

Notice of Proposed Rule Making

NPRM 19-01

21 September 2018

ICAO Alignment Rule Amendments

Docket 17/CAR/2

Affected Rule Parts

Part 91

Part 121

Part 125

Part 129

Part 135

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. Close co-operation is being maintained with the Civil Aviation Safety Authority of Australia to ensure maximum harmonisation with their regulatory code.

Rules are divided into Parts and each Part contains a series of individual rules which relate to a particular aviation activity. 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 Civil Aviation 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 Director's powers under s28(5) of the Act;
 - iv. The Authority's objectives under section 72AA of the Act;
 - v. The Authority's functions and duties under section 72B of the Act; and
 - vi. 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

- 1.1 The purpose of this rule-making proposal is to make a number of amendments to the Civil Aviation Rules (the Rules) 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). As a signatory to the Convention and a member state of the International Civil Aviation Organization (ICAO), New Zealand has an obligation to consider and where appropriate, give effect to the ICAO SARPs.

2. Background to the Proposal

2.1 General Summary

- 2.1.1 The ICAO Alignment Rule project proposes a broad range of minor amendments to five Civil Aviation Rule Parts.
- 2.1.2 The objective of this ICAO Alignment Rule proposal is to update the Rules so that they better align with ICAO SARPs, without compromising aviation safety, and at minimal cost to the aviation industry, the travelling public, and government. The proposal addresses findings from the 2006 ICAO audit of New Zealand's aviation system. It also corrects inconsistencies between the Rules and the ICAO SARPs.
- 2.1.3 Editorial amendments to the Rules in question are also made for consistency with modern legislative drafting style and to clarify the intent of the Rules.

2.2 NPRM Development

- 2.2.1 The proposed amendments were based on the findings from the 2006 ICAO audit of New Zealand's aviation system and in consideration of the latest ICAO SARPS related to those findings.
- 2.2.2 Technical experts from operational groups within the CAA and the aviation industry were consulted on the issues and the proposed amendments.

2.3 Key Stakeholders

- 2.3.1 The following are identified by the Civil Aviation Authority as key stakeholders in the proposed rule amendments contained in this NPRM:
- The Civil Aviation Authority;
 - The Minister of Transport;
 - The Ministry of Transport;
 - Air operators under Parts 119 (which cover air operations carried out under Parts 121, 125 and 135) and Part 129 operators.

3. Issues Addressed during Development

3.1 Six findings of the 2006 ICAO Audit

This proposal focuses on the following six findings of the 2006 ICAO audit regarding non-alignment with the annexes to the Convention:

- a requirement for operators to establish aerodrome operating minima for each aerodrome to be used in air operations (Parts 121, 125, 129 and 135);
- a requirement for New Zealand registered aircraft engaged in international commercial operations to carry a document attesting noise certification (Part 91);
- 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 (Part 91);
- update specifications for flight data recorders (FDRs) and cockpit voice recorders (CVRs) (Parts 121 and 125);
- a requirement for single pilot operations under IFR or at night to have means of displaying charts in all ambient light conditions (Part 125); and

- a requirement for all aeroplanes operated at night to be equipped with two landing lights (Parts 121 and 125).

3.2 International obligations

- 3.2.1 ICAO member states, including New Zealand, are expected to follow 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.
- 3.2.2 To monitor member states' capacity to provide oversight, ICAO has adopted a Universal Safety Oversight Audit Programme (USOAP). Under the current Continuous Monitoring Approach (CMA), this enables States at any time to update their compliance status and, among other things, progress on corrective actions resulting from periodic on-site audits. This enables ICAO to obtain an appreciation of States' current progress, and to allocate ICAO's audit resources accordingly.
- 3.2.3 As a result of its 2006 ICAO audit, New Zealand achieved an overall effective implementation (EI) score of 83.72% (the 2006 OECD average was 83.03%). Sixty-one findings were made against New Zealand and its implementation of ICAO's eight critical elements (CEs).¹ Findings from the 2006 audit were due to discrepancies between New Zealand's legislation, rules and processes and the audit protocols, most of which are based on the SARPs.
- 3.2.4 Cumulatively, findings have an impact on New Zealand's ICAO EI score, and have further consequences for the New Zealand aviation sector.
- 3.2.5 Maintaining a good EI score 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 the ICAO SARPs.
- 3.2.6 If New Zealand fails to maintain, or improve, 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.

3.3 Establishment of aerodrome operating minima

- 3.3.1 Following the 2006 audit, ICAO issued a finding in relation to the lack of a Rule requiring international air operators to establish operating minima for each aerodrome they use in their operations.² ICAO recommended that the CAA amend the Rules to reflect the SARPs, and that the CAA approve the methods that may be used by air operators to determine the aerodrome operating minima.

- 3.3.2 ICAO 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

¹ 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.

² Aerodrome operating minima are the limits of usability of an aerodrome in relation to take-off, approach and landing

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.”

- 3.3.3 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.
- 3.3.4 In New Zealand, aerodrome operating minima are established by a holder of an instrument flight procedure service certificate under Civil Aviation Rule Part 173. Air operators do not have the expertise to establish their own aerodrome operating minima, hence the need to rely on aerodrome operating minima that are established by a Part 173 organisation, and which are published in the Aeronautical Information Publication New Zealand (AIPNZ).
- 3.3.5 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 based on the minima published in the applicable AIP 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.
- 3.3.6 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 in its next audit.
- 3.3.7 To address this irregularity, the CAA proposes that Parts 121, 125 and 135 be amended to require a certificate holder to ensure that a pilot-in-command engaged in international air operations uses aerodrome operating minima published in the applicable AIP. The applicable AIP would include aerodrome operating minima published in the AIPNZ, and those published in other states. For a foreign air transport certificate holder operating in New Zealand under Part 129, the certificate holder is to ensure that a pilot-in-command uses aerodrome operating minima published in the AIPNZ. For certain circumstances such as flight crew members having limited flight experience, extreme weather conditions, or an aircraft cannot meet PANS-OPS criteria such as climb gradients, the certificate holder may increase the aerodrome operating minima by including the increased minima in the certificate holder’s exposition. The pilot-in-command is required to comply with any requirements specified in the exposition, regarding the increased minima.
- 3.3.8 This will address the finding raised during the 2006 audit, and formalise existing practice. Due to widespread compliance by airlines, a rule amendment is not associated with notable additional compliance costs.

3.4 Noise certification document

- 3.4.1 The Rules 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 rule 91.803(a)(2) regarding aircraft noise level compliance.
- 3.4.2 There is no requirement in the Rules for New Zealand registered aircraft leaving New Zealand for international destinations to carry these documents. The gap means that New Zealand is inconsistent with the ICAO SARPs.
- 3.4.3 New Zealand has filed a difference with the 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 aircraft and helicopters.
- 3.4.4 To comply with other States’ entry and operational requirements, aircraft of New Zealand registered operators must carry documentation attesting noise certification. These operators are complying with the ICAO SARPs in accordance with other States’ requirements, rather than based on a requirement by New Zealand as the State of Registry.
- 3.4.5 The continuing lack of a requirement in the Rules would mean that New Zealand continues to be inconsistent with the ICAO SARPs. If this gap is not addressed, it could result in another finding in a future ICAO audit.
- 3.4.6 The CAA proposes a rule amendment 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. The impost of a rule requirement on affected operators (eight) would be minimal. Collectively these operators have fewer than 80 New Zealand registered aircraft 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 this proposed requirement.

3.5 Provision of information: carriage of dangerous goods

- 3.5.1 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 declared) being carried on flights.
- 3.5.2 ICAO Annex 18 requires the pilot-in-command to inform the appropriate air traffic services and relevant authorities of any dangerous goods on-board the aircraft to assist the emergency services in the event of an incident. ICAO Annex 6 specifies the information and instructions that must be provided in the aircraft's operations manual regarding the carriage of 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 during an in-flight emergency in relation to an aircraft carrying dangerous goods.
- 3.5.3 Rule 92.173 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 ensure that the information is readily available to the pilot-in-command before and during the flight, and is presented on a dedicated form. The written record must include detailed information for use in response to an in-flight emergency involving the dangerous goods being carried.
- 3.5.4 The Rules do not require provision of that information to the "relevant authorities or agencies," such as air traffic services or other authorities.
- 3.5.5 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 during an in-flight emergency. This creates a high consequence safety risk. If emergency services are unaware of the nature and location of the dangerous goods on an aircraft, they may not be able to mount an appropriate, effective response.
- 3.5.6 The CAA proposes that Part 91 be amended to address this minor, but outstanding ICAO compliance issue to minimise safety risks. The overall impost to operators would be minimal. The rules 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. Most operators will already have, or soon have, a Safety Management System (SMS) in accordance with Part 100. The CAA expects operators' SMS to include a coordinated emergency response plan to ensure emergency situations, including where dangerous goods may be present, are appropriately responded to by all necessary parties.
- 3.5.7 Draft rule 91.413A requires a pilot-in-command to inform the ATS unit regarding the carriage of dangerous goods on board the aircraft during an in-flight emergency. In an instance where a certificate holder is aware of, or might be aware of, that an in-flight emergency has occurred, the certificate holder is obliged to inform the relevant authorities of the same information. This is irrespective of whether or not the pilot-in-command has already informed the ATS unit of the information. In view of an emergency situation, the pilot-in-command's main priority is to operate an aircraft safely and immediately deal with the emergency, so may not be able to inform the ATS unit of the carriage of dangerous goods. Thus the need to also place this obligation on the certificate holder is to ensure that the information is passed onto the ATS unit. This requirement would merely be formalising current practice, contained in the operators' CAA-approved SMS

or other emergency planning. Compliance would be monitored through existing auditing processes and through existing training programmes.

3.6 Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) specifications

- 3.6.1 Following the 2006 audit of New Zealand, ICAO issued a finding on the basis that the Rules did not contain all of the Annex 6 SARPs for operations-derived equipment³ to be installed where the equipment was not part of the type certification⁴ of the aircraft or helicopter. ICAO recommended that the Minister of Transport introduce requirements for operations-derived equipment on aircraft.
- 3.6.2 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.

3.7 ICAO Annex 6 and its application to New Zealand

- 3.7.1 The requirements of ICAO Annex 6 Part I which apply to aeroplanes engaged in international air transport operations are currently reflected in Parts 121 and 125.
- 3.7.2 The requirements of ICAO Annex 6 Parts II and III which apply to international general aviation operations and non-aerial work do not apply in New Zealand as there are no operators in these categories.

3.8 FDRs to retain information recorded during last 25 hours of operation

- 3.8.1 ICAO 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 FDR⁵ which shall be capable of retaining the information recorded during at least the last 30 minutes of its operation.

- 3.8.2 Part 121 Appendix B.6 (3) requires FDRs to be capable of storing at least 25 hours of data. In this regard, the Appendix meets the '25 hour' requirement, thus complies with Standard 6.3.1.4 (the standard). However, rule 121.89 which provides for FDR requirements, is not consistent with the standard. The rule requires that all recorded data is kept until the aeroplane has been operated for at least 25 hours after each operating cycle. This is not the same as retaining recorded information during the last 25 hours of operation. In addition, the term 'data' which is used in the rule, is not synonymous with 'operation' as adopted in the standard. The CAA therefore proposes to amend the wording of rule 121.89(b)(2) to be consistent with the standard.
- 3.8.3 Although not raised in the 2006 ICAO audit, the CAA takes this opportunity to also align the wording of rule 121.89(b)(1) with the ICAO SARPs⁶, with regards to when a FDR is to be operated continuously. In this regard, the CAA proposes to replace the wording '*begins the take-off until it has completed the landing*', with '*begins to move under its own power until it has come to a complete stop at the termination of the flight*'. This would extend the coverage of information being recorded and stored in a FDR before a take-off begins. Thus, any information captured before this critical phase of flight (take-off) would better assist investigators in finding out the cause of an incident or accident, if one occurred. The CAA also proposes to amend rule 121.371 (Cockpit voice recorder) and rule 121.373 (Flight data recorder) to provide for a transition period of 12 months for affected operators who will need to re-equip aircraft.

³ Operations-derived equipment is equipment that is not part of the type certification.

⁴ 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.

⁵ 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.

⁶ Refer to ICAO Annex 6, Appendix 8, clause 2.1.

- 3.8.4 As pilots are well aware, a flight recorder shall not be switched off during flight time⁷. To preserve flight recorder records, a flight recorder shall be deactivated upon completion of flight time following an accident or incident⁸. The flight recorder shall not be reactivated before their disposition as determined in accordance with Annex 13.
- 3.8.5 Part 125 Appendix B.4 (3) requires that FDRs be capable of storing information for eight hours only; thus is not compliant with the Convention. Most New Zealand operators for whom this requirement applies to have confirmed that their aircraft conducting international air transport operations are capable of storing at least 25 hours of data in compliance with the standard. The CAA proposes that Part 125 Appendix B.4(3) be amended to align with the standard. For the same reason stated in paragraph 3.4.8 on amendments to rules in Part 121 regarding CVRs and FDRs, the CAA proposes similar amendments to rules 125.71 (Flight recorder requirements), 125.367 (Cockpit voice recorder) and 125.369 (Flight data recorder).

3.9 Use of magnetic tape and wire CVRs to be discontinued

- 3.9.1 In the past, similar to FDRs, CVRs used magnetic tape as a storage medium. Modern CVRs use digital technology and memory chips to store information.
- 3.9.2 Currently the rules enable the continued use of magnetic tape CVRs due to the incorporation by reference of the Technical Standard Order (TSO) C84 series in Part 121, Appendix B.5 (1) and Part 125 Appendix B.3 (1). TSO 84 was introduced in the 1960s and is now out of date.
- 3.9.3 The new technology has a number of benefits. It has increased recording capacity, and is more likely to survive a crash or fire, allowing investigators more reliable access to a greater depth of post-accident information. The recording function is also more reliable than magnetic tape. These enhanced features have led to the discontinuance of magnetic tape and wire CVRs.
- 3.9.4 Standard 6.3.2.2 provides as follows:

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

- 3.9.5 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 New Zealand registered operators indicates that their aircraft conducting international air transport operations comply with the requirement, with the exception of one aircraft which will be upgraded.

3.10 CVRs to retain information recorded during last two hours of operation

- 3.10.1 Standard 6.3.2.3.2 provides:

From 1 January 2016, all CVRs shall be capable of retaining the information recorded during at least the last two hours of their operation.⁹

⁷ Refer to ICAO Annex 6, standard 6.3.4.2.1. Flight time is defined in Civil Aviation Rule Part 1 as '(1) for an aircraft other than a balloon, the total time from the moment an aircraft first moves for the purpose of the flight until the moment it comes to rest at the end of the flight including any associated push back, taxiing, and subsequent holding time....'

⁸ Refer to ICAO Annex 6, standard 6.3.4.2.2.

⁹ 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".

- 3.10.2 Part 121 Appendix B.5 (3) and 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.
- 3.10.3 The ability to record information over a greater length of time as recommended in Standard 6.3.2.3.2, will provide investigators with access to a wider range of information regarding the events leading to an incident or accident. This will in turn enhance the quality of investigations and improve safety outcomes by enabling investigators to take a wider view of the chain of events leading to an occurrence. Lessons learnt from the investigations can help prevent similar occurrences from happening in the future.
- 3.10.4 The CAA proposes to amend Parts 121 and 125 to give effect to outstanding Annex 6 Part I CVR requirements. Although the majority of aircraft operating under Parts 121 and 125 are already equipped with CVRs that meet the ICAO standard 6.3.2.3.2, there are some aircraft with CVRs which do not meet the standard. In this regard, the CAA proposes a transition period of 12 months from the commencement date of the rule to allow for those aircraft to continue using those existing CVRs until 12 months later. This would be sufficient time to allow for the re-equipping of aircraft with CVRs that meet the ICAO standard 6.3.2.3.2.

3.11 Provision of an alternate power source

- 3.11.1 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 6.3.2.4.1¹⁰ that powers the forward CVR in the case of combination recorders.

- 3.11.2 The cost implications associated with this requirement will be minimal as aeroplanes will not be required to retrofit equipment. It is expected that newly manufactured aeroplanes would be equipped with CVRs that meet the ICAO standard 6.3.2.4.2.
- 3.11.3 The current Rules do not provide for CVRs that comply with the SARPs. This may result in accident investigators being less able to identify the causes and contributing factors of an accident or incident, in instances where the power shuts down and the CVR stops recording information of its operations.
- 3.11.4 Having a requirement in the Rules that aeroplanes shall be provided with an alternate power source will ensure continuity of the recording of information by CVRs. Thus preserve valuable information which accident investigators can access to help them determine the cause of an incident or accident.
- 3.11.5 Although Standard 6.3.2.4.2 is generally aimed at aeroplanes engaged in international air transport operations (majority of Part 121 operations, some under Part 125), the CAA points out that this standard will also apply to aeroplanes engaged solely in domestic air transport operations (majority of Part 125 operations). The CAA believes that the safety benefits of ensuring the protection of recorded information for international air transport operations are equally relevant to domestic air transport operations. Thus the need to extend the requirement for aeroplanes to have an alternate power source, to Part 125.

¹⁰ An alternate power source shall automatically engage and provide ten minutes, plus or minus one minute, of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power. The alternate power source shall power the CVR and its associated cockpit area microphone components. The CVR shall be located as close as practicable to the alternate power source. *Note 1 – “Alternate” means separate from the power source that normally provides power to the CVR. The use of aeroplane batteries or other power sources is acceptable provided that the requirements above are met and electrical power to essential and critical loads is not compromised.*

3.12 Equipment for single pilot operations under IFR or at night

- 3.12.1 The 2006 ICAO audit made a finding in relation to inconsistencies between the Rules and the requirements for operations-derived equipment in Annex 6 of the Convention.
- 3.12.2 Annex 6, Part I, Standard 6.22 provides as follows for all aeroplanes operated by a single pilot under Instrument Flight Rules (IFR) or at night by a single pilot:
- “For approval in accordance with 4.9.1,¹¹ 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.”*
- 3.12.3 New Zealand has filed a difference in relation to Standard 6.22 (c) in the category ‘less protective or partially implemented/not implemented’.
- 3.12.4 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 Parts 121 and 125.
- 3.12.5 This standard is not relevant to Part 121 operations which will generally have more than one pilot¹². The CAA confirms that no 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).
- 3.12.6 Based on the application of Standard 6.22 and the limits in Part 121, this SARP is only relevant to Part 125. Part 125 provides that all aircraft operated under IFR must have two pilots¹³ except where certain operational requirements are met, and the aircraft has an autopilot with at least altitude hold and heading select modes and a headset with a boom microphone¹⁴.
- 3.12.7 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 Part 125 in relation to single pilot operations under IFR.¹⁵ Part 125 requires night operations to be performed under IFR (except in a limited range of circumstances)¹⁶. The Rules assume that all night operations will be performed under IFR.
- 3.12.8 There is no requirement in 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 able to enforce the requirement under the current Rules.
- 3.12.9 The CAA proposes to amend Part 125 to require operators of aircraft engaged in international commercial air transport operations to ensure that aircraft used for single pilot operations under IFR or at night, have

¹¹ 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.

¹² Refer to rule 91.401

¹³ CAR 125.525(a)

¹⁴ CAR 125.525(b)

¹⁵ 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.

¹⁶ CAR 125.89(a)

means of displaying charts in all ambient light conditions. Given that it is already met by the relevant New Zealand operators, introducing a mandatory requirement will have negligible impact on industry.

3.13 Two landing lights - night operations

- 3.13.1 ICAO 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.
- 3.13.2 New Zealand registered aircraft currently engaged in international air transport operations are subject to Parts 121 and 125. Rules 121.359 and 125.359 require the holder of an air operator certificate to ensure that each of its aeroplanes operated at night is equipped with 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 lights¹⁷.
- 3.13.3 Part 135 applies to small aeroplanes and helicopters. The CAA confirms that no aeroplane or helicopter operating under Part 135 is authorised to conduct a scheduled and non-scheduled international air transport operation. This is unlikely to change in the future due to New Zealand's location.
- 3.13.4 New Zealand has filed a difference in relation to Standard 6.10 in the category 'less protective, or partially implemented, or not implemented'.
- 3.13.5 A lack of a requirement in the Rules for a second landing light is not itself a problem, due to widespread fitment of the relevant aircraft. However, the operators are fitting the lights on a voluntary basis as the Rules do not align with the ICAO SARPs. The CAA is not in a position to compel an operator to install a second landing light.
- 3.13.6 The CAA proposes to amend Parts 121 and 125 to reflect the ICAO requirement for a second landing light. The amendments would be cost neutral to industry as existing practice indicates that all operators comply.
- 3.13.7 Although the requirement to have two landing lights is generally aimed at aircraft engaged in international air transport operations, the CAA points out that this requirement will also apply to aircraft engaged solely in domestic air transport operations, such as the majority of those operating under Part 125. The CAA believes that the safety benefits of having two landing lights is equally applicable to domestic air transport operations, as it is for international operations.

4. Compliance Costs

The CAA does not expect the proposed amendments regarding the establishment of aerodrome operating minima, single – pilot IFR operations, two landing lights for night operations, noise certification, or informing ATS of the carriage of dangerous goods to introduce additional compliance costs to the industry, as the proposed changes encompass current practice. However, the CAA anticipates that there will be compliance costs for operators of aircraft equipped with CVRs or FDRs which do not meet the ICAO standards 6.3.2.1.3, 6.3.2.2, 6.3.2.3.2, or 6.3.2.4.2. The cost of compliance will vary depending on the age and avionic systems of the aircraft.

5. Legislative Analysis

5.1 Power to Make Rules

- 5.1.1 The Minister may make ordinary rules under sections 28, 29, 29A, 29B and 30 of the Civil Aviation Act 1990, for various purposes including implementing New Zealand's obligations under the Convention, assisting aviation safety and security, and any matter contemplated under the Act.
- 5.1.2 These proposed rules are made pursuant to:
- (a) Section 28(1)(a) which allows the Minister to make rules for the purpose of the implementation of New Zealand's obligations under the Convention:

¹⁷ Confirmed by Air New Zealand, Jetstar, Skyline Aviation and Airwork.

- (b) Section 28(1)(c) which allows the Minister to make rules for the purpose of assisting aviation safety and security, including (but not limited to) personal security:
- (c) Section 28(ce)(i) which allows the Minister to make rules for the purpose of the Minister’s objectives under section 14; which includes ensuring that New Zealand’s obligations under international civil aviation agreements are implemented:
- (d) Section 29(b)(i) which allows the Minister to make rules providing for the use of aerodromes and other aviation related facilities, including the provision of identification procedures for persons, aircraft, and any other aviation related things:
- (e) Section 29(c) which allows the Minister to make rules providing for general operating rules, air traffic rules, and flight rules, including but not limited to the following:
 - (i) the conditions under which aircraft may be used or operated, or under which any act may be performed in or from an aircraft:
 - (ii) the prevention of aircraft endangering persons or property:
- (f) Section 29(d)(i) which allows the Minister to make rules providing for the control of things likely to be hazardous to aviation safety, including but not limited to the safe carriage of firearms and other dangerous goods or substances by air:
- (g) Section 29B which allows the Minister to make rules prescribing flight rules, flight paths, altitude restrictions, and operating procedures for the purposes of noise abatement in the vicinity of aerodromes:
- (h) 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:
 - (v) air traffic services:
 - (vi) aerodromes and aerodrome operators:
 - (vii) aeronautical procedures:
 - (viii) 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:
- (i) Section 30(b) which allows the Minister to make rules for the setting of standards, specifications, restrictions, and licensing requirements for all or any of those persons or things specified in paragraph 30(a), including but not limited to the following:
 - (i) the specification of the privileges, limitations, and ratings associated with licences or other forms of approval:
 - (ii) the specification of standards of design, construction, manufacture, maintenance, processing, testing, supply, approval, and identification of aircraft and aeronautical products:
 - (iii) the format of aviation documents, forms, and applications, including the specification of information required on all application forms for aviation documents:
- (j) Section 30(c) which allows the Minister to make rules for the conditions of operation of foreign aircraft and international flights to, from, or within New Zealand.

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:

5.3 ICAO Standards and Recommended Practices

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

- Annex 6 – Operation of Aircraft
- Annex 16 – Environmental Protection
- Annex 18 – The Safe Transport of Dangerous Goods by Air

5.4 Assisting Economic Development

The proposed rule amendments will have no detrimental impact on economic development and in some cases will improve economic development for the aviation industry as New Zealand is seen to align with ICAO standards.

5.5 Assisting Safety and Personal Security

The proposed rule amendments will improve aviation safety by aligning with ICAO standards and recommended practices, and addresses the concerns of not maintaining a good EI score.

5.6 Improving Access and Mobility

The proposed rule amendments will have no impact on access and mobility.

5.7 Protecting and Promoting Public Health

The proposed rule amendments will have no impact on protecting and promoting public health.

5.8 Ensuring Environmental Sustainability

The proposed rule amendments will have no impact on environmental sustainability from that which currently exists. Amendment to rule 91.111 aligns requirements for NZ registered aircraft with current ICAO requirements in Annex 6, Part 6 and Annex 16, Volume 1. In practice main operators are meeting these requirements as they need to comply with other states' requirements.

6. Incorporation by reference

6.1 The proposed rule amendments contain existing material incorporated by reference in rule 91.803, Appendix B of Parts 121 and 125.

7. Civil Aviation (Offences) Regulations

7.1 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 rules.

7.2 The proposed rule amendments will require amendments to the Civil Aviation (Offences) Regulations. The proposed new offences and penalties are in respect of the following proposals–

- requirement for an operator to inform the ATS unit of the carriage of dangerous goods during an in-flight emergency as specified in draft rule 91.413A(b);
- requirement for a pilot-in-command to comply with the increased aerodrome operating minima referred to in draft rules 121.159A(c), 125.159A(c), 129.159A(c) and 135.159A(c); and
- requirement for the holder of an air operator certificate to ensure that the pilot-in-command complies with the prescribed aerodrome operating minima referred to in draft rules 121.159A(a), 125.159A(a), 129.107A(a) and 135.159A(a).

7.3 In light of an in-flight emergency situation where a pilot-in-command's main priority is to operate an aircraft safely and immediately deal with the emergency, the CAA considers it inappropriate to make it an offence for a pilot-in-command who fails to inform the ATS unit as soon as practicable, of the carriage of dangerous goods on board the aircraft. To impose a penalty on a pilot-in-command for not informing immediately of the in-flight emergency situation may cause the pilot to give priority to informing first, than aviating the aircraft which could put the aircraft at further risk of an accident.

7.4 However, the CAA considers it appropriate that a breach of the requirement for an operator to inform the ATS unit of the carriage of dangerous goods, as soon as the operator is aware that an in-flight emergency has, or might have occurred, should be an offence. As the proposed offence is similar to an existing offence against the requirement for an operator to provide information regarding the carriage of dangerous goods to a pilot-in-command before the departure of an aircraft¹⁸, the same level of penalties against that requirement is proposed for an offence against draft rule 91.413A(b).

7.5 The CAA further considers it appropriate that a breach of the proposed requirements referred to in paragraphs 4.4.2(b) and (c) should be offences. A breach of these requirements would pose a high risk of a collision occurring. To reflect the severity of the consequences of a breach, the CAA proposes the same heavy penalty levels currently existing for an offence against rule 91.172(b). The rule prohibits a person to operate an aircraft at an aerodrome unless the prescribed requirements are complied with.

7.6 The proposed new offences and penalties are set out in the Appendix to this NPRM.

8. Submissions on the NPRM

8.1 Submissions are invited

8.1.1 This proposal has been developed by the CAA using guidelines and advice available from ICAO, regulatory authorities, aviation organisations and individuals. 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 rule making 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.

8.2 Examination of Submissions

8.2.1 All submissions will be available in the rules docket 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 and provided to each person who submits a written submission on this NPRM.

8.2.2 Submissions may be examined by application to the Docket Clerk at the Civil Aviation Authority Level 15, Asteron Centre, 55 Featherston Street, Wellington 6011 between 8:30 am and 4:30 pm on weekdays, except statutory holidays.

9. Official Information Act

9.1 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 at Asteron Centre.

9.2 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.

10. How to make a submission

10.1 Online response form

An online response form is available on the CAA web site at <https://www.caa.govt.nz/rules/nprms/>. When submitted, this form will be sent directly to the Docket Inbox.

10.2 Submission response sheet

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

e-mail: docket@caa.govt.nz and marked NPRM 19-01

by mail: Docket Clerk (NPRM 17/CAR/2)
Civil Aviation Authority
PO Box 3555
Wellington 6140
New Zealand

delivered: Docket Clerk (NPRM 19-01)
Civil Aviation Authority
Asteron House
Level 15
55 Featherston Street
Wellington 6011

10.3 Final date for submissions

The final date for submissions is **19 October 2018** (by close of business at 5pm).

10.4 Availability of the NPRM

Any person may obtain a copy of this NPRM from–

CAA web site: www.caa.govt.nz;

or from:

Docket Clerk
Civil Aviation Authority
Asteron House
Level 15
55 Featherston Street
Wellington 6011
Phone: 64–4–560 9640 (quoting NPRM 19-01)

10.5 Further information

For further information, contact:

Salote Raiwalui
Rules Drafter
Email: salote.raiwalui@caa.govt.nz

¹⁸ See rule 92.173, and the Civil Aviation (Offences) Regulations 2006

11. Proposed rule amendments

[New wording changes from the existing rules are highlighted in grey, ~~deleted text~~ are struckthrough and highlighted grey].

Part 91 General Operating and Flight Rules

91.111 Documents to be carried

Except as provided in Parts 103, 104, and 106, a person must not operate an aircraft unless the following documents are carried in the aircraft:

- (1) except if rule 91.101(c) applies, the current airworthiness certificate or a certified copy of the current airworthiness certificate:
- (2) the aircraft flight manual or an equivalent document acceptable to the Director:
- (3) for New Zealand registered aircraft:
 - (i) the technical log required by rule 91.619, unless for aircraft operating under an air operator certificate from a fixed base an alternative means acceptable to the Director is used to inform the pilot of the maintenance status of the aircraft:
 - (ii) a completed form CAA 2173 Weight and Balance Data or equivalent:
 - (iii) a completed form CAA 2129 Aircraft Radio Station Equipment Approval Levels:
- (4) for New Zealand registered aircraft operating outside of New Zealand:
 - (i) the General Radio User's Licence issued by the Ministry of Business, Innovation and Employment:
 - (ii) the current certificate of registration for the aircraft, or a certified copy of the certificate of registration:
 - (iii) written evidence that the aircraft complies with the applicable aircraft noise standards referred to in rule 91.803(a)(1) ; and
 - (iv) evidence that each flight crew member holds an applicable and current flight crew member licence and medical certificate:
- (5) for foreign aircraft operating within New Zealand:
 - (i) the current certificate of registration for the aircraft, or a certified copy of the certificate of registration:
 - (ii) written evidence that the aircraft ~~complies with the requirements of rule 91.803(a)(2) regarding aircraft noise level compliance, and rule 91.807(2) regarding engine emission compliance~~ is certificated or validated by the State of Registry to comply with standards that are equivalent to the applicable aircraft noise standards specified in ICAO Annex 16, Volume I; and
 - (iii) evidence that each flight crew member holds an applicable and current flight crew member licence and medical certificate.

91.413A Information of carriage of dangerous goods to ATS Unit

- (a) If an in-flight emergency occurs, a pilot-in-command of an aircraft must, as soon as practicable, inform the ATS unit of the information referred to in rule 92.173(c) regarding any dangerous goods on board the aircraft.
- (b) The operator must, as soon as the operator is aware that an in-flight emergency has or might have occurred, inform the ATS unit of the information referred to in rule 92.173(c) regarding any dangerous goods on board the aircraft.

Part 121 Air Operations – Large Aeroplanes

121.89 Flight recorder requirements

- (a) Each flight crew member ~~shall~~ must ensure that—

- (1) the cockpit-voice recorder required by rule 121.371 is operated continuously from the start of the checklist commenced before engine start until the completion of the final checklist at the termination of flight; and
 - (2) if the aeroplane is equipped to record the uninterrupted audio signals received from a boom or a mask microphone, the boom microphone is used below 10 000 feet altitude.
- (b) Each flight crew member shall must ensure that—
- (1) the flight data recorder required by rule 121.373 is operated continuously from the instant the aeroplane begins the take-off until it has completed the landing to move under its own power until it has come to a complete stop at the termination of the flight; and
 - (2) all recorded data is kept until the aeroplane has been operated for at least 25 hours after each operating cycle records and stores at least the last 25 hours of its operation in digital form; and
 - (3) not more than 1 hour of recorded data is erased for the purpose of testing the flight recorder or the flight recorder system, or after a safety investigation; and
 - (4) any erasure made in accordance with under paragraph (b)(3) is—
 - (i) of the oldest recorded data accumulated at the time of testing, or safety investigation; and
 - (ii) recorded in the appropriate maintenance documentation.

121.159A Aerodrome operating minima to be used for each aerodrome

- (a) A holder of an air operator certificate must ensure that a pilot-in-command performing an air operation must comply with the aerodrome operating minima that applies to the aerodrome, as published in the applicable AIP .
- (b) The holder of an air operator certificate may increase the aerodrome operating minima by including the increased aerodrome operating minima in the certificate holder's exposition.
- (c) A pilot-in-command who operates under an increased aerodrome operating minima must comply with any requirements specified in the certificate holder's exposition in relation to the increased aerodrome operating minima.

121.359 Night flight

A Each holder of an air operator certificate must shall ensure that ~~each of its~~ aeroplanes operated ~~under the authority of the certificate, and operated~~ at night is equipped with—

- (1) two a landing lights; and
- (2) a light in each passenger compartment.

121.371 Cockpit voice recorder

- (a) A holder of an air operator certificate must ensure that an aeroplane is equipped with a cockpit voice recorder as specified in Appendix B.5.
- (b) Despite paragraph (a), an aeroplane equipped with a cockpit voice recorder immediately before [commencement date of this rule] that met the standards specified in Appendix B.5 at that time, may continue to meet those standards, until [12 months from the commencement date of this rule].
- (c) Paragraph (b) expires on [12 months from the commencement date of this rule].

121.373 Flight data recorder

- (a) A holder of an air operator certificate must ensure that ~~each of the certificate holder's~~ an aeroplanes is equipped with a flight data recorder as specified in Appendix B.6.
- (b) Despite paragraph (a), an aeroplane equipped with a flight data recorder immediately before [commencement date of this rule] that met the standards specified in Appendix B.6 at that time, may continue to meet those standards, until [12 months from the commencement date of this rule].
- (c) Paragraph (b) expires on [12 months from the commencement date of this rule].

Appendix B - Instruments and Equipment Airworthiness Design Standards

Instruments and equipment required by Subpart F ~~must shall~~ meet the following specifications and requirements:

B.1 Protective breathing equipment

(a) Protective breathing equipment ~~must shall~~ —

- (1) meet the requirements of the TSO C99 series or the TSO C116 series; and
- (2) provide a breathing gas system that is free from hazards in—
 - (i) itself; and
 - (ii) its method of operation; and
 - (iii) its effect upon other components; and
- (3) provide protection for the eyes without unduly restricting vision; and
- (4) allow any crew member to—
 - (i) determine during flight the quantity of breathing gas available in each source of supply unless the gas system uses chemical oxygen generators; and
 - (ii) use corrective glasses without undue impairment of vision, or loss of protection; and
 - (iii) communicate using the crew member intercom system; and
- (5) allow the flight crew members to communicate using the aeroplane radios; and
- (6) supply breathing gas for 15 minutes at a pressure altitude of 8 000 feet.

(b) Protective breathing equipment may also be used to meet the supplemental oxygen requirements of Part 91 provided it meets the oxygen equipment standards.

B.2 Emergency medical kit

Emergency medical kits ~~must shall~~ —

- (1) be located and secured such that—
 - (i) the possibility of damage or loss as the result of an accident is minimised; and
 - (ii) there is no danger to the occupants of the aeroplane; and
- (2) have its location marked on the outside of any compartment containing the kit; and
- (3) be marked for use by qualified medical personnel only; and
- (4) when containing narcotics, be installed in an aeroplane that—
 - (i) meets the requirements of the Misuse of Drugs Regulations 1977; and
 - (ii) when not in use can be locked, or placed in a lockable hangar, or have the first aid kit containing narcotics removed to a safe and secure location.

B.3 Public address system

(a) A public address system ~~must shall~~ —

- (1) except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the crew member intercom system required by [rule 121.369\(2\)](#); and
- (2) be accessible for immediate use from each of two flight crew member stations in the flight crew compartment; and

- (3) for each required floor-level passenger emergency exit that has an adjacent flight attendant seat, have a microphone which is readily accessible to the seated flight attendant; and
 - (4) be capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible; and
 - (5) be understandably audible at all times at all passenger seats, lavatories, flight attendant seats, and work stations.
- (b) For the purposes of paragraph (a)(3), one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants.

B.4 Crew member intercom system

A crew-member intercom system ~~must shall~~ —

- (1) except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the public address system required by rule 121.369(1); and
- (2) provide a means of two-way communication between all members of the flight crew; and
- (3) provide a means of two-way communication between the flight crew compartment and each passenger compartment; and
- (4) be accessible for immediate use from each of two flight crew member stations in the flight crew compartment; and
- (5) be accessible for use from at least one normal flight-attendant station in each passenger compartment; and
- (6) be capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and
- (7) be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from a station so equipped; and
- (8) have an alerting system that—
 - (i) incorporates aural or visual signals for use by any crew member; and
 - (ii) has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and
- (9) provide a means of two-way communication between ground personnel and any two flight crew members in the flight crew compartment—
 - (i) when the aeroplane is on the ground; and
 - (ii) from a location that avoids visible detection from within the aeroplane during the operation of the ground personnel intercom system station.

B.5 Cockpit voice recorder

A ~~Cockpit voice recorders~~ ~~must shall~~ —

- (1) meet the requirements of ~~the TSO C84 series or~~ the TSO C123 series; and
- (2) be fitted with an underwater locating device that meets the requirements of the TSO C121 series; and
- (3) ~~have a minimum capacity of 30 minutes continuous recording time before any erasure~~ record and stores at least the last 2 hours of its operation; and
- (4) ~~have an alternate power source that is separate from the power source that normally provides power to the recorder and complies with standard 6.3.2.4.1 of ICAO Annex 6 to the Convention on International Civil Aviation.~~

B.6 Flight data recorder

A flight data recorders ~~must shall~~ —

- (1) meet the requirements of the TSO C124 series; and
- (2) be fitted with an underwater locating device that meets the requirements of the TSO C121 series; and
- (3) be of a non-ejectable type and capable of recording and storing at least the last ~~825~~ hours of ~~data~~ its operation in a digital form; and
- (4) record the parameters as detailed in—
 - (i) Figure 1; and
 - (ii) as applicable, Table 1 and Table 2—
 of Appendix B.

B.7 Additional attitude indicator

The third presentation of attitude ~~must shall~~ be—

- (1) operated independently of any other attitude indicating system; and
- (2) powered from a source independent of the electrical generating system; and
- (3) capable of continuous reliable operation for 30 minutes after total failure of the electrical generating system; and
- (4) operative without selection after total failure of the electrical generating system; and
- (5) appropriately lighted during all phases of operation.

B.8 Weather radar

Weather radar ~~must shall~~ meet the requirements of the TSO C63 series.

B.9 Ground proximity warning system

GPWS ~~must shall~~ meet the requirements of the TSO C92 series.

B.10 Terrain awareness and warning system (TAWS)

TAWS Class A must meet the requirements of TSO C151a or TSO C151b for Class A equipment.

TAWS Class B must meet the requirements of TSO C151a or TSO C151b for Class B equipment.

B.11 Airborne Collision Avoidance System (ACAS II)

ACAS II must meet the requirements of TSO C119b.

Part 125 Air Operations – Medium Aeroplanes

125.71 Flight recorder requirements

- (a) Each flight crew member ~~must shall~~ ensure that, when a cockpit-voice recorder is required by ~~rule~~ 125.367—
 - (1) it is operated continuously from the start of the checklist commenced before engine start until the completion of the final checklist at the termination of flight; and
 - (2) if the aeroplane is equipped to record the uninterrupted audio signals received from a boom or a mask microphone, boom microphones are used below 10 000 feet altitude; and
 - (3) if an erasure feature is used in the cockpit-voice recorder, only information recorded more than 30 minutes earlier than the last record is erased or otherwise obliterated.
- (b) Each flight crew member ~~must shall~~ ensure that, when a flight data recorder is required by rule 125.369—

- (1) it is operated continuously from the instant the aeroplane begins ~~the take-off until it has completed the landing~~ to move under its own power until it has come to a complete stop at the termination of the flight; and
- (2) ~~records and stores at least the last 25 hours of its operation in digital form— all recorded data is kept until the aeroplane has been operated for at least 25 hours after each operating cycle;~~ and
- (3) not more than 1 hour of recorded data is erased for the purpose of testing the flight recorder system, ~~or after a safety investigation;~~ and
- (4) any erasure made ~~in accordance with~~ under paragraph (b)(3) is –
 - (i) of the oldest recorded data accumulated at the time of testing ~~or safety investigation;~~ and
 - (ii) recorded in the appropriate maintenance documentation.

125.159A Aerodrome operating minima to be used for each aerodrome

- (a) A holder of an air operator certificate must ensure that a pilot-in-command performing an air operation complies with the aerodrome operating minima that applies to the aerodrome, as published in the applicable AIP.
- (b) The holder of an air operator certificate may increase the aerodrome operating minima by including the increased aerodrome operating minima in the certificate holder's exposition.
- (c) A pilot-in-command who operates under an increased aerodrome operating minima in accordance with paragraph (b) must comply with any requirements specified in the certificate holder's exposition in relation to the increased aerodrome operating minima.

125.359 Night flight

~~A Each~~ holder of an air operator certificate ~~must shall~~ ensure that ~~an each of its~~ aeroplane operated at night is equipped with—

- (1) ~~two a~~ landing lights; and
- (2) a light in each passenger compartment; and
- (3) a means of displaying charts that enables them to be readable in all ambient light conditions.

125.361 Instrument flight rules

(a) Except as provided in paragraph (b), a holder of an air operator certificate must ensure that ~~every an~~ aeroplane ~~that is operated under IFR under the authority of the certificate~~ is equipped with—

- (1) the following that must be in addition to, and independent of, the instruments and equipment required under Subpart F of Part 91:
 - (i) a means of indicating airspeed, calibrated in knots, with a means of preventing malfunctioning due to either condensation or icing;
 - (ii) a means of indicating sensitive pressure altitude calibrated in feet; and
- (2) spare bulbs for flight compartment instrument illumination; and
- (3) spare fuses.

(b) An additional means of indicating aeroplane attitude, powered by a power source that is separate from the power source for the attitude indication required under Subpart F of Part 91, may be installed instead of the additional means of indicating air speed required by paragraph (a)(1)(i).

(c) A holder of an air operator certificate must ensure that ~~each an~~ aeroplane ~~that is~~ used to conduct a SEIFR passenger operation ~~under the authority of the certificate~~ is equipped with an emergency electrical supply system with sufficient capacity for the following in the event that all engine-powered electrical generating systems fail:

- (1) the extension of landing gear, if appropriate:

- (2) the extension of flaps:
 - (3) the operation of those aeroplane systems essential for continued safe IFR flight and landing, including those required by paragraphs (d)(3), (d)(4), and (d)(5):
 - (4) either of the following whichever requires the higher electrical load—
 - (i) the descent of the aeroplane from maximum operating altitude to sea level, assuming the aeroplane is configured in the optimum gliding configuration and operated at the optimum still air range gliding speed for the descent, plus one attempt at engine restart; or
 - (ii) the continuation of flight for a minimum of one hour.
- (d) A holder of an air operator certificate must ensure that each aeroplane that is used to conduct a SEIFR passenger operation ~~under the authority of the certificate~~ is equipped with—
- (1) an additional independent engine-powered electrical generating system capable of supplying adequate electrical power for all the required electrically operated instruments and systems and;
 - (2) an additional attitude indicator, powered by an independent source; and
 - (3) an area navigation system capable of being programmed with the positions of aerodromes and emergency landing sites en-route that is—
 - (i) certified for IFR by the navigation system manufacturer; and
 - (ii) permanently installed in the aeroplane; and
 - (iii) powered by the aeroplane's emergency electrical supply system; and
 - (4) a radar altimeter or radio altimeter that is powered by the aeroplane's emergency electrical supply system; and
 - (5) a landing light that is powered by the aeroplane's emergency electrical supply system; and
 - (6) for a pressurised aeroplane, sufficient additional oxygen for every occupant for the period that is required for the aeroplane to descend safely from its cruising level to a cabin altitude of 14,000 feet following engine failure assuming—
 - (i) the maximum cabin leak rate; and
 - (ii) the best range gliding speed for the aeroplane; and
 - (iii) the best gliding configuration for the aeroplane; and
 - (7) a powerplant installation that has been certificated by an ICAO Contracting State to FAR 33, Amendment 28, or equivalent airworthiness standards, and is equipped with—
 - (i) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight in visible moisture and is designed to be capable of operation for the full duration of any flight; and
 - (ii) a magnetic particle detector system that monitors the engine and reduction gearbox lubrication systems, and includes a flight deck caution indicator; and
 - (iii) an engine control system that permits continued operation of the engine through a power range sufficient to allow diversion to a suitable aerodrome and landing in the event the fuel control unit fails or malfunctions; and
 - (iv) an engine fire warning system; and
 - (8) a means of displaying charts that enables them to be readable in all ambient light conditions.
- (e) If the magnetic particle detector system required by paragraph (d)(7)(ii) incorporates a method to remove detected particles without the removal of the particle detector from the engine or without examining the particles, the holder of the

air operator certificate must ensure that each particle detection occurrence indicated by the particle detection system is recorded in the technical log as soon as practicable after the indication.

125.367 Cockpit voice recorder

(a) A holder of an air operator certificate must ensure that an aeroplane is equipped with a cockpit voice recorder as specified in Appendix B.3, if the aeroplane's flight manual requires 2 or more flight crew members.

(b) Despite paragraph (a), an aeroplane equipped with a cockpit voice recorder that immediately before [commencement date of this rule] that met the standards specified in Appendix B.3 at that time, may continue to meet those standards, until [12 months from the commencement date of this rule].

(c) Paragraph (b) expires on [12 months from the commencement date of this rule].

125.369 Flight data recorder

(a) Except as provided in paragraph (b), a holder of an air operator certificate must ensure that a multi-engine turbine powered aeroplane is equipped with a flight data recorder as specified in Appendix B.4.

(b) Paragraph (a) does not apply to the holder of an air operator certificate in respect of the following:

- (1) a de Havilland DH 6 aeroplane;
- (2) an aeroplane registered on or before 31 March 1997 with a MCTOW of less than 5 700 kg;
- (3) an aeroplane with a passenger seating configuration of less than 10 seats; or
- (4) an aeroplane equipped with a flight data recorder that does not meet the standards specified in Appendix B.4, until 12 months from the commencement date of this rule.

Appendix B – Instruments and Equipment

Instruments and equipment required by Subpart F ~~must shall~~ meet the following specifications and requirements:

B.1 Public address system

(a) A public address system ~~must shall~~ —

- (1) except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the crew member intercom system required by rule 125.365(2); and
- (2) be accessible for immediate use from each of two flight crew member stations in the cockpit; and
- (3) for each required floor-level passenger emergency exit that has an adjacent flight attendant seat, have a microphone which is readily accessible to the seated flight attendant; and
- (4) be capable of operation within 10 seconds by a flight attendant at each of those stations in the passenger compartment from which its use is accessible; and
- (5) be understandably audible at all times at all passenger seats, lavatories, flight attendant seats, and work stations.

(b) ~~Despite Notwithstanding~~ paragraph (a)(3), one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants.

B.2 Crew member intercom system

A crew-member intercom system ~~must shall~~ —

- (1) except for handsets, headsets, microphones, selector switches, and signalling devices, be capable of operation independent of the public address system required by rule 125.365(1); and
- (2) provide a means of two-way communication between all members of the flight crew; and
- (3) provide a means of two-way communication between the cockpit and each passenger compartment; and

- (4) be accessible for immediate use from each of two flight crew member stations in the cockpit; and
- (5) be accessible for use from at least one normal flight-attendant station in each passenger compartment; and
- (6) be capable of operation within 10 seconds by a flight attendant at each of those stations in each passenger compartment from which its use is accessible; and
- (7) be accessible for use at enough flight attendant stations so that all floor-level emergency exits in each passenger compartment are observable from a station so equipped; and
- (8) have an alerting system that—
 - (i) incorporates aural or visual signals for use by any crew member; and
 - (ii) has a means for the recipient of a call to determine whether it is a normal call or an emergency call; and
- (9) provide a means of two-way communication between ground personnel and any two flight crew members in the cockpit—
 - (i) when the aeroplane is on the ground; and
 - (ii) from a location that avoids visible detection from within the aeroplane during the operation of the ground personnel interphone system station.

B.3 Cockpit voice recorder

A ~~Cockpit~~ voice recorder ~~must shall~~ —

- (1) meet the requirements of ~~the TSO C84 series or the TSO C123 series;~~ and
- (2) be fitted with an underwater locating device that meets the requirements of the TSO C121 series; and
- (3) ~~have a minimum capacity of 30 minutes recording time before any erasure~~ be of a non-ejectable type and capable of recording and storing at least the last 2 hours of its operation; and
- (4) have an alternate power source that is separate from the power source that normally provides power to the recorder and complies with standard 6.3.2.4.1 of ICAO Annex 6.

B.4 Flight data recorder

A ~~Flight~~ data recorder ~~must shall~~ —

- (1) meet the requirements of the TSO C124 series; and
- (2) be fitted with an underwater locating device that meets the requirements of the TSO C121 series; and
- (3) be of a non-ejectable type and capable of recording and storing ~~at least the last 825 hours of data~~ its operation in a digital form; and
- (4) except as provided in an MEL, record the parameters as detailed in—
 - (i) Figure 1; and
 - (ii) as applicable, Table 1 and Table 2—
 of Appendix B.

B.5 Additional attitude indicator

The third presentation of attitude ~~must shall~~ be—

- (1) operated independently of any other attitude indicating system; and
- (2) powered from a source independent of the electrical generating system; and

- (3) capable of continuous reliable operation for 30 minutes after total failure of the electrical generating system; and
- (4) operative without selection after total failure of the electrical generating system; and
- (5) appropriately lighted during all phases of operation.

B.6 Weather radar

Weather radar ~~must shall~~ meet the requirements of the TSO C63 series.

B.7 Ground proximity warning system

GPWS ~~must shall~~ meet the requirements of the TSO C92 series.

B.8 AEDRS

- (a) An AEDRS must electronically record—
 - (1) the period of time that the engine is running at operating RPM; and
 - (2) engine parameter data for those engine parameters that are critical to engine performance and condition, as recommended by the engine manufacturer or another organisation acceptable to the Director that has design and maintenance knowledge of the engine type; and
 - (3) the engine running time during any AEDRS sensing device failure; and
 - (4) every exceedance of the operating limit associated with each of the parameters recorded under paragraph (a)(2); and
 - (5) as far as practicable, any occurrence of tampering with any component of the AEDRS.
- (b) An AEDRS must—
 - (1) have sufficient electronic memory to record, between maintenance checks, all the data and occurrences required under paragraph (a); and
 - (2) store data in a manner that enables trends over time to be electronically established for the engine parameters recorded under paragraph (a)(2); and
 - (3) include a cockpit caution indication of—
 - (i) any exceedance of the tolerances on the parameters recorded under paragraph (a)(2); and
 - (ii) as far as practicable, an AEDRS failure including tampering; and
 - (4) automatically activate the data recording at the commencement of a start cycle for the engine; and
 - (5) comply with the environmental conditions specified in RTCA Inc. document number RTCA/DO-160C; and
 - (6) comply with the software conditions specified in RTCA Inc. document number RTCA/DO-178B; and
 - (7) identify, as recommended by the AEDRS manufacturer, any components of the propulsion and airframe system it is monitoring; and
 - (8) be capable of downloading its data to a separate ground based data storage unit.

B.9 Terrain awareness and warning system (TAWS)

- (a) TAWS Class A must meet the requirements of TSO C151a or TSO C151b for Class A equipment.
- (b) TAWS Class B must meet the requirements of TSO C151a or TSO C151b for Class B equipment.

B.10 Airborne collision avoidance system (ACAS II)

- (a) ACAS II must meet the requirements of TSO C119b or TSO C119c.
- (b) ACAS is equipment that meets the requirements of TSO C118 or TSO C119a.

B.11 Protective breathing equipment

- (a) Protective breathing equipment must—
- (1) meet the requirements of the TSO C99 series or the TSO C116 series; and
 - (2) provide a breathing gas system that is free from hazards in—
 - (i) itself; and
 - (ii) its method of operation; and
 - (iii) its effect upon other components; and
 - (3) provide protection for the eyes without unduly restricting vision; and
 - (4) allow any crew member to—
 - (i) determine during flight the quantity of breathing gas available in each source of supply unless the gas system uses chemical oxygen generators; and
 - (ii) use corrective glasses without undue impairment of vision, or loss of protection; and
 - (iii) communicate using the crew member intercom system; and
 - (5) allow a flight crew member to communicate using the aeroplane radio; and
 - (6) supply breathing gas, if necessary, for 15 minutes at a pressure altitude of 8 000 feet.
- (b) Protective breathing equipment may also be used to meet the supplemental oxygen requirements of Part 91 provided it meets the oxygen equipment standards.

Part 129 Foreign Air Transport Operator – Certification**129.107A Aerodrome operating minima to be used for each aerodrome**

- (a) A holder of a foreign air operator certificate must ensure that a pilot-in-command performing a foreign air transport operation in New Zealand complies with the aerodrome operating minima that applies to the aerodrome, as published in the AIPNZ.
- (b) The holder of a foreign air operator certificate may increase the aerodrome operating minima by including the increased aerodrome operating minima in the certificate holder's exposition.
- (c) A pilot-in-command who operates under an increased aerodrome operating minima in accordance with paragraph (b) must comply with any requirements specified in the certificate holder's exposition in relation to the increased aerodrome operating minima.

Part 135 Air Operations – Helicopters and Small Aeroplanes**135.159A Aerodrome operating minima to be used for each aerodrome**

- (a) A holder of an air operator certificate must ensure that a pilot-in-command performing an air operation complies with the aerodrome operating minima that applies to the aerodrome, as published in the applicable AIP.
- (b) The holder of an air operator certificate may increase the aerodrome operating minima by including the increased aerodrome operating minima in the certificate holder's exposition.
- (c) A pilot-in-command who operates under an increased aerodrome operating minima in accordance with paragraph (b) must comply with any requirements specified in the certificate holder's exposition in relation to the increased aerodrome operating minima.

Appendix

Proposed new offences and penalties

Rule	Description of Offence	Fines and Fees (\$)			
		Conviction		Infringement fee	
		Individual	Body Corporate	Individual	Body Corporate
91.413A(b)	Responsibilities of the operator to inform ATS unit of the prescribed information, once aware of the in-flight emergency	2,500	15,000	1,000	6,000
121.159A(a)	Holder of air operator certificate must ensure that pilot-in-command complies with the prescribed aerodrome operating minima	5,000	30,000	2,000	12,000
121.159A(c)	Pilot-in-command who operates under the prescribed increased aerodrome operating minima must comply with any specified requirements	2,500	15,000	1,000	12,000
125.159A(a)	Holder of air operator certificate must ensure that pilot-in-command complies with the prescribed aerodrome operating minima	5,000	30,000	2,000	12,000
125.159A(c)	Pilot-in-command who operates under the prescribed increased aerodrome operating minima must comply with any specified requirements	2,500	15,000	1,000	6,000
129.107A(a)	Holder of air operator certificate must ensure that pilot-in-command complies with the prescribed aerodrome operating minima	5,000	30,000	2,000	12,000
129.107A(c)	Pilot-in-command who operates under the prescribed increased aerodrome operating minima must comply with any specified requirements	2,500	15,000	1,000	12,000
135.159A(a)	Holder of air operator certificate must ensure that pilot-in-command complies	5,000	30,000	2,000	12,000

	with the prescribed aerodrome operating minima				
135.159A(c)	Pilot-in-command who operates under the prescribed increased aerodrome operating minima must comply with any specified requirements	2,500	15,000	1,000	6,000