the most effective data recorders, noting that these upgraded standards have been in place for some time. Data recorders are also widely understood, high profile pieces of critical equipment which the travelling public could reasonably expect to meet modern performance and crash resistance parameters.

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<sup>10</sup> This is subject to Annex 6, Part I, Standard 6.3.2.1.3 which provides that "all aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2003 shall be equipped with a CVR capable of retaining the information recorded during at least the last two hours of its operation".

## Recommendation

69. It is recommended that CARs 121 and 125 are amended to give effect to outstanding Annex 6 Part I CVR and FDR requirements. In light of the widespread compliance by New Zealand operators, introducing a mandatory requirement should have minimal impacts on industry.

## E. Equipment for single pilot operations under IFR or at night

### Status quo

70. The ICAO audit of 2006 made a finding in relation to inconsistencies between the CARs and the requirements for operations-derived equipment in Annex 6 of the Convention.

71. Annex 6, Part I, Standard 6.22 provides as follows for all aeroplanes operated single pilot under Instrument Flight Rules (IFR) or at night by a single pilot:

*“For approval in accordance with 4.9.1,<sup>12</sup> all aeroplanes operated by a single pilot under the IFR or at night shall be equipped with:*

*a) a serviceable autopilot that has at least altitude hold and heading select modes;*

*b) a headset with a boom microphone or equivalent; and*

*c) means of displaying charts that enables them to be readable in all ambient light conditions.”*

72. Since the 2006 audit, New Zealand has filed a difference in relation to Standard 6.22 (c) in the category ‘less protective or partially implemented/not implemented’.

73. Annex 6, Part I applies to international commercial air transport operations. This includes scheduled international air services and non-scheduled international air transport operations for remuneration or hire. New Zealand registered aircraft currently engaged in international commercial air transport operations are subject to CAR Parts 121 and 125.

74. This standard is not relevant to CAR Part 121 operations which will always have more than one pilot.<sup>13</sup> The CAA confirms that no CAR Part 135 operators are authorised to conduct scheduled or non-scheduled international air transport operations. This is unlikely to change in the future due to New Zealand’s remote geographic location and the generally limited flight range of Part 135 aircraft. The requirement does not appear in Annex 6 Part II (International General Aviation) or Part III (International Operations: Helicopter).

75. Based on the application of Standard 6.22 and the limits in CAR Part 121, this SARP is only relevant to CAR Part 125. CAR Part 125 provides that all aircraft operated under IFR must have

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<sup>12</sup> Standard 4.9.1 provides that an aeroplane shall not be operated under IFR or at night by a single pilot unless approved by the state of the operator.

<sup>13</sup> CAR 91.113 and others

two pilots<sup>14</sup> except where certain operational requirements are met and the following equipment is installed:

- an autopilot with at least altitude hold and heading select modes; and
- a headset with a boom microphone.<sup>15</sup>

76. The ICAO requirement to carry a means of displaying charts that enables them to be readable in all ambient light conditions is not reflected in CAR Part 125 in relation to single pilot operations under IFR.<sup>16</sup> CAR Part 125 requires night operations to be performed under IFR (except in a limited range of circumstances).<sup>17</sup> The CARs assume that all night operations will be performed under IFR.

### **Problem statement**

77. There is no requirement in CAR Part 125 for operators to comply with Standard 6.22. While all relevant operators are voluntarily compliant with the relevant SARP, the CAA is not in a position to enforce the requirement under the current CARs. The CAA anticipates that ICAO will issue another finding after the next ICAO audit in December 2016.

### **Recommendation**

78. It is recommended that CAR Part 125 is amended to require operators of aircraft engaged in international commercial air transport operations to ensure that single pilot operations under IFR or at night, have means of displaying charts in all ambient light conditions. This is a basic requirement and given that it is met by the relevant New Zealand operators, introducing a mandatory requirement will have no impact on industry.

## **F. Two landing lights - night operations**

### **Status quo**

79. Annex 6, Part I, 6.10(c) requires that all aeroplanes operated at night be equipped with two landing lights. A note to the provision provides that aeroplanes not certificated in accordance with Annex 8, which are equipped with a single landing light will be considered to have complied with the provision. Part I of Annex 6 applies to international air transport operations.

80. New Zealand registered aircraft currently engaged in international air transport operations are subject to CAR Parts 121 and 125. CARs 121.359 and 125.359 require the holder of an air operator certificate to ensure that each of its aeroplanes operated at night are equipped with a

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<sup>14</sup> CAR 125.525(a)

<sup>15</sup> CAR 125.525(b)

<sup>16</sup> Advisory Circular 91-11 relates to a number of CARs including CAR Parts 125 and 135 and covers single pilot operations under IFR. It refers to ICAO Standard 6.22, which it advises will be required from 24 November 2005. This is not expressed as a means of compliance with the relevant CARs, but appears to be solely for information.

<sup>17</sup> CAR 125.89(a)

landing light. There is no requirement for a second landing light. However, all aircraft in New Zealand in this category have at least two landing lights.<sup>18</sup>

81. CAR Part 135 applies to smaller aeroplanes. The Flight Operations team have confirmed that no CAR Part 135 aeroplanes are authorised to conduct scheduled and non-scheduled international air transport operations. This is unlikely to change in the future due to New Zealand's location. The same is true for helicopters, for the same reason.
82. New Zealand has filed a difference in relation to Standard 6.10 in the category 'less protective, or partially implemented, or not implemented'.

### **Problem statement**

83. A lack of a requirement in the CARs for a second landing light is not itself a problem, due to widespread fitment by the relevant aircraft. However, the operators are fitting the lights on a voluntary basis as the CARs do not align with ICAO SARPs. The CAA will not be in a position to compel an operator to install a second landing light. On this basis, the CAA anticipates that ICAO will issue another finding.

### **Recommendation**

84. It is recommended that CAR Parts 121 and 125 be amended to reflect the requirement for a second landing light. The amendments would be cost neutral to industry as current practice means all operators would comply.

## **Project Consultation**

85. The CAA consulted with relevant industry participants where appropriate on the individual issues discussed here.
86. These proposed amendments will be formally consulted on following the procedure outlined in the Civil Aviation Act, including a NPRM.

## **Implementation**

### **Transition**

87. Provisions will be active from the date the rules comes into force.
88. Transitional provisions are considered unnecessary as widespread compliance with ICAO standards means there will be little impact on aviation document holders' privileges or documents.

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<sup>18</sup> Confirmed by Air New Zealand, Jetstar, Skyline Aviation and Airwork.

## **Industry notification, guidance and information**

89. The CAA will notify relevant groups in the aviation sector when the Minister signs the rule changes. The new CARs will be available on the CAA website. The CAA will update the relevant advisory circulars to ensure that affected parties are aware of the changes.

## **Training and procedures**

90. Changes proposed in these rule amendments can all be implemented using existing CAA systems. The focus will be on assessment and mitigation using risk-based frameworks. There will be some CAA staff training and education involved, which will be supported from within existing resources.

91. Education and guidance relevant to the proposed changes will also be provided to operators, primarily through updated Advisory Circulars, notifications and publications.

## **Offences and penalties**

92. No new offences or penalties are expected to be required as a result of these proposed amendments. There may be a need to amend existing offences and penalties to reflect updates. Any offences and penalties amendments are expected to be cross-references and offence descriptions only, not changes to policy or penalty amounts.

## **Consequential amendments**

93. There are no consequential amendments necessary.

## **Monitoring, evaluation and review**

94. The relatively insignificant nature of the proposed rule amendments means a comprehensive and detailed monitoring, evaluation and review plan is not necessary.

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

96. The upcoming ICAO audit is part of an ongoing programme of ICAO audits and continuous monitoring of the implementation of the SARPS in ICAO member states, including New Zealand. Future audits and ongoing continuous monitoring by ICAO will provide the CAA with an indication of the alignment of CARs to ICAO SARPs.