



**PURSUANT** to section 28 of the Civil Aviation Act 1990, and after having had regard to the criteria specified in section 33(2) of that Act

**I, CRAIG FOSS**, Associate Minister of Transport,

**HEREBY MAKE** the following ordinary rules.

**SIGNED AT** Wellington

This **23** day of **June** 2015

by **Hon CRAIG FOSS**

A handwritten signature in black ink, appearing to read 'C. Foss', is written over the printed name 'Hon CRAIG FOSS'.

Associate Minister of Transport

**Civil Aviation Rules**

**Part 139, Amendment 10**

**Aerodromes - Certification, Operation and Use**

*Docket 8/CAR/3*

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## **Rule objective**

The objective of Amendment 10 to Part 139 is to ensure effective safety oversight of all aerodromes in New Zealand by providing the Director of the Civil Aviation Authority with the appropriate regulatory tools to manage aviation risk.

## **Extent of consultation**

A Notice of Proposed Rulemaking, NPRM 11-02, containing the proposed *Rule Part 139 Aerodromes – Certification, Operation and Use* was issued for public consultation under Docket 8/CAR/3 on 15 March 2012. The publication of this NPRM was notified in the Gazette on 15 March 2012.

A second Notice of Proposed Rulemaking, NPRM 11-02 (revised), containing revised proposals to amend *Rule Part 139 Aerodromes – Certification, Operation and Use* was issued for public consultation under Docket 8/CAR/3 on 13 March 2014. The publication of this NPRM was notified in the Gazette on 13 March 2014.

The NPRM was published on the Civil Aviation Authority web site and mailed to identified stakeholders including representative organisations who were considered likely to have an interest in the proposal.

A period of 106 days was allowed for comment on the 2012 proposed rules. A period of 47 days was allowed for comment on the 2014 revised proposed rules.

## **Summary of submissions**

Seventy-two written submissions and zero oral comments were received on the first NPRM. Twenty written submissions were received on the 2014 revised NPRM. As a result of the consideration of these submissions, amendments were made to the proposed rules, with a change from a mandatory approach to a more flexible risk-based approach to certification of aerodromes.

## **Examination of submissions**

Submissions may be examined by application to the Docket Clerk at the Civil Aviation Authority between 8:30 am and 4:30 pm on weekdays, except statutory holidays.

**Effective date of rule**

Amendment 10 to Part 139 comes into force on 1 August 2015.

**Availability of rules**

Civil Aviation Rules are available from–

CAA web site: <http://www.caa.govt.nz/>

Freephone: 0800 GET RULES (0800 438 785)

## Part 139 Aerodromes - Certification, Operation and Use

### 1. **Rule 139.1 amended**

*In rule 139.1, delete paragraph (3).*

### 2. **New Rule 139.3 inserted**

*After rule 139.1, insert:*

#### **139.3 Definitions**

In this Part—

**Aerodrome operator** means—

- (1) a person who operates an aerodrome; or
- (2) if no person is identified in paragraph (1), a person who is responsible for the management of that aerodrome; or
- (3) if no person is identified in paragraphs (1) or (2), a person who is occupying the land forming that aerodrome; or
- (4) if no person is identified in paragraphs (1), (2), or (3), the registered proprietor of the land forming that aerodrome.

**Registered proprietor** means a registered proprietor as defined in section 35 of the Land Transfer Act 1952.

### 3. **Rule 139.5 amended**

*(a) In rule 139.5, replace the heading with:*

#### **139.5 Requirement for aerodrome operator certificate**

*(b) In rule 139.5, before paragraph (a), insert:*

- (aa) This rule applies to the following aerodromes:
  - (1) an aerodrome serving any aeroplane that is engaged in regular air transport operations where—

- (i) the aeroplane's point of take-off that immediately precedes the aeroplane landing at the aerodrome, is an aerodrome outside New Zealand; or
  - (ii) the aeroplane's point of landing that immediately follows the aeroplane taking-off from the aerodrome, is an aerodrome outside New Zealand:
- (2) an aerodrome serving an aeroplane having a certificated seating capacity of more than 30 passengers that is engaged in regular air transport operations for the carriage of passengers:

*(c) In rule 139.5, replace paragraph (a) with:*

(a) A person must not operate an aerodrome to which this rule applies except under the authority of an aerodrome operator certificate granted by the Director under the Act and in accordance with this Subpart.

*(d) In rule 139.5, in paragraph (b), —*

- (i) replace “who” with “that”; and*
- (ii) delete “under paragraph (a)”; and*
- (iii) replace “operating” with “operator” in each instance where it appears; and*
- (iv) delete “under this Part”.*

#### **4. New rule 139.5A inserted**

*After rule 139.5, insert:*

##### **139.5A Requirement for qualifying aerodrome operator certificate**

(a) This rule applies to an aerodrome that has been determined by the Director in accordance with rule 139.23 to be a qualifying aerodrome.

(b) A person must not operate a qualifying aerodrome except under the authority of a qualifying aerodrome operator certificate granted by the Director under the Act and in accordance with this Subpart.

(c) An aerodrome operator that is not required to hold a qualifying aerodrome operator certificate may apply for a qualifying aerodrome certificate.

**5. Rule 139.7 replaced**

*Replace rule 139.7 with:*

**139.7 Application for certificate**

(a) An applicant for the grant of an aerodrome operator certificate or a qualifying aerodrome operator certificate must—

- (1) submit an application to the Director in accordance with section 8 of the Act; and
- (2) pay the appropriate application fee provided for in regulations made under the Act.

(b) An application must include—

- (1) a completed application form; and
- (2) the exposition required by rule 139.77 for an aerodrome operator certificate or the exposition required by rule 139.417 for a qualifying aerodrome operator certificate, whichever is applicable; and
- (3) a plan of the aerodrome and its facilities certified by a registered surveyor; and
- (4) evidence of lawful entitlement to use the place as an aerodrome.

(c) The application must be submitted to the Director not less than 90 days before the certificate is required.

**6. Rule 139.9 replaced**

*Replace rule 139.9 with:*

**139.9 Grant of certificate**

(a) The Director, in accordance with section 9 of the Act, may grant an aerodrome operator certificate or a qualifying aerodrome operator certificate, to a person who has applied under rule 139.7.

(b) For the purpose of sections 9(1)(a) and 9(1)(b)(iii) of the Act, the relevant prescribed requirements are the applicable requirements specified in Subpart B or Subpart G, whichever is applicable.

(c) Without limiting the power in section 7(3) of the Act, when granting a qualifying aerodrome operator certificate, the Director may impose any requirements or specify any procedures to be followed by the aerodrome operator to address the risks identified in an aeronautical study required by rule 139.21.

**7. Rule 139.11 amended**

*(a) In rule 139.11, replace paragraph (a) with:*

(a) The Director may not specify an expiry date in relation to an aerodrome operator certificate or a qualifying aerodrome operator certificate that is later than five years after the date on which the certificate is granted.

*(b) In rule 139.11, delete paragraphs (b), (c), and (d).*

**8. Rule 139.13 replaced**

*Replace rule 139.13 with:*

**139.13 Renewal of certificate**

(a) A holder of a current aerodrome operator certificate or a qualifying aerodrome operator certificate that wishes to continue to exercise the privileges of the certificate beyond its expiry date must apply for a new certificate under rule 139.7.

(b) Despite rule 139.7(c), a renewal application must be submitted to the Director not less than 60 days before the certificate expires.

**9. Rule 139.17 amended**

*(a) In rule 139.17, replace paragraph (a) with:*

(a) A holder of an aerodrome operator certificate may deviate from any requirement in Subpart C or Subpart D to the extent necessary if an emergency occurs that requires immediate action for the protection of life or property involving carriage by air.

*(b) In rule 139.17, after paragraph (a), insert:*

(aa) A holder of a qualifying aerodrome operator certificate may deviate from any requirement in Subpart G or Subpart H to the extent necessary if an emergency occurs that requires immediate action for the protection of life or property involving carriage by air.

*(c) In rule 139.17, replace paragraph (b) with:*

(b) A certificate holder who deviates under paragraph (a) from a requirement in Subpart C or Subpart D, or under paragraph (aa) from a requirement in Subpart G or Subpart H, must provide a written report to the Director as soon as practicable, but not later than 14 days after the emergency.

*(d) In rule 139.17, after paragraph (b), insert:*

(c) The report required under paragraph (b) must specify the nature, extent, and duration of the deviation.

#### **10. New rule 139.19 inserted**

*After rule 139.17, insert:*

#### **139.19 Requirements for non-certificated aerodromes**

A person operating an aerodrome that is not operated under the authority of an aerodrome operator certificate or a qualifying aerodrome operator certificate must comply with the requirements in Subpart I of this Part.

#### **11. New subpart AA inserted**

*After rule 139.19, insert:*

### **Subpart AA — Determination of qualifying aerodrome**

#### **139.21 Aeronautical study**

(a) An aerodrome operator that does not hold an aerodrome operator certificate or a qualifying aerodrome operator certificate may be required by the Director to provide an aeronautical study if —

- (1) the Director considers that a significant change has occurred or on reasonable grounds is likely to occur that may affect the operation or use of the aerodrome; or
- (2) a significant concern indicating risk to aviation safety is raised by any person; or
- (3) the Director has issued a conditional determination under rule 157.11(a)(2) in relation to—
  - (i) a change of the type described in paragraph (a)(1); or
  - (ii) a concern of the type described in paragraph (a)(2); or
- (4) the Director has issued an objectionable determination under rule 157.11(a)(3) in relation to—
  - (i) a change of the type described in paragraph (a)(1); or
  - (ii) a concern of the type described in paragraph (a)(2).

(b) For the purpose of paragraph (a)(1), a significant change includes—

- (1) the commencement or proposed commencement of a regular air operation using an aeroplane that has—
  - (i) a certificated seating capacity of more than 9 passengers; or
  - (ii) a payload capacity of 3410 kg or less and a MCTOW of greater than 5700 kg; or
  - (iii) a single engine and performs an SEIFR passenger operation; or
- (2) a significant increase in aerodrome aircraft traffic volumes; or

- (3) a significant change in type of aircraft using, or type of aircraft operations carried out at, the aerodrome; or
  - (4) a significant change in the aerodrome's physical characteristics; or
  - (5) an increase in accidents or incidents at or in the vicinity of the aerodrome; or
  - (6) when annual aircraft movements at the aerodrome are forecast to exceed, for 3 consecutive years,—
    - (i) 40,000 or more combined VFR and IFR movements; or
    - (ii) 7,500 or more IFR movements; or
    - (iii) 60,000 or more combined VFR and IFR movements of which 9,000 or more are IFR movements; or
    - (iv) 15,000 or more IFR movements; or
    - (v) 100,000 or more combined VFR and IFR movements.
- (c) If the Director requires an aeronautical study, the request must—
- (1) be made in writing; and
  - (2) specify a reason for the request; and
  - (3) specify the scope of the aeronautical study required; and
  - (4) specify a date, before which, the aeronautical study must be provided.
- (d) A person who has been required by the Director to conduct an aeronautical study must—
- (1) consult with such persons, industry representatives, representative groups and organisations as the Director considers appropriate; and

- (2) in the aeronautical study, identify—
  - (i) the effects the aerodrome design or use has on the safe and efficient use of the aerodrome by aircraft, and on the safety of persons and property on the ground; and
  - (ii) current and proposed risk mitigation measures; and
- (3) submit the aeronautical study to the Director before the date specified in the request.

(e) The Director may require the person to provide further information if the Director considers that an aeronautical study does not contain sufficient information to enable the Director to identify and assess the risk to aviation safety of the operation of the aerodrome.

(f) A person required to provide further information, must provide the required information to the Director.

### **139.23 Qualifying aerodrome operator determination**

(a) After receiving an aeronautical study that was submitted under 139.21(d)(3), the Director must determine that an aerodrome is a qualifying aerodrome if the Director considers that the level of risk to aviation safety, assessed under paragraph (b), is such that it must be managed under the authority of a qualifying aerodrome operator certificate.

(b) Before making a determination, the Director must—

- (1) conduct a safety review to assess the risk to aviation safety of the operation of an aerodrome by taking into account—
  - (i) the aeronautical study provided under rule 139.21 including all current and proposed risk mitigation measures; and
  - (ii) all risks identified in relation to the aerodrome; and
  - (iii) the matters specified in rule 139.21(b); and
  - (iv) any other relevant information; and

- (2) consult with the aerodrome operator to—
  - (i) determine if the aerodrome operator can mitigate or eliminate any identified risk to aviation safety; and
  - (ii) determine whether, if the actions identified under subparagraph (2)(i) are taken, the risks to aviation safety will be managed to a level at which no determination will be required; and
- (3) consult with any other party and aviation industry participant, that the Director considers may be appropriate, to determine if a determination is required.

(c) For the purpose of paragraph (b)(1)(i), the Director may, if the Director considers it appropriate, use an aeronautical study that was prepared under Part 157 instead of an aeronautical study required under rule 139.21.

### **139.25 Determination to be advised**

The Director must, as soon as practicable after making a determination, advise the aerodrome operator, in writing of—

- (1) the determination; and
- (2) the date on which the determination comes into effect; and
- (3) the reasons for the determination; and
- (4) the aerodrome operator's right of appeal under section 66 of the Act.

### **139.27 Effective date of determination**

A determination comes into effect on the date specified by the Director.

### **139.29 Revocation of determination**

(a) If requested by an aerodrome operator, the Director may revoke a determination made for an aerodrome if the Director is satisfied that the criterion in rule 139.23(a) for making the determination is no longer

satisfied and the aerodrome is no longer required to be managed under the authority of a qualifying aerodrome operator certificate.

(b) The onus is on the aerodrome operator to demonstrate to the Director that the criterion in rule 139.23(a) for making the determination is no longer satisfied and the aerodrome is no longer required to be managed under the authority of a qualifying aerodrome operator certificate.

(c) A revocation takes effect from the date specified by the Director.

## **12. Rule 139.51 amended**

*(a) In rule 139.51, replace paragraph (a) with:*

(a) An applicant for the grant of an aerodrome operator certificate must ensure that the physical characteristics of the aerodrome, the obstacle limitation surfaces, the visual aids for navigation and for denoting obstacles and restricted areas, and the equipment and installations for the aerodrome are commensurate with—

- (1) the characteristics of the aircraft that the aerodrome is intended to serve; and
- (2) the lowest meteorological minima intended for each runway; and
- (3) the ambient light conditions intended for the operation of aircraft on each runway.

*(b) In rule 139.51, replace paragraph (c) with:*

(c) The RESA provided at the aerodrome must be acceptable to the Director.

*(c) In rule 139.51, after paragraph (c), insert:*

(d) An applicant for the grant of an aerodrome operator certificate must ensure that the physical characteristics, obstacle limitation surfaces, visual aids, equipment and installations, provided at the aerodrome are—

- (1) compliant with—

- (i) Appendix C; and
  - (ii) Appendix D; and
  - (iii) rules E.1, E.2, and E.3 of Appendix E; and
  - (iv) rule E.4 of Appendix E after 31 July 2018; and
  - (v) Appendix F; and
  - (vi) Appendix G; and
  - (vii) Appendix H after 31 July 2018; and
- (2) acceptable to the Director.
- (e) Paragraph (d) applies only to areas on an aerodrome that are used by—
- (1) 1 or more aeroplanes engaged in regular air transport operations where—
    - (i) the aeroplane’s point of take-off that immediately precedes the aeroplane landing at the aerodrome, is an aerodrome outside New Zealand; or
    - (ii) the aeroplane’s point of landing that immediately follows the aeroplane taking-off from the aerodrome, is an aerodrome outside New Zealand:
  - (2) 1 or more aeroplanes having a certificated seating capacity of more than 30 passengers that are engaged in regular air transport operations for the carriage of passengers.

**13. Rule 139.53 replaced**

*Replace rule 139.53 with:*

**139.53 Aerodrome limitations**

An applicant for the grant of an aerodrome operator certificate must, if necessary for the safety of aircraft operations at the aerodrome, establish

appropriate limitations on the use of the aerodrome that arise from the aerodrome design or the facilities or services provided at the aerodrome.

**14. Rule 139.55 replaced**

*Replace rule 139.55 with:*

**139.55 Personnel requirements**

(a) An applicant for the grant of an aerodrome operator certificate must engage, employ, or contract—

(1) a senior person identified as the chief executive who—

(i) has the authority within the applicant's organisation to ensure that all activities undertaken by the organisation can be financed and carried out in accordance with the requirements and standards prescribed by this Part; and

(ii) is responsible for ensuring that the organisation complies with the requirements and standards prescribed by this Part; and

(2) a senior person designated as the Airport Manager, or senior persons—

(i) who is, or who are responsible for ensuring that the aerodrome and its operation complies with Subparts A to D; and

(ii) who is, or who are responsible to the chief executive; and

(3) sufficient personnel to operate and maintain the aerodrome and its services and facilities in accordance with the requirements of Subparts A to D.

(b) An applicant for the grant of an aerodrome operator certificate must establish a procedure for initially assessing and for maintaining the competence of personnel required to operate and maintain the aerodrome and its services and facilities.

**15. Rule 139.57 amended**

*(a) In rule 139.57, replace paragraphs (a) and (b) with:*

(a) An applicant for the grant of an aerodrome operator certificate must establish and maintain an aerodrome emergency plan that is designed to minimise the possibility and extent of personal injury and property damage at, or in the vicinity of, the aerodrome in an emergency.

(b) The aerodrome emergency plan must include—

- (1) details of the types of emergencies planned for; and
- (2) procedures for prompt response to the emergencies planned for; and
- (3) sufficient detail to provide adequate guidance to each person who must carry out the plan; and
- (4) details of the agencies involved in the plan and the responsibility and role of each agency; and
- (5) for an aerodrome referred to in rule 139.5(aa)(1), provision for an adequately equipped emergency operations centre and command post for each type of emergency; and
- (6) a description of the equipment that is available for implementing the emergency plan including medical equipment, and details of the location of the equipment; and
- (7) information on names and telephone numbers of offices and persons to be contacted in the case of a particular emergency; and
- (8) a grid map of the aerodrome and its immediate vicinity; and
- (9) procedures to maintain the aerodrome emergency plan in accordance with rule 139.109.

*(b) In rule 139.57(c),—*

- (i) *in the preamble, replace “The applicant shall—” with “The applicant must—”; and*
  - (ii) *delete subparagraph (1); and*
  - (iii) *replace subparagraph (2) with:*
- (2) to the extent practicable, provide for participation by all relevant agencies and personnel in the development of the aerodrome emergency plan.

**16. Rule 139.59 replaced**

*Replace rule 139.59 with:*

**139.59 Rescue and firefighting – category determination**

(a) Except as provided in paragraph (b), an applicant for the grant of an aerodrome operator certificate for an aerodrome referred to in rule 139.5(aa)(1) must determine the aerodrome category for rescue and firefighting as specified in Table 1 according to the largest aeroplane type regularly using the aerodrome.

**Table 1.** Aerodrome category for rescue and firefighting.

Aerodrome category <sup>1</sup>	Aeroplane over-all length <sup>2</sup>	Maximum fuselage width
3	12 m up to but not including 18 m	3 m
4	18 m up to but not including 24 m	4 m
5	24 m up to but not including 28 m	4 m
6	28 m up to but not including 39 m	5 m
7	39 m up to but not including 49 m	5 m
8	49 m up to but not including 61 m	7 m
9	61 m up to but not including 76 m	7 m

10	76 m up to but not including 90 m	8 m
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*1 To categorise the aerodrome according to the largest aeroplane type regularly using the aerodrome, first evaluate the over-all length, and second, the fuselage width of the aeroplane.*

*2 If, after selecting the category appropriate to the over-all length of the aeroplane and the fuselage width of the aeroplane is greater than the maximum width in column (3) for that category, then the aerodrome category for that aeroplane size is actually one category higher.*

(b) The aerodrome category determined under paragraph (a) may be reduced by—

(1) one category if the number of aeroplane movements at the aerodrome of those aeroplanes used to determine the aerodrome category under paragraph (a) is less than 700 movements in the busiest consecutive 3 months of any 12 month period; or

(2) two categories if—

(i) the number of aeroplane movements at the aerodrome of those aeroplanes used to determine the aerodrome category under paragraph (a) are less than 700 movements in the busiest consecutive 3 months of any 12 month period; and

(ii) there is a difference of 3 or more categories between the aerodrome categories determined under paragraph (a) for the range of aeroplane sizes of the aeroplanes using the aerodrome.

(c) An applicant for the grant of an aerodrome operator certificate, other than for an aerodrome specified in paragraph (a), must determine the aerodrome category for rescue and firefighting as follows:

- (1) if the aerodrome serves any turbojet or turbofan aeroplanes with a certified seating capacity of more than 30 passengers engaged in regular air transport operations, the rescue and firefighting category must be the category specified in Table 1 according to the largest aeroplane type regularly using the aerodrome and may be reduced by 2 categories but in any case must not be less than category 4:
- (2) if the aerodrome does not serve any turbojet or turbofan aeroplanes of the kind specified in paragraph (c)(1), but serves non-turbojet or non-turbofan aeroplanes with a certified seating capacity of more than 30 passengers engaged in regular air transport operations, and has more than 700 aeroplane movements of such aeroplanes in the busiest consecutive 3 months of any 12 month period, the aerodrome category must be category 3 or higher:
- (3) if the aerodrome category for rescue and firefighting is not determined in paragraphs (1) or (2), then no category applies.

#### 17. **Rule 139.61 replaced**

*Replace rule 139.61 with:*

#### **139.61 Rescue and firefighting – extinguishing agents**

An applicant for the grant of an aerodrome operator certificate for an aerodrome that is required by rule 139.111 to be provided with rescue and firefighting capability must have the minimum extinguishing agents required for the aerodrome category determined under rule 139.59, as specified in Table 2.

**Table 2.** Minimum usable amounts of extinguishing agents

Aerodrome category	Foam meeting performance level B		Foam meeting performance level C		Complementary agents		
	Water	Discharge rate foam solution/minute	Water	Discharge rate foam solution/minute	Dry chemical powders	Discharge Rate	Or CO2
	(L)	(L)	(L)	(L)	(Kg)	(Kg/second)	(Kg)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	1200	900	820	630	135	2.25	270
4	2400	1800	1700	1100	135	2.25	270
5	5400	3000	3900	2200	180	2.25	360
6	7900	4000	5800	2900	225	2.25	450
7	12100	5300	8800	3800	225	2.25	450
8	18200	7200	12800	5100	450	4.5	900
9	24300	9000	17100	6300	450	4.5	900
10	32300	11200	22280	7900	450	4.5	900

Note:

1. Volume units are litres and mass units are kilograms.
2. The quantities of water shown in columns 2 and 4 are based on the average overall length of aeroplanes in a given category.

### 18. Rule 139.63 replaced

Replace rule 139.63 with:

#### 139.63 Rescue and firefighting – vehicles

(a) An applicant for the grant of an aerodrome operator certificate for an aerodrome that is required by rule 139.111 to be provided with rescue and firefighting capability must have the minimum number of rescue and fire fighting vehicles specified in Table 3 for the aerodrome category determined under rule 139.59.

**Table 3.** Minimum rescue and firefighting vehicles

Aerodrome category determined under rule 139.59	Rescue firefighting vehicles
3	1
4	1

5	1
6	2
7	2
8	3
9	3
10	3

(b) Except as specified in paragraph (c), each vehicle required by paragraph (a) must be equipped for 2-way voice radio communications with at least—

- (1) every other rescue and firefighting vehicle required for the aerodrome; and
- (2) the aerodrome control service or aerodrome flight information service serving the aerodrome; and
- (3) other stations as specified in the applicant's aerodrome emergency plan.

(c) Despite paragraph (b), a rescue and firefighting vehicle is not required to be equipped for 2-way voice radio communications if –

- (1) only 1 vehicle is required; and
- (2) there is no aerodrome control service or flight information service serving the aerodrome; and
- (3) the aerodrome emergency plan does not provide for contact with other stations.

(d) Each vehicle required by paragraph (a) must—

- (1) have a flashing or rotating beacon; and

- (2) be marked in a single conspicuous colour of red or yellow-green.

**19. Rule 139.65 replaced**

*Replace rule 139.65 with:*

**139.65 Rescue and firefighting – personnel requirements**

An applicant for the grant of an aerodrome operator certificate for an aerodrome that is required by rule 139.111 to be provided with rescue and firefighting capability must establish a procedure for ensuring that all rescue and firefighting personnel at the aerodrome—

- (1) are equipped with adequate protective clothing and rescue equipment needed to do their duties; and
- (2) are trained, medically and physically fit, and are competent in the use of the rescue and firefighting equipment; and
- (3) receive recurrent training and regular practices to maintain their competency; and
- (4) are sufficient in number and are readily available to operate the rescue and firefighting vehicle or vehicles and the equipment at maximum capacity; and
- (5) are alerted by siren, alarm, or other means to any existing or impending emergency requiring their assistance.

**20. Rule 139.67 replaced**

*Replace rule 139.67 with:*

**139.67 Rescue and firefighting – response capability**

An applicant for the grant of an aerodrome operator certificate for an aerodrome that is required by rule 139.111 to be provided with rescue and firefighting capability, if required by the Director, must demonstrate the following rescue and firefighting response capability in optimum conditions of visibility and surface conditions:

- (1) within 3 minutes of the initial call, the rescue and firefighting vehicles and personnel needed to discharge foam at a rate of

at least 50 % of the discharge rate required by Table 2 of rule 139.61 for the aerodrome category must reach the furthest point of the movement area from their assigned posts and be in position at that point to apply that amount of foam; and

- (2) any rescue and firefighting vehicles and personnel, other than the first responding vehicles and personnel required to deliver the amounts of extinguishing agents required by Table 2 of rule 139.61 for the aerodrome category must—
  - (i) arrive not more than 4 minutes after the initial call; and
  - (ii) those personnel must ensure that the agent is continuously applied.

**21. New rule 139.67A inserted**

*After rule 139.67, insert:*

**139.67A Rescue and firefighting – communication and alerting system**

- (a) This rule applies after 31 July 2018.
- (b) An applicant for the grant of an aerodrome operator certificate for an aerodrome that is required by rule 139.111 to be provided with rescue and firefighting capability must provide a discrete communication system linking a fire station with the control tower, any other fire station on the aerodrome, and the rescue and fire fighting vehicles.
- (c) Paragraph (a) expires on 1 August 2018.

**22. Rule 139.69 amended**

- (a) *In rule 139.69, in paragraph (a),—*
  - (i) *in the preamble, replace “Each applicant” with “An applicant”; and*
  - (ii) *in the preamble, replace “operating certificate shall provide at their aerodrome” with “operator certificate must provide at the aerodrome”; and*

- (iii) *in subparagraph (1), replace “to prevent” with “for preventing”; and*
  - (iv) *in subparagraph (1), delete “, and safeguards to deter the entry of unauthorised persons or vehicles to the aerodrome operational area”; and*
  - (v) *after subparagraph (1), insert:*
- (1A) safeguards for deterring the entry of unauthorised persons and vehicles to the aerodrome operational area; and

*(b) in rule 139.69, replace paragraph (b) with:*

(b) An applicant for the grant of an aerodrome operator certificate for an aerodrome referred to in rule 139.5(aa) must ensure the safeguards required by paragraphs (a)(1) and (a)(1A)—

- (1) in areas adjacent to the aerodrome operational area to which the public has direct vehicle or pedestrian access—
  - (i) are continuous barriers that may include existing structures, gates and doors with secured or controlled access; and
  - (ii) are at least 1200 millimetres in height; and
- (2) in other areas, are of a construction and height appropriate to prevent incursion by animals likely to endanger aircraft operations.

### **23. Rule 139.71 replaced**

*Replace rule 139.71 with:*

#### **139.71 Wildlife hazard management**

An applicant for the grant of an aerodrome operator certificate must, if any wildlife presents a hazard to aircraft operations at the aerodrome, establish an environmental management programme for minimising or eliminating the wildlife hazard.

**24. Rule 139.73 amended**

*(a) In rule 139.73, replace paragraph (a) with:*

(a) An applicant for the grant of an aerodrome operator certificate must establish a procedure for notifying the aeronautical information service provider—

- (1) of aerodrome data and information; and
- (2) of any limitation established under rule 139.53 on the use of the aerodrome; and
- (3) as soon as practicable, of any change that affects the use of the aerodrome.

*(b) In rule 139.73, delete paragraph (b).*

*(c) In rule 139.73, delete the note that is below paragraph (b).*

**25. Rule 139.75 amended**

*In rule 139.75(a), replace “operating” with “operator”.*

**26. New rules 139.76, 139.76A, 139.76B inserted**

*After rule 139.75, insert:*

**139.76 Movement data reporting**

An applicant for the grant of an aerodrome operator certificate must establish procedures for collecting traffic movement data at the aerodrome on a monthly basis and for reporting that movement data once every 3 months to the Director.

**139.76A Works on aerodrome**

An applicant for the grant of an aerodrome operator certificate must establish procedures, including precautions to be taken, for ensuring that any works carried out on the aerodrome do not endanger aircraft operations.

**139.76B Documentation**

An applicant for the grant of an aerodrome operator certificate must—

- (1) hold copies of relevant documents necessary for the provision and operation of the aerodrome and the associated services and facilities; and
- (2) establish a procedure for controlling the documents required under subparagraph (1) to ensure that—
  - (i) current issues of relevant documents are available to personnel at each location where personnel require access to the documentation; and
  - (ii) every obsolete document is promptly removed from every point of issue; and
  - (iii) the current version of each item of documentation can be identified to prevent the use of superseded material.

**27. Rule 139.77 amended**

*(a) In rule 139.77(a)—*

- (i) in the preamble, replace “operating” with “operator”; and*
- (ii) replace subparagraphs (3), (4), (5) and (6) with:*
  - (3) the duties and responsibilities of the senior person or persons required by rules 139.55(a)(1) and 139.55(a)(2), including matters for which they have responsibility to deal directly with the Director or the Authority on behalf of the organisation; and
  - (4) an organisation chart showing lines of responsibility of the senior person or persons required by rules 139.55(a)(1) and 139.55(a)(2); and
  - (5) any limitations on the use of the aerodrome established under rule 139.53; and

- (6) each current exemption granted to the applicant from any requirement in Subparts A, B, C, or D; and

*(iii) replace subparagraph (8) with:*

- (8) a statement of the aerodrome category for rescue and firefighting determined under rule 139.59 with a description of the extinguishing agents, vehicles and discrete communication system required by rules 139.61, 139.63 and 139.67A, the procedures and personnel required by rule 139.65, and the procedures required by rules 139.111(c)(2) and (3); and

*(iv) after subparagraph (12), insert;*

- (12A) the procedures required by rule 139.76 for the collection and reporting of traffic movement data; and

*(v) replace subparagraph (13) with:*

- (13) the aerodrome maintenance programme required by rule 139.103; and

*(vi) replace subparagraph (15) with:*

- (15) the procedures and precautions required by rule 139.76A for any works on the aerodrome; and

*(vii) delete subparagraph (16); and*

*(viii) after subparagraph (19), insert:*

- (19A) the procedures required by rule 139.76B(2) for management and control of documents necessary for the provision and operation of the aerodrome; and

*(ix) replace subparagraph (20) with:*

- (20) a description of measures taken to comply with the security requirements in Subpart D, including details of the security awareness programme and the procedures required by rule 139.203(d)(8) and (9); and

- (x) *in subparagraph (21), delete “139.203(d)(8) or”; and*
- (xi) *in subparagraph (22), replace “the procedures” with “procedures”; and*
- (b) *In rule 139.77(b), delete “applicant’s”.*

**28. Subpart C heading amended**

*In the heading of Subpart C, after “Requirements”, insert “for Aerodrome”.*

**29. Rule 139.101 replaced**

*Replace rule 139.101 with:*

**139.101 Continued compliance**

A holder of an aerodrome operator certificate must—

- (1) hold at least 1 complete and current copy of the aerodrome exposition required by rule 139.77 on the aerodrome; and
- (2) comply with all procedures, plans, systems and programmes detailed in the exposition; and
- (3) make each applicable part of the exposition available to personnel who require those parts to carry out their duties; and
- (4) continue to meet the standards and comply with the requirements of Subpart B prescribed for aerodrome certification under this Part; and
- (5) notify the Director of any change of address for service, telephone number, or other contact details required by form CAA 24139/01 within 28 days of the change.

**30. Rule 139.102 deleted**

*Delete rule 139.102.*

**31. Rule 139.103 replaced**

*Replace rule 139.103 with:*

**139.103 Aerodrome maintenance**

(a) A holder of an aerodrome operator certificate must establish a maintenance programme, including preventive maintenance if appropriate, for maintaining the aerodrome facilities in a condition that does not impair the safety, security, regularity, or efficiency of aircraft operations.

(b) The maintenance programme must—

- (1) provide for the surface of paved manoeuvring areas to be kept clear of any loose objects or debris that might endanger aircraft operations; and
- (2) provide for the surface of paved runways to be maintained in a condition that provides good surface friction characteristics and low rolling resistance for aircraft; and
- (3) after 31 July 2018, provide for the measurement and provision of real-time surface condition reporting when a runway is contaminated using standardised reporting methods.

**32. Rule 139.105 replaced**

*Replace rule 139.105 with:*

**139.105 Visual aids for navigation –maintenance and checking**

(a) A holder of an aerodrome operator certificate must establish a maintenance programme for the visual aids to navigation that are installed on the aerodrome.

(b) The maintenance programme required by paragraph (a) must include—

- (1) procedures for ensuring that each visual aid for navigation continues to provide reliable and accurate guidance information to the user in accordance with the applicable standards prescribed in this Part; and
- (2) details on the number of lights that may be allowed to be unserviceable in each lighting system to ensure continuity of guidance to the user; and
- (3) procedures for restoring any unserviceable or deteriorated item back into service without undue delay.

**33. Rule 139.107 deleted**

*Delete rule 139.107.*

**34. Rule 139.109 replaced**

*Replace rule 139.109 with:*

**139.109 Aerodrome emergency plan**

A holder of an aerodrome operator certificate must—

- (1) ensure that all aerodrome personnel having duties and aerodrome emergency responsibilities under the holder's aerodrome emergency plan required by rule 139.57 are familiar with their assignments and are properly trained; and
- (2) test the aerodrome emergency plan required by rule 139.57 by conducting either of the following—
  - (i) a full-scale aerodrome emergency exercise at intervals not exceeding two years and special emergency exercises between the full-scale aerodrome emergency exercises to ensure that any deficiencies found during the full-scale aerodrome emergency exercise have been corrected; or
  - (ii) a series of modular tests to be done every 3 years, commencing in the first year and concluding in a full scale aerodrome emergency exercise no more than 3 years after the commencement; and

- (3) review the plan after each of the exercises specified in subparagraph (2) or after an actual emergency, to correct any deficiency found; and
- (4) co-ordinate the aerodrome emergency plan required by rule 139.57 with all organisations and persons who have responsibilities in the plan, including, where appropriate, law enforcement agencies, security providers, rescue and firefighting agencies, medical personnel and organisations, and principal tenants of the aerodrome.

**35. Rule 139.111 replaced**

*Replace rule 139.111 with:*

**139.111 Rescue and firefighting – operational requirements**

(a) Except as provided in paragraph (c), the holder of an aerodrome operator certificate must provide on the aerodrome, rescue and firefighting capability meeting the minimum requirements of rules 139.61 and 139.63 during operations by—

- (1) an aeroplane having a certified seating capacity of more than 30 passengers that is engaged in a regular air transport operation for the carriage of passengers; or
- (2) an aeroplane that is engaged in regular air transport operations where—
  - (i) the aeroplane's point of take-off that immediately precedes the aeroplane landing at the aerodrome, is an aerodrome outside New Zealand; or
  - (ii) the aeroplane's point of landing that immediately follows the aeroplane taking-off from the aerodrome, is an aerodrome outside New Zealand.

(b) Except as provided in paragraph (c), the holder of an aerodrome operator certificate must increase the rescue and firefighting capability to the minimum required for the higher category specified in rules 139.61 and 139.63 if—

- (1) there is an increase in the aeroplane movements or the type of air transport aeroplanes using the aerodrome changes; and
  - (2) the increase in movement or change in aeroplane type results in an increase in the rescue and firefighting category of the aerodrome as specified in rule 139.59.
- (c) Despite paragraphs (a) and (b), the holder of an aerodrome operator certificate may reduce the rescue and firefighting capability to a lower level than the level required for the aerodrome category corresponding to the highest specification aeroplane using the aerodrome if—
- (1) the use of the aerodrome is limited to aeroplanes having a lower specification than the aeroplane used to determine the aerodrome category under rule 139.59; and
  - (2) procedures for, and the persons having the authority to implement, the reductions are included in the exposition required by rule 139.77; and
  - (3) procedures for the recall of the full aerodrome rescue and firefighting capability are included in the exposition required by rule 139.77.
- (d) The holder of an aerodrome operator certificate must not implement any reduction in the rescue and firefighting capability as provided in paragraph (c) until the information is promulgated by the aeronautical information service provider.
- (e) The holder of an aerodrome operator certificate that is required by paragraph (a) to provide rescue and firefighting capability must employ a system of preventive maintenance of its rescue and firefighting vehicle or vehicles to ensure effectiveness of the equipment and compliance with the required response time throughout the life of each vehicle.
- (f) If a rescue and firefighting vehicle that is required by this rule becomes inoperative to the extent that the certificate holder cannot meet the response capability required by rule 139.67, the holder of the aerodrome operator certificate must—

- (1) immediately replace that rescue and firefighting vehicle with a vehicle that enables the certificate holder to meet that capability; and
- (2) if a replacement vehicle required in paragraph (f)(1) is not available immediately, must provide the notification required by rule 139.123; and
- (3) if the response capability required by rule 139.67 is not restored within 72 hours of a required vehicle becoming inoperative, limit air transport operations on the aerodrome to those aeroplanes compatible with the aerodrome category corresponding to the remaining operative rescue and firefighting vehicle or vehicles.

(g) The holder of an aerodrome operator certificate who is required in paragraph (a) to provide rescue and firefighting capability must respond to each aircraft emergency during operations of the kind specified in paragraph (a) with the rescue and firefighting equipment required under this Part and the number of trained personnel that are required to assure an effective operation.

**36. Rule 139.113 amended**

*In rule 139.113 replace “operating” with “operator”.*

**37. Rule 139.115 amended**

*(a) In rule 139.115(a), replace “operating certificate” with “operator certificate”.*

*(b) In rule 139.115(b), replace “certificated under this Part which” with “operating under an aerodrome operator certificate that”.*

**38. Rule 139.117 replaced**

*Replace rule 139.117 with:*

**139.117 Aerodrome inspection programme**

A holder of an aerodrome operator certificate must—

- (1) establish an aerodrome inspection programme for ensuring that the aerodrome and its facilities are maintained as specified under this Part; and
- (2) provide appropriate equipment for use in conducting the aerodrome inspections; and
- (3) establish procedures for ensuring that personnel performing aerodrome inspections are appropriately trained; and
- (4) establish a reporting system for ensuring prompt correction of an unsafe aerodrome condition that is noted during an aerodrome inspection.

**39. Rule 139.119 replaced**

*Replace rule 139.119 with:*

**139.119 Ground vehicles**

- (a) A holder of an aerodrome operator certificate must establish procedures for limiting and controlling access of ground vehicles to the operational area of the aerodrome.
- (b) Under the procedures required by paragraph (a), ground vehicle access to the operational area of the aerodrome must be limited to those vehicles that are necessary for aerodrome or aircraft operations.
- (c) When an aerodrome control service is in operation at the aerodrome, the procedures required by paragraph (a) must—
  - (1) provide for the safe and orderly access to, and operation on the operational area of ground vehicles; and
  - (2) require each ground vehicle operating on the manoeuvring area of the aerodrome to be controlled by—
    - (i) two-way radio communications between the vehicle and the aerodrome control service; or
    - (ii) if the vehicle does not have radio communications, an accompanying escort vehicle that has two-way radio

communications with the aerodrome control service;  
or

- (iii) if it is not practical to have two-way radio communications or an escort vehicle, adequate measures such as signs, signals, or guards for controlling the vehicle.

(d) When an aerodrome control service is not in operation at the aerodrome, the procedures required by paragraph (a) must provide for ground vehicles operating on the operational area of the aerodrome to be controlled by signs or prearranged signals.

(e) The procedures required by paragraph (a) must ensure that each employee, tenant, or contractor who operates a ground vehicle on any portion of the aerodrome which has access to the operational area of the aerodrome is familiar with, and complies with, the procedures established by the certificate holder for the operation of ground vehicles on the aerodrome.

**40. Rule 139.121 replaced**

*Replace rule 139.121 with:*

**139.121 Protection of navigation aids and ATS facilities**

A holder of an aerodrome operator certificate must—

- (1) prevent any construction or activity on the aerodrome or surrounding area that the certificate holder has authority over, that could have an adverse effect on the operation of any electronic or visual navigation aid or air traffic service facility for the aerodrome; and
- (2) prevent, as far as it is within the certificate holder's authority, any interruption of electronic or visual navigation aid or air traffic service facility for the aerodrome.

**41. Rule 139.123 replaced**

*Replace rule 139.123 with:*

**139.123 Aerodrome condition notification**

A holder of an aerodrome operator certificate must, in accordance with the procedure required by rule 139.75, notify the aeronautical information service provider, as soon as practicable (for the issue of a NOTAM), of any aerodrome operational condition at the aerodrome that may affect the safe operation of aircraft.

**42. Rule 139.125 replaced**

*Replace rule 139.125 with:*

**139.125 Unsafe conditions**

A holder of an aerodrome operator certificate must establish procedures for ensuring that aircraft operations are restricted, or if necessary prohibited, on any part of the aerodrome where an unsafe condition may exist.

**43. Rule 139.127 amended**

*In rule 139.127, replace “operating certificate” in each place where it appears with “operator certificate”.*

**44. Rule 139.129 deleted**

*Delete rule 139.129.*

**45. New rule 139.131 inserted**

*After rule 139.129 insert:*

**139.131 Aeronautical Study**

(a) A holder of an aerodrome operator certificate must monitor operations and conduct an aeronautical study for any significant change or significant changes that may affect the safety of aerodrome operations.

(b) For the purpose of paragraph (a), a significant change includes:

- (1) a significant increase in aerodrome aircraft traffic volumes;  
or
- (2) a significant change in type of aircraft operations; or

- (3) a significant change in the aerodrome physical characteristics; or
  - (4) an increase in accidents or incidents at or in the vicinity of the aerodrome; or
  - (5) when annual aircraft movements at the aerodrome are forecast to exceed, for 3 consecutive years,—
    - (i) 40,000 or more combined VFR and IFR movements; or
    - (ii) 7,500 or more IFR movements; or
    - (iii) 60,000 or more combined VFR and IFR movements of which 9,000 or more are IFR movements; or
    - (iv) 15,000 or more IFR movements; or
    - (v) 100,000 or more combined VFR and IFR movements.
- (c) The holder of an aerodrome operator certificate must, immediately after completing an aeronautical study—
- (1) review the operation of the aerodrome and, if necessary, make any changes that are required in the interests of aviation safety, to the operator's exposition, in accordance with the procedure for amending the exposition; and
  - (2) provide the results of the aeronautical study to the Director.
- (d) If practicable, the holder of an aerodrome operator certificate must conduct the aeronautical study prior to the significant change.
- (e) If it is not practicable for the holder of an aerodrome operator certificate to conduct an aeronautical study prior to the significant change, then the certificate holder must conduct the aeronautical study as soon as practicable after the change.

**46. Rule 139.201 deleted**

Delete rule 139.201.

**47. Rule 139.203 amended**

(a) In rule 139.203(a),—

- (i) replace “aerodrome operating” with “aerodrome operator”; and
- (ii) replace “protection” with “Protection.

(b) In rule 139.203(d), in the preamble, replace “A holder of an aerodrome operating” with “The holder of an aerodrome operator”.

(c) In rule 139.203(d)(7),—

- (i) after “(d)(4)” insert “(d)(4A),”; and
- (ii) replace “for preventing” with “to prevent”.

(d) In rule 139.203(f), in the preamble, replace “operating” with “operator”.

(e) In rule 139.203(g), replace “operating” with “operator”.

(f) Delete rule 139.203(h).

(g) Delete rule 139.203(i).

**48. Rule 139.205 amended**

In rule 139.205,—

- (i) replace “operating certificate” in each instance where it appears with “operator certificate; and
- (ii) delete paragraph (g).

**49. Rule 139.351 amended**

- (a) *In rule 139.351(a), in the preamble, replace “No person may” with “A person must not”.*
- (b) *In rule 139.351(a)(2), replace “:” with “.”.*
- (c) *In rule 139.351(b),—*
  - (i) *replace “any” with “a”; and*
  - (ii) *after “under”, insert “rule”.*
- (d) *In rule 139.351(c), replace “one” each time it appears with “1”.*

**50. Rule 139.353 amended**

- (a) *In rule 139.353(a)(1), after “under” insert “rule”.*
- (b) *In rule 139.353(a)(2), delete “to the Ministry of Economic Development”.*
- (c) *In rule 139.353(b)(2), replace “, and according to the conditions of a” with “a radio”.*
- (d) *In rule 139.353.(d)(1), replace “with safeguards to ensure that the service does not transmit” with “without transmitting”.*
- (e) *In rule 139.353(d)(3), replace “basic weather reporting under” with “providing a basic weather report in accordance with rule”.*
- (f) *In rule 139.353(e)(1),—*
  - (i) *replace “according to” with “in accordance with rule”; and*
  - (ii) *replace “issued under” with “issued by the Director under the Act and in accordance with”.*
- (g) *In rule 139.353(e)(3), replace “Part 119” with “rule 119.73”.*

- (h) *In rule 139.353(g), replace “sub-part” with “Subpart”.*
- (i) *In rule 139.353(h)(5), replace “issued under Part 174” with “issued by the Director under the Act and Part 174”.*
- (j) *In rule 139.353(h)(6), replace “under” with “provided in accordance with rule”.*

**51. Rule 139.355 amended**

*In rule 139.355, replace the heading with:*

**139.355 UNICOM Service Operator Requirements**

**52. Rule 139.357 replaced**

*Replace rule 139.357 with:*

**139.357 Notification of UNICOM or AWIB service information**

A person intending to provide a UNICOM or AWIB service must, at least 90 days before commencing the service, provide the following information to the AIS provider for publication in the AIPNZ:

- (1) the location, call sign, and radio frequency for the service; and
- (2) the identification of the aerodrome or aerodromes that the service is intended to serve; and
- (3) the operational hours; and
- (4) details of the services provided; and
- (5) any other relevant operational information; and
- (6) administrative details including—
  - (i) the name of the service provider, including postal address and, where available, email, telephone, and facsimile numbers; and

- (ii) the name, telephone number, postal address and, where available, email, and facsimile numbers, of a person who is responsible for providing updates to the published information and for requesting NOTAM action as may be required.

**53. Rule 139.359 deleted**

*Delete rule 139.359.*

**54. New Subpart G inserted**

*After rule 139.359, insert:*

**Subpart G — Certification requirements for qualifying aerodrome operator certificate**

**139.401 Personnel requirements**

- (a) An applicant for the grant of a qualifying aerodrome operator certificate must engage, employ or contract—
  - (1) a senior person identified as the chief executive who—
    - (i) has the authority within the applicant's organisation to ensure that all activities undertaken by the organisation can be financed and carried out in accordance with the requirements and standards prescribed by this Part; and
    - (ii) is responsible for ensuring that the organisation complies with the requirements and standards prescribed by this Part; and
  - (2) a senior person designated as the Airport Manager, or senior persons –
    - (i) who is, or who are responsible for ensuring that the aerodrome and its operation complies with Subparts A, G and H; and

- (ii) who is, or who are responsible to the chief executive, if the senior person is a person other than the chief executive; and
  - (3) sufficient personnel to operate and maintain the aerodrome and its services and facilities in accordance with the requirements of Subparts A, G and H.
- (b) An applicant for the grant of a qualifying aerodrome operator certificate must establish a procedure for initially assessing and for maintaining the competence of personnel required to operate and maintain the aerodrome and its services and facilities.
- (c) To avoid doubt, the chief executive position and the senior person positions referred to in paragraph (a)(2) may be held by 1 person.

### **139.403 Aerodrome limitations**

An applicant for the grant of a qualifying aerodrome operator certificate must, if necessary for the safety of aircraft operations at the aerodrome, establish appropriate limitations on the use of the aerodrome that arise from the aerodrome design or the facilities or services provided at the aerodrome.

### **139.405 Public protection**

An applicant for the grant of a qualifying aerodrome operator certificate must provide at the aerodrome—

- (1) safeguards for preventing animals interfering with movements on the aerodrome; and
- (2) safeguards for deterring the entry of unauthorised persons and vehicles to the aerodrome operational area; and
- (3) reasonable protection of persons and property from aircraft operations.

### **139.407 Notification of aerodrome data and information**

An applicant for the grant of a qualifying aerodrome operator certificate must establish a procedure for notifying the aeronautical information service provider—

- (1) of aerodrome data and information; and
- (2) of any limitation established under rule 139.403 on the use of the aerodrome; and
- (3) as soon as practicable, of any change that affects the use of the aerodrome.

### **139.409 Aerodrome internal quality assurance**

(a) An applicant for the grant of a qualifying aerodrome operator certificate must establish an internal quality assurance system for ensuring compliance with, and the adequacy of, the procedures required by this Part.

(b) The senior person who is responsible for internal quality assurance must have direct access to the chief executive on matters affecting the safety of aircraft operations and the performance of the aerodrome services and facilities.

### **139.411 Movement data reporting**

An applicant for the grant of a qualifying aerodrome operator certificate must establish procedures for collecting traffic movement data at the aerodrome on a monthly basis and for reporting that movement data once every 3 months to the Director.

### **139.413 Works on aerodrome**

An applicant for the grant of a qualifying aerodrome operator certificate must establish procedures, including precautions to be taken, for ensuring that any works carried out on the aerodrome do not endanger aircraft operations.

### **139.415 Documentation**

An applicant for the grant of a qualifying aerodrome operator certificate must—

- (1) hold copies of relevant documents necessary for the provision and operation of the aerodrome and the associated services and facilities; and

- (2) establish a procedure for controlling the documents required under paragraph (1) to ensure that—
  - (i) current issues of relevant documents are available to personnel at each location where personnel need access to the documentation; and
  - (ii) every obsolete document is promptly removed from every point of issue; and
  - (iii) the current version of each item of documentation can be identified to prevent the use of superseded material.

### **139.417 Qualifying aerodrome operator exposition**

- (a) An applicant for the grant of a qualifying aerodrome operator certificate must provide the Director with an exposition which must contain—
  - (1) a statement signed by the chief executive, on behalf of the applicant's organisation, confirming that the exposition and any included manuals—
    - (i) define the organisation and demonstrate its means and methods for ensuring ongoing compliance with this Part; and
    - (ii) is to be complied with at all times; and
  - (2) the titles and names of the senior person or persons required by rules 139.401(a)(1) and 139.401(a)(2); and
  - (3) the duties and responsibilities of the senior person or persons required by rules 139.401(a)(1) and 139.401(a)(2) including matters for which they have responsibility to deal directly with the Director or the Authority on behalf of the organisation; and
  - (4) if applicable, an organisation chart showing lines of responsibility of the senior person or persons required by rules 139.401(a)(1) and 139.401(a)(2); and

- (5) any limitations on the use of the aerodrome established under rule 139.403; and
  - (6) a description of the safeguards for public protection required by rule 139.405; and
  - (7) the procedures required by rule 139.407 for the notification of aerodrome data and information; and
  - (8) the internal quality assurance system required by rule 139.409; and
  - (9) the procedures required by rule 139.411 for the collection and reporting of traffic movement data; and
  - (10) the procedures and precautions required by rule 139.413 for any works on the aerodrome; and
  - (11) the procedures required by rule 139.415(2) for management and control of documents necessary for the provision and operation of the aerodrome; and
  - (12) procedures for controlling, amending, and distributing the exposition.
- (b) The exposition must, in addition to the matters specified in that paragraph, include any requirements or procedures that are necessary to manage risks relating to any of the following matters that have been identified in the aeronautical study required by rule 139.21:
- (1) aerodrome design requirements including physical characteristics, obstacle limitation surfaces, visual aids, equipment and installations, and runway end safety areas:
  - (2) aerodrome emergency plan:
  - (3) rescue and firefighting:
  - (4) wildlife hazard management:
  - (5) aerodrome maintenance:

- (6) visual aids for navigation – maintenance and checking:
  - (7) aerodrome air traffic services:
  - (8) apron management services:
  - (9) aerodrome inspection programme:
  - (10) ground vehicles:
  - (11) protection of navigation aids and ATS facilities:
  - (12) aerodrome condition notification.
- (c) An exposition required under this subpart may adopt, by reference, a requirement in Subparts B and C for the purpose of mitigating or managing a risk identified in the aeronautical study required by rule 139.21 or rule 139.457.
- (d) The exposition must remain acceptable to the Director.

**55. *New Subpart H inserted***

*After rule 139.417, insert:*

## **Subpart H — Operating Requirements for qualifying aerodrome**

### **139.451 Continued compliance**

A holder of a qualifying aerodrome operator certificate must—

- (1) hold at least 1 complete and current copy of the aerodrome exposition required by rule 139.417 on the aerodrome; and
- (2) comply with all procedures, plans, systems, and programmes detailed in the exposition; and
- (3) make each applicable part of the exposition available to personnel who require those parts to carry out their duties; and

- (4) continue to meet the standards and comply with the requirements of Subpart G prescribed for qualifying aerodrome certification under this Part; and
- (5) notify the Director of any change of address for service, telephone number, or other contact details required by form CAA 24139/01 within 28 days of the change.

### **139.453 Unsafe conditions**

A holder of a qualifying aerodrome operator certificate must establish procedures for ensuring that aircraft operations are restricted, or if necessary prohibited, on any part of the aerodrome where an unsafe condition may exist.

### **139.455 Changes to certificate holder's organisation**

- (a) Each holder of a qualifying aerodrome operating certificate must ensure that its exposition is amended to remain a current description of the aerodrome and its associated plans, programmes, services, systems, procedures, and facilities.
- (b) The certificate holder must ensure that any amendments made to the holder's exposition meet the applicable requirements of this Part and comply with the amendment procedures contained in the holder's exposition.
- (c) The certificate holder must provide the Director with a copy of each amendment to the holder's exposition as soon as practicable after its incorporation into the exposition.
- (d) Where a certificate holder proposes to make a change to any of the following, prior notification to and acceptance by the Director is required:
  - (1) the Chief Executive:
  - (2) the listed senior persons.
- (e) The Director may prescribe conditions under which a certificate holder may operate during or following any of the changes specified in paragraph (d).

(f) A certificate holder must comply with any conditions prescribed under paragraph (e).

(g) Where any of the changes referred to in this rule requires an amendment to the aerodrome operating certificate, the certificate holder must forward the certificate to the Director as soon as practicable.

(h) The certificate holder must make such amendments to the holder's exposition as the Director may consider necessary in the interest of safety.

### **139.457 Aeronautical Study**

(a) A holder of a qualifying aerodrome operator certificate must monitor operations and conduct an aeronautical study for any significant change that may affect the safety of aerodrome operations.

(b) For the purpose of paragraph (a), a significant change includes:

- (1) a significant increase in aerodrome aircraft traffic volumes;  
or
- (2) a significant change in type of aircraft operations; or
- (3) a significant change in the aerodrome physical characteristics; or
- (4) an increase in accidents or incidents at or in the vicinity of the aerodrome; or
- (5) when annual aircraft movements at the aerodrome are forecast to exceed, for 3 consecutive years,—
  - (i) 40,000 or more combined VFR and IFR movements; or
  - (ii) 7,500 or more IFR movements; or
  - (iii) 60,000 or more combined VFR and IFR movements of which 9,000 or more are IFR movements; or

- (iv) 15,000 or more IFR movements; or
  - (v) 100,000 or more combined VFR and IFR movements.
- (c) The holder of a qualifying aerodrome operator certificate must, immediately after completing an aeronautical study—
- (1) review the operation of the aerodrome and, if necessary, make any changes that are required in the interests of aviation safety, to the operator's exposition, in accordance with the procedure for amending the exposition; and
  - (2) provide the results of the aeronautical study to the Director.
- (d) If practicable, the holder of a qualifying aerodrome operator certificate must conduct the aeronautical study prior to the significant change.
- (e) If it is not practicable for the holder of a qualifying aerodrome operator certificate to conduct an aeronautical study prior to the significant change, then the certificate holder must conduct the aeronautical study as soon as practicable after the change.

**56. *New Subpart I inserted***

*After rule 139.457, insert:*

**Subpart I Operating requirements – non-certificated aerodromes**

**139.501 Application of Subpart**

- (a) Except as provided in paragraph (b), this Subpart applies to an aerodrome operator.
- (b) This subpart does not apply to:
  - (1) an aerodrome operator certificate holder:
  - (2) a qualifying aerodrome operator certificate holder:

- (3) the operator of an aerodrome that is used or intended to be used exclusively by aircraft engaged in agricultural operations.

### **139.503 Unsafe conditions**

An aerodrome operator to which this subpart applies must establish procedures to ensure that aircraft movements are restricted or prohibited on parts of the aerodrome where an unsafe condition exists.

### **139.505 Reporting traffic volumes**

An aerodrome operator to which this subpart applies must—

- (a) provide the Director with an annual report of traffic movement data for the aerodrome; and
- (b) if requested in writing by the Director, collect and report traffic movement data for the aerodrome.

### **57. *New Appendix B inserted***

*After Appendix A, insert:*

## **Appendix B — Reference code**

- (a) An aerodrome reference code — code number and letter — which is selected for aerodrome planning purposes must be determined in accordance with the characteristics of the aeroplane for which an aerodrome facility is intended.
- (b) The aerodrome reference code numbers and letters must have the meanings assigned to them in Table B-1.
- (c) The code number for element 1 must be determined from column 1 of Table B-1 selecting the code number corresponding to the highest value of the aeroplane reference field lengths of the aeroplanes for which the runway is intended

*Note. — The determination of the aeroplane reference field length is solely for the selection of a code number and is not intended to influence the actual runway length provided.*

(d) The code letter for element 2 must be determined from column 3 of Table B-1 by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span, whichever gives the higher code letter for the aeroplanes that the runway is intended to serve.

**Table B-1. Aerodrome reference code**

Code element 1		Code element 2		
Code number	Aeroplane reference field length	Code letter	Wingspan	Outer main gear wheel span
(1)	(2)	(3)	(4)	(5)
1	Less than 800 m	A	Up to but not including 15 m	Up to but not including 4.5 m
2	800 m up to but not including 1200 m	B	15 m up to but not including 24 m	4.5 m up to but not including 6 m
3	1200 m up to but not including 1800 m	C	24 m up to but not including 36 m	6 m up to but not including 9 m
4	1800 m and over	D	36 m up to but not including 52 m	9 m up to but not including 14 m
		E	52 m up to but not including 65 m	9 m up to but not including 14 m
		F	65 m up to but not including 80 m	14 m up to but not including 16 m

*Note: The outer main gear wheel span in column 5 is the distance between the outside edges of the main landing gear wheels .*

**58. New Appendix C inserted**

*After Appendix B, insert:*

## Appendix C — Physical Characteristics

### C.1 Surface of runways

(a) The surface of a runway must be constructed without irregularities that would impair the runway surface friction characteristics or otherwise adversely affect the take-off or landing of an aeroplane.

(b) A paved runway must be so constructed or resurfaced as to provide friction characteristics at or above the minimum friction level specified by the Director.

### C.2 Runway strips

A runway and any associated stopways must be included in a strip.

#### C.2.1 Length of runway strips

A strip must extend before the threshold and beyond the end of the paved runway or stopway for a distance of at least—

- (1) 60 m where the aerodrome reference code number in Table B1 is 3 or 4; or
- (2) 30 m where the aerodrome reference code number in Table B1 is 2; or
- (3) 10 m where the aerodrome reference code number in Table B1 is 1.

#### C.2.2 Width of runway strips

A strip must extend laterally on each side of the centre line of the runway and its extended centre line throughout the length of the strip to the minimum distance determined in Table C-1.

**Table C-1** Minimum Runway Strip Distance

Aerodrome Reference Code Number	Runway Type	Distance
3 or 4	Precision approach	150 m

3 or 4	Non-precision instrument approach	75 m
3 or 4	Non-instrument approach	75 m
1 or 2	Precision approach	75 m
1 or 2	Non-precision instrument approach	75 m
2	Non-instrument approach	40 m
1	Non-instrument approach	30 m

### C.2.3 Objects on runway strips

(a) No fixed object, other than visual aids required for air navigation purposes and satisfying the relevant frangibility requirements must be permitted on a runway strip—

- (1) within 77.5 m of the runway centre line of a precision approach runway category I, II or III where in Table B-1 of Appendix B, the code number is 4 and the code letter is F; or
- (2) within 60 m of the runway centre line of a precision approach runway category I, II or III wherein Table B-1 of Appendix B, the code number is 3 or 4; or
- (3) within 45 m of the runway centre line of a precision approach runway category I where in Table B-1 of Appendix B, the code number is 1 or 2.

(b) No mobile object must be permitted on those parts of the runway strip as defined in paragraph (a) during use of the runway for landing or take-off.

### C.2.4 Grading of runway strips

The surface of that portion of a strip that abuts a runway, shoulder or stopway must be flush with the surface of the runway, shoulder or stopway.

### C.3 Runway turn pads

Where the end of a runway is not served by a taxiway or a taxiway turnaround and where in Table B-1 of Appendix B the code letter is D, E or F, a runway turn pad must be provided to facilitate a 180-degree turn of aeroplanes.

#### C.3.1 Design of a runway turn pad

The design of a runway turn pad must be such that, when the cockpit of the aeroplane for which the turn pad is intended remains over the turn pad marking, the clearance distance between any wheel of the aeroplane landing gear and the edge of the turn pad must be not less than 4.5 m.

#### C.3.2 Surface of runway turn pads

The surface of a runway turn pad must not have surface irregularities that may cause damage to an aeroplane using the turn pad.

### C.4 Stopways

A stopway must have the same width as the runway with which it is associated.

### C.5 Taxiways

The design of a taxiway for an aerodrome that is referred to in rule 139.5(aa) must be such that, when the cockpit of an aeroplane for which the taxiway is intended remains over the taxiway centre line markings, the clearance distance between the outer main wheel of the aeroplane and the edge of the taxiway must not be less than determined in Table C-2 below:

**Table C-2.** Taxiway Edge Clearance Distances

Code Letter	Clearance
A	1.5 m
B	2.25 m
C	3 m if the taxiway is intended to be used by aeroplanes with a wheel base less than 18 m; or

	4.5 m if the taxiway is intended to be used by aeroplanes with a wheel base equal to or greater than 18 m
D	4.5 m
E	4.5 m
F	4.5 m

*Note: Wheel base means the distance from the centre of the nose gear to the geometric centre of the main gear.*

### **C.6 Taxiway bridges**

The width of that portion of a taxiway bridge capable of supporting aeroplanes, as measured perpendicularly to the taxiway centre line, must not be less than the width of the graded area of the strip provided for that taxiway, unless a proven method of lateral restraint is provided which must not be hazardous for aeroplanes for which the taxiway is intended.

### **C.7 Taxiway strips**

A taxiway, other than an aircraft stand taxilane, must be included in a strip.

### **C.8 Holding positions**

- (a) A runway-holding position must be established—
- (1) on the taxiway, at the intersection of a taxiway and a runway; and
  - (2) at an intersection of a runway with another runway when the former runway is part of a standard taxi-route.
- (b) A runway-holding position must be established on a taxiway if the location or alignment of the taxiway is such that a taxiing aircraft or vehicle can infringe an obstacle limitation surface or interfere with the operation of radio navigation aids.

(c) A road-holding position must be established at an intersection of a road with a runway.

**59. *New Appendix D inserted***

*After Appendix C, insert:*

**Appendix D — Obstacle Restriction and Removal**

**D.1 Obstacle limitation surfaces**

(a) The following obstacle limitation surfaces must be established for a runway—

- (1) conical surface; and
- (2) inner horizontal surface; and
- (3) approach surface; and
- (4) transitional surfaces.

(b) The following additional obstacle limitation surfaces must be established for a precision approach runway category II or III—

- (1) inner approach surface; and
- (2) inner transitional surfaces; and
- (3) balked landing surface.

(c) For a non-instrument runway, new objects or extensions of existing objects must not be permitted above an approach or transitional surface except when the new object or extension would be shielded by an existing immovable object, or an aeronautical study determines that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

(d) For a non-precision approach runway, new objects or extensions of existing objects must not be permitted above an approach surface within 3000 m of the inner edge or above a transitional surface except when the new object or extension would be shielded by an existing immovable object, or an aeronautical study determines that the object

would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

(e) For a precision approach runway fixed objects must not be permitted above the inner approach surface, the inner transitional surface or the balked landing surface, except for frangible objects which because of their function must be located on the strip. Mobile objects must not be permitted above these surfaces during the use of the runway for landing.

(f) For a precision approach runway, new objects or extensions of existing objects must not be permitted above an approach surface or a transitional surface except when the new object or extension would be shielded by an existing immovable object, or an aeronautical study determines that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

## **D.2 Take-off climb surface**

(a) A take-off climb surface must be established for a runway meant for take-off:

(b) New objects or extensions of existing objects must not be permitted above a take-off climb surface except when the new object or extension would be shielded by an existing immovable object, or an aeronautical study determines that the object would not adversely affect the safety or significantly affect the regularity of operations of aircraft.

### **60. *New Appendix E inserted***

*After Appendix D, insert:*

## **Appendix E — Visual Aids for Navigation**

### **E.1 Wind direction Indicators**

(a) A wind direction indicator (windsock) must be located adjacent to each paved runway threshold.

(b) If a paved runway is intended to be used at night at least one of the wind direction indicators required by paragraph (a) must be illuminated.

## **E.2 Markings**

### **E.2.1 Colour**

- (a) Runway markings must be white.
- (b) Taxiway markings, runway turn pad markings and aircraft stand markings must be yellow.
- (c) Apron safety lines must be of a conspicuous colour which must contrast with that used for aircraft stand markings.

### **E.2.2 Runway markings**

A runway designation marking, centre line marking and threshold marking must be provided on all paved runways.

### **E.2.3 Interruption of runway markings**

- (a) At an intersection of 2 or more runways the markings of the more important runway, except for the runway side stripe marking, must be displayed and the markings of the other runway(s) must be interrupted. The runway side stripe marking of the more important runway may be either continued across the intersection or interrupted.
- (b) At an intersection of a runway and taxiway the markings of the runway must be displayed and the markings of the taxiway interrupted, except that runway side stripe markings may be interrupted.

### **E.2.4 Transverse stripe**

Where a runway threshold is displaced from the extremity of a paved runway or where the extremity of a paved runway is not square with the runway centre line, a transverse stripe must be added to the threshold marking.

### **E.2.5 Arrows**

Where a paved runway threshold is permanently displaced, arrows must be provided on the portion of the runway before the displaced threshold.

### **E.2.6 Aiming point marking**

An aiming point marking must be provided at each approach end of a paved instrument runway where the aerodrome reference code number is 2, 3 or 4 as determined in accordance with Appendix B.

### **E.2.7 Touchdown zone marking**

A touchdown zone marking must be provided in the touchdown zone of a paved precision approach runway where the aerodrome reference code number is 2, 3 or 4 as determined in accordance with Appendix B.

### **E.2.8 Runway side stripe marking**

A runway side stripe marking must be provided between the thresholds of a paved runway where there is a lack of contrast between the runway edges and the shoulders or the surrounding terrain.

### **E.2.9 Taxiway centre line marking**

(a) Taxiway centre line marking must be provided on a paved taxiway, de/anti-icing facility and apron where the aerodrome reference code number is 3 or 4, as determined in accordance with Appendix B, in such a way as to provide continuous guidance between the runway centre line and aircraft stands.

(b) Taxiway centre line marking must be provided on a paved runway when the runway is part of a standard taxi-route and—

- (1) there is no runway centre line marking; or
- (2) where the taxiway centre line is not coincident with the runway centre line.

(c) Where provided, enhanced taxiway centre line marking must be installed at each taxiway and runway intersection.

### **E.2.10 Runway turn pad marking**

Where a paved runway turn pad is provided, a runway turn pad marking must be provided for continuous guidance to enable the aeroplane to complete a 180 degree turn and align with the runway centre line.

### **E.2.11 Runway-holding position marking**

On a paved runway or taxiway a runway-holding position marking must be displayed along a runway-holding position.

### **E.2.12 VOR aerodrome check-point marking**

When a VOR aerodrome check-point is established, it must be indicated by a VOR aerodrome check-point marking.

### **E.2.13 Road-holding position marking**

A road-holding position marking must be provided at all paved road entrances to a runway.

### **E.2.14 Mandatory instruction marking**

Where it is impracticable to install a mandatory instruction sign, a mandatory marking must be provided on the surface of the pavement.

### **E.2.15 Information marking**

Where an information sign would normally be installed and it is impracticable to install, an information marking must be displayed on the surface of the pavement.

## **E.3 Lights**

### **E.3.1 Elevated approach lights**

(a) Elevated approach lights and their supporting structures must be frangible except that, in that portion of the approach lighting system beyond 300 m from the threshold —

- (1) where the height of a supporting structure exceeds 12 m, the frangibility requirement must apply to the top 12 m only; and
- (2) where a supporting structure is surrounded by non-frangible objects, only that part of the structure that extends above the surrounding objects must be frangible.

(b) When an approach light fixture or supporting structure is not in itself sufficiently conspicuous, it must be suitably marked.

### **E.3.2 Elevated lights**

Elevated runway, stopway and taxiway lights must be frangible. Their height must be sufficiently low to preserve clearance for propellers and for the engine pods of jet aircraft.

### **E.3.3 Surface lights**

Light fixtures inset in the surface of runways, stopways, taxiways, and aprons must be so designed and fitted as to withstand being run over by the wheels of an aircraft without damage either to the aircraft or to the lights themselves.

### **E.3.4 Light intensity and control**

(a) The intensity of runway lighting must be adequate for the minimum conditions of visibility and ambient light in which use of the runway is intended, and compatible with that of the nearest section of the approach lighting system when provided.

(b) A suitable intensity control must be incorporated to allow for adjustment of the light intensity to meet the prevailing conditions. Separate intensity controls or other suitable methods must be provided to ensure that the following systems, when installed, can be operated at compatible intensities:

- (1) approach lighting system:
- (2) runway edge lights:
- (3) runway threshold lights:
- (4) runway end lights:
- (5) runway centre line lights:
- (6) runway touchdown zone lights:
- (7) taxiway centre line lights.

### **E.3.5 Aerodrome beacon**

An aerodrome beacon must be provided at an aerodrome intended for use at night if 1 or more of the following conditions exist:

- (1) aircraft navigate predominantly by visual means:
- (2) reduced visibilities are frequent:
- (3) it is difficult to locate the aerodrome from the air due to surrounding lights or terrain.

### **E.3.6 Approach lighting systems**

(a) Where physically practicable, a simple approach lighting system must be provided to serve a non-precision approach runway, except when the runway is used only in conditions of good visibility or sufficient guidance is provided by other visual aids.

(b) Where physically practicable, a precision approach category I lighting system must be provided to serve a precision approach runway category I.

(c) A precision approach category II and III lighting system must be provided to serve a precision approach runway category II or III.

### **E.3.7 Visual approach slope indicator systems**

(a) A visual approach slope indicator system must be provided to serve the approach to a runway whether or not the runway is served by other visual approach aids or by non-visual aids, where 1 or more of the following conditions exist:

- (1) the runway is used by turbojet, turbofan, or other aeroplanes with similar approach guidance requirements:
- (2) the pilot of any type of aeroplane may have difficulty in judging the approach due to—
  - (i) inadequate visual guidance such as is experienced during an approach over water or featureless terrain by day or in the absence of sufficient extraneous lights in the approach area by night; or
  - (ii) misleading information such as is produced by deceptive surrounding terrain or runway slopes:

- (3) the presence of objects in the approach area may involve serious hazard if an aeroplane descends below the normal approach path, particularly if there are no non-visual or other visual aids to give warning of such objects:
  - (4) physical conditions at either end of the runway present a serious hazard in the event of an aeroplane undershooting or overrunning the runway:
  - (5) terrain or prevalent meteorological conditions are such that the aeroplane may be subjected to unusual turbulence during approach.
- (b) PAPI, T-VASIS or AT-VASIS must be provided where the aerodrome reference code number is 3 or 4 as determined in accordance with Appendix B, when 1 or more of the conditions specified in paragraphs (a)(1) to (5) exist.
- (c) PAPI or APAPI must be provided where the aerodrome reference code number is 1 or 2 as determined in accordance with Appendix B when 1 or more of the conditions specified in paragraphs (a) (1) to (5) exist.

### **E.3.8 Obstacle protection surface**

- (a) An obstacle protection surface must be established when it is intended to provide a visual approach slope indicator system.
- (b) New objects or extensions of existing objects must not be permitted above an obstacle protection surface except when the new object or extension would be shielded by an existing immovable object.
- (c) Existing objects above an obstacle protection surface must be removed except when the object is shielded by an existing immovable object, or an aeronautical study determines that the object would not adversely affect the safety of operations of aeroplanes.
- (d) Where an aeronautical study indicates that an existing object extending above an obstacle protection surface could adversely affect the safety of operations of aeroplanes 1 or more of the following measures must be taken:

- (1) suitably raise the approach slope of the visual approach slope indicator system:
- (2) reduce the azimuth spread of the visual approach slope indicator system so that the object is outside the confines of the beam:
- (3) displace the axis of the visual approach slope indicator system and its associated obstacle protection surface by no more than 5 degrees:
- (4) suitably displace the runway threshold:
- (5) where paragraph (4) is found to be impracticable, suitably displace the visual approach slope indicator system upwind of the runway threshold to provide an increase in threshold crossing height equal to the height of the object penetration.

### **E.3.9 Runway edge lights and runway end lights**

Runway edge lights and runway end lights must be provided for a runway intended for use at night or for a precision approach runway intended for use by day or night.

### **E.3.10 Runway threshold and wing bar lights**

- (a) Runway threshold lights must be provided for a runway equipped with runway edge lights, except on a non-instrument or non-precision approach runway where the threshold is displaced and wing bar lights are provided.
- (b) Wing bar lights must be provided on a non- instrument or non-precision approach runway where the threshold is displaced and runway threshold lights are required, but are not provided.

### **E.3.11 Runway centre line lights**

- (a) Runway centre line lights must be provided on a precision approach runway category II or III.
- (b) Runway centre line lights must be provided on a runway intended to be used for take-off with an operating minimum below a runway visual range of 400 m.

### **E.3.12 Runway touchdown zone lights**

Touchdown zone lights must be provided in the touchdown zone of a precision approach runway category II or III.

### **E.3.13 Stopway lights**

Stopway lights must be provided for a stopway intended for use at night.

### **E.3.14 Taxiway centre line lights**

(a) Taxiway centre line lights must be provided on an exit taxiway, taxiway, de/anti-icing facility and apron intended for use in runway visual range conditions of less than 350 m in such a manner as to provide continuous guidance between the runway centre line and aircraft stands, except that these lights need not be provided where the traffic density is light and centre line marking provides adequate guidance.

(b) Taxiway centre line lights must be provided on a runway forming part of a standard taxi-route and intended for taxiing in runway visual range conditions of less than 350 m, except that these lights need not be provided where the traffic density is light and centre line marking provides adequate guidance.

### **E.3.15 Taxiway edge lights**

(a) Taxiway edge lights must be provided at the edges of a holding bay, de/anti-icing facility, apron and other similar areas intended for use at night and on a taxiway not provided with taxiway centre line lights and intended for use at night except that taxiway edge lights need not be provided where, considering the nature of the operations, adequate guidance can be achieved by surface illumination or other means.

(b) Taxiway edge lights must be provided on a runway forming part of a standard taxi-route and intended for taxiing at night where the runway is not provided with taxiway centre line lights.

### **E.3.16 Runway turn pad lights**

Runway turn pad lights must be provided for continuous guidance on a runway turn pad intended for use in runway visual range conditions of less than 350 m, to enable an aeroplane to complete a 180 degree turn and align with the runway centre line.

### **E.3.17 Stop bars**

(a) A stop bar must be provided at every runway-holding position serving a runway when it is intended that the runway will be used in runway visual range conditions of less than 550 m, except where—

- (1) appropriate aids and procedures are available to assist in preventing inadvertent incursions of traffic onto the runway; or
- (2) operational procedures exist to limit, in runway visual range conditions of less than 550 m, the number of—
  - (i) aircraft on the manoeuvring area to 1 at a time; and
  - (ii) vehicles on the manoeuvring area to the essential minimum.

(b) Where there is more than 1 stop bar associated with a taxiway or runway intersection, only one must be illuminated at any given time.

### **E.3.18 Intermediate holding position lights**

Except where a stop bar has been installed, intermediate holding position lights must be provided at an intermediate holding position intended for use in runway visual range conditions of less than 350 m.

### **E.3.19 Runway guard lights**

Runway guard lights must be provided at each intersection of a taxiway with a runway intended for use in—

- (1) runway visual range conditions of less than 550 m where a stop bar is not installed; and
- (2) runway visual range conditions between 550 m and 1200 m where the traffic density is heavy.

### **E.3.20 Visual docking guidance system**

A visual docking guidance system must be provided when it is intended to indicate, by a visual aid, the precise positioning of an aircraft on an

aircraft stand and other alternative means, such as marshallers, are not practicable.

### **E.3.21 Road-holding position light**

A road-holding position light must be provided at each road-holding position serving a runway when it is intended that the runway will be used in runway visual range conditions of less than 350 m.

## **E.4 Signs and markers**

### **E.4.1 General**

Signs must be provided to convey a mandatory instruction, information on a specific location or destination on a movement area or to provide other information to meet the requirements of a surface movement guidance and control system.

### **E.4.2 Lighting**

Signs must be illuminated when intended for use—

- (a) in runway visual range conditions of less than 800 m; or
- (b) at night in association with an instrument runway; or
- (c) at night in association with a non-instrument runway where the code number is 3 or 4.

### **E.4.3 Mandatory instruction signs**

- (a) A mandatory instruction sign must be provided at a controlled aerodrome to identify a location beyond which an aircraft taxiing or vehicle must not proceed unless authorised by the aerodrome control tower.
- (b) Mandatory instruction signs must include runway designation signs, category I, II or III holding position signs, runway-holding position signs, road-holding position signs and 'NO ENTRY' signs.
- (c) A runway holding position established in accordance with Appendix C.8(a) for a non-instrument, non-precision approach or take-off runway must be supplemented at a taxiway/runway or runway/runway intersection with a runway designation sign.

(d) Where a single runway holding position has been established in accordance with rule C.8(a) of Appendix C for a precision approach runway, the runway holding position marking must be supplemented with a runway designation sign.

(e) Where 2 or 3 runway holding positions have been established in accordance with rule C.8(a) of Appendix C for a precision approach runway, the runway holding position closest to the runway must be supplemented with a runway designation sign, and those runway holding positions furthest from the runway must be supplemented with a category I, II or III holding position sign.

(f) A runway-holding position established in accordance with rule C.8(b) of Appendix C must be supplemented with a runway-holding position sign.

(g) A 'NO ENTRY' sign must be provided when entry into an area is prohibited.

#### **E.4.4 Information signs**

(a) An information sign must be provided where there is an operational need to identify by a sign, a specific location, or routing (direction or destination) information.

(b) Information signs include direction signs, location signs, destination signs, runway exit signs, runway vacated signs and intersection take-off signs.

(c) A runway exit sign must be provided where there is an operational need to identify a runway exit.

(d) A runway vacated sign must be provided where the exit taxiway is not provided with taxiway centre line lights and there is a need to indicate to a pilot leaving a runway the perimeter of the ILS/MLS critical/sensitive area or the lower edge of the inner transitional surface, whichever is farther from the runway centre line.

(e) A combined location and direction sign must be provided when it is intended to indicate routing information prior to a taxiway intersection.

(f) A direction sign must be provided when there is an operational need to identify the designation and direction of taxiways at an intersection.

(g) A location sign must be provided in conjunction with a runway designation sign except at a runway or runway intersection.

(h) A location sign must be provided in conjunction with a direction sign, except that it may be omitted where an aeronautical study indicates that it is not required.

#### **E.4.5 VOR aerodrome check-point sign**

When a VOR aerodrome check-point is established, it must be indicated by a VOR aerodrome check-point sign.

#### **E.4.6 Road-holding position sign**

A road-holding position sign must be provided at all road entrances to a runway.

#### **E.4.7 Markers**

Markers must be frangible. Those located near a runway or taxiway must be sufficiently low to preserve clearance for propellers and for the engine pods of jet aircraft.

### **61. *New Appendix F inserted***

*After Appendix E, insert:*

## **Appendix F — Visual Aids for Denoting Obstacles**

### **F.1 Objects to be marked and/or lighted**

(a) A fixed obstacle that extends above an approach surface within 3000 m of the inner edge or above a transitional surface must be marked and, if the runway is used at night, lighted, except that—

- (1) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle; or
- (2) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its

height above the level of the surrounding ground does not exceed 150 m; or

- (3) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; or
- (4) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.

(b) A fixed object that extends above an obstacle protection surface must be marked and, if the runway is used at night, lighted.

(c) Vehicles and other mobile objects, excluding aircraft and aircraft servicing equipment and vehicles used only on aprons, on the movement area of an aerodrome are obstacles and must be marked and, if the vehicles and aerodrome are used at night or in conditions of low visibility, lighted.

(d) Elevated aeronautical ground lights within the movement area must be marked so as to be conspicuous by day. Obstacle lights must not be installed on elevated ground lights or signs in the movement area.

(e) All obstacles within the distance specified in Table F-1, from the centre line of a taxiway, an apron taxiway, or aircraft stand taxilane must be marked and, if the taxiway, apron taxiway, or aircraft stand taxilane is used at night, lighted.

**Table F-1.** Markings and Lighting Requirements for Obstacles

Aerodrome Reference Code Letter	Taxiway other than aircraft stand taxilane, centre line to object (metres)	Aircraft stand taxilane centre line to object (metres)
A	16.25	12
B	21.5	16.5
C	26	24.5
D	40.5	36

E	47.5	42.5
F	57.5	50.5

## **F.2 Marking of objects**

(a) All fixed objects to be marked must, whenever practicable, be coloured, but if this is not practicable, markers or flags must be displayed on or above them, except that objects that are sufficiently conspicuous by their shape, size, or colour need not be otherwise marked.

(b) All mobile objects to be marked must be coloured or marked with display flags.

## **F.3 Use of markers**

Markers displayed on or adjacent to objects must be located in conspicuous positions so as to retain the general definition of the object and must be recognizable in clear weather from a distance of at least 1000 m for an object to be viewed from the air and 300 m for an object to be viewed from the ground in all directions in which an aircraft is likely to approach the object. The shape of markers must be distinctive to the extent necessary to ensure that they are not mistaken for markers employed to convey other information, and they must be such that the hazard presented by the object they mark is not increased.

## **F.4 Use of flags**

(a) Flags used to mark objects must be displayed around, on top of, or around the highest edge of, the object. When flags are used to mark extensive objects or groups of closely spaced objects, they must be displayed at least every 15 m. Flags must not increase the hazard presented by the object they mark.

(b) Flags used to mark fixed objects must not be less than 0.6 m square and flags used to mark mobile objects, not less than 0.9 m square.

(c) Flags used to mark mobile objects must consist of a chequered pattern, each square having sides of not less than 0.3 m. The colours of

the pattern must contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red and white must be used, except where such colours merge with the background.

## **F.5 Lighting of objects**

- (a) The presence of objects which must be lighted, as specified in Appendix F.1, must be indicated by low-, medium- or high-intensity obstacle lights, or a combination of such lights.
- (b) Type C low-intensity obstacle lights must be displayed on vehicles and other mobile objects excluding aircraft.
- (c) Type D low-intensity obstacle lights must be displayed on follow-me vehicles.

## **62. New Appendix G inserted**

*After Appendix F, insert:*

# **Appendix G — Visual Aids for Denoting Restricted Use Areas**

## **G.1 Closed runways and taxiways**

A closed marking must be displayed on a runway or taxiway, or portion thereof, which is permanently closed to the use of all aircraft.

## **G.2 Non-load-bearing surfaces**

Shoulders for taxiways, holding bays and aprons and other non-load-bearing surfaces which cannot readily be distinguished from load-bearing surfaces and which, if used by aircraft, might result in damage to the aircraft must have the boundary between such areas and the load-bearing surface marked by a side stripe marking.

## **G.3 Unserviceable areas**

Unserviceability markers must be displayed wherever any portion of a taxiway, apron or holding bay is unfit for the movement of aircraft but it

is still possible for aircraft to bypass the area safely. On a movement area used at night, unserviceability lights must be used.

### **63. *New Appendix H inserted***

*After Appendix G, insert:*

## **Appendix H — Electrical Systems**

### **H.1 Power supply systems for air navigation facilities**

(a) Adequate primary power supply must be available at aerodromes for the safe functioning of air navigation facilities.

(b) For aerodromes that are referred to in rule 139.5(aa)(1), the design and provision of electrical power systems for the aerodrome visual and radio navigation aids must be such that an equipment failure will not leave pilots with inadequate visual and non-visual guidance or misleading information.

### **H.2 Visual aids**

(a) For a precision approach runway, a secondary power supply capable of meeting the requirements specified in Table H-1 for the appropriate category of precision approach runway must be provided. Electric power supply connections to those facilities for which secondary power is required must be so arranged that the facilities are automatically connected to the secondary power supply on failure of the primary source of power.

(b) For a runway meant for take-off in runway visual range conditions of less than 800 m, a secondary power supply capable of meeting the relevant requirements of Table H-1 must be provided.

### **H.3 System design**

(a) For a runway meant for use in runway visual range conditions of less than 550 m, the electrical systems for the power supply, lighting and control of the lighting systems included in Table H-1 must be so designed that an equipment failure will not leave the pilot with inadequate visual guidance or misleading information.

(b) Where the secondary power supply of an aerodrome is provided by the use of duplicate feeders, such supplies must be physically and electrically separate so as to ensure the required level of availability and independence.

(c) Where a runway forming part of a standard taxi-route is provided with runway lighting and taxiway lighting, the lighting systems must be interlocked to preclude the possibility of simultaneous operation of both forms of lighting.

#### H.4 Monitoring

Where lighting systems are used for aircraft control purposes, such systems must be monitored automatically so as to provide an indication of any fault which may affect the control functions. This information must be automatically relayed to the air traffic service unit.

**Table H-1.** Secondary power supply requirements

Runway	Lighting aids requiring power	Maximum switch-over time	Notes
Precision approach category I	Approach lighting system	15 seconds	c a,c c a a
	Runway edged	15 seconds	
	Visual approach slope indicators	15 seconds	
	Runway threshold	15 seconds	
	Runway end	15 seconds	
	Essential taxiway	15 seconds	
	Obstacle	15 seconds	
Precision approach category II/III	Inner 300 m of the approach lighting system	1 second	a
	Other parts of the approach lighting system	15 seconds	
	Obstacle	15 seconds	
	Runway edge	15 seconds	
	Runway threshold	1 second	
	Runway end	1 second	
	Runway centre line	1 second	
	Runway touchdown zone	1 second	
	All stop bars	1 second	
Essential taxiway	15 seconds		
Runway meant for take-off in	Runway edge	15 seconds	b
	Runway end	1 second	
	Runway centre line	1 second	

runway visual range conditions less than a value of 550 m	All stop bars	1 second	a
	Essential taxiway	15 seconds	a
	Obstacle	15 seconds	

*Notes:*

- a. Supplied with secondary power when their operation is essential to the safety of flight operation.*
- b. One second where no runway centre line lights are provided.*
- c. One second where the approaches are over hazardous or precipitous terrain.*