



Civil Aviation Rules

Part 139, Initial Issue

Aerodromes – Certification, Operation and Use

These rules are made by the Minister of Transport under section 52 of the Civil Aviation Act 2023 after having certified the rules in accordance with clause 8 of Schedule 1 of that Act.

Made at Wellington on

This 13th day of December 2024

A handwritten signature in black ink, appearing to read 'Simeon Brown'.

by Hon Simeon Brown

Minister of Transport

Rule Objective

The objective of Part 139 is to set standards, specifications, restrictions, and requirements for the issue and exercise of an Aerodrome certificate under the Civil Aviation Act 2023, and to ensure New Zealand meets and maintains applicable ICAO safety and security requirements for the certification, operation and use of aerodromes.

Part 139 prescribes the requirements for—

- the certification and operation of aerodromes;
- the security measures applicable to aerodromes;
- the use of aerodromes by aircraft operators;
- the provision of UNICOM and AWIB services.

Part 139 prescribes specific requirements for the certification (entry standards), operation (continued operations), and safety audit (surveillance) of aerodromes. Part 139 also details required security measures for aerodrome certificate holders.

Effective date of rule

Part 139 comes into force on 5 April 2025

Administering Agency

The administering agency responsible for administering these rules is the Civil Aviation Authority of New Zealand.

Availability of rules

Civil Aviation Rules are available from—

CAA website: <http://www.aviation.govt.nz/>

Freephone: 0800 GET RULES (0800 438 785)

List of Rules

Subpart A — General	8
139.1 Purpose	8
139.3 Definitions	8
139.5 Requirement for aerodrome operator certificate	8
139.5A Requirement for qualifying aerodrome operator certificate	9
139.7 Application for certificate	9
139.9 Grant of certificate	10
139.11 Duration of certificate	10
139.13 Renewal of certificate	10
139.15 <i>Reserved</i>	11
139.17 Deviations	11
139.19 Requirements for non-certificated aerodromes	11
 Subpart AA — Determination of qualifying aerodrome	 11
139.21 Aeronautical study	11
139.23 Qualifying aerodrome operator determination	14
139.25 Determination to be advised	15
139.27 Effective date of determination	15
139.29 Revocation of determination	15
 Subpart B — Certification Requirements	 16
139.51 Aerodrome design requirements	16
139.53 Aerodrome limitations	18
139.55 Personnel requirements	18
139.57 Aerodrome emergency plan	19
139.59 Rescue and firefighting – category determination	20
139.61 Rescue and firefighting – extinguishing agents	22
139.63 Rescue and firefighting – vehicles	23
139.65 Rescue and firefighting – personnel requirements	24
139.67 Rescue and firefighting – response capability	25
139.67A Rescue and firefighting – communication and alerting system	25
139.69 Public protection	26
139.71 Wildlife hazard management	26
139.73 Notification of aerodrome data and information	27
139.75 Safety management	27
139.76 Movement data reporting	27

139.76A	Works on aerodrome.....	27
139.76B	Documentation.....	27
139.77	Aerodrome certification exposition.....	28
Subpart C — Operating Requirements for Aerodrome		30
139.101	Continued compliance	30
139.102	<i>Reserved</i>	31
139.103	Aerodrome maintenance	31
139.105	Visual aids for navigation –maintenance and checking	31
139.107	Assessment of runway condition and provision of runway condition report.....	32
139.107B	Training and competency of personnel for assessment of runway condition and provision of runway condition report	33
139.109	Aerodrome emergency plan	33
139.111	Rescue and firefighting – operational requirements.....	34
139.113	Aerodrome aircraft traffic management	36
139.115	Apron management service.....	36
139.117	Aerodrome inspection programme.....	37
139.119	Ground vehicles.....	37
139.121	Protection of navigation aids and ATS facilities.....	38
139.123	Aerodrome condition notification.....	38
139.125	Unsafe conditions	39
139.127	Changes to certificate holder's organisation.....	39
139.129	<i>Reserved</i>	40
139.131	Aeronautical Study	40
Subpart D — Aerodrome and Installation Security		41
139.201	<i>Reserved</i>	41
139.203	Requirements for Tier 1 security designated aerodromes	41
139.205	Requirements for non-security designated aerodromes	45
139.207	Prohibited actions affecting security	46
139.209	Airport Identity Cards.....	46
Subpart E — Reserved		48
Subpart F – UNICOM and AWIB Services		48
139.351	Provision of UNICOM and AWIB Services	48
139.353	UNICOM and AWIB Service Requirements	48
139.355	UNICOM Service Operator Requirements	51
139.357	Notification of UNICOM or AWIB service information	51

Subpart G — Certification requirements for qualifying aerodrome operator certificate	52
139.401 Personnel requirements.....	52
139.403 Aerodrome limitations	53
139.405 Public protection.....	53
139.407 Notification of aerodrome data and information.....	54
139.409 Safety management.....	54
139.411 Movement data reporting.....	54
139.413 Works on aerodrome.....	54
139.415 Documentation.....	54
139.417 Qualifying aerodrome operator exposition	55
Subpart H — Operating Requirements for qualifying aerodrome	57
139.451 Continued compliance	57
139.453 Unsafe conditions	58
139.455 Changes to certificate holder's organisation.....	58
139.457 Aeronautical Study	59
Subpart I — Operating requirements – non-certificated aerodromes	60
139.501 Application of Subpart.....	60
139.503 Unsafe conditions	60
139.505 Reporting traffic volumes	61
Appendix A—Aerodrome physical characteristics	62
A.1 Physical characteristics for RESA	62
Appendix B — Reference code	63
Table B–1. Aerodrome reference code.....	63
Appendix C — Physical Characteristics	64
C.1 Surface of runways	64
C.2 Runway strips	65
C.2.1 Length of runway strips	65
C.2.2 Width of runway strips	65
C.2.3 Objects on runway strips.....	66
C.2.4 Grading of runway strips	66
C.3 Runway turn pads	66
C.3.1 Design of a runway turn pad.....	66
C.3.2 Surface of runway turn pads	66
C.4 Stopways.....	67

C.5	Taxiways.....	67
C.6	Taxiway bridges.....	67
C.7	Taxiway strips.....	68
C.8	Holding positions.....	68
Appendix D — Obstacle Restriction and Removal		68
D.1	Obstacle limitation surfaces.....	68
D.2	Take-off climb surface.....	69
Appendix E — Visual Aids for Navigation		70
E.1	Wind direction Indicators.....	70
E.2	Markings.....	70
E.2.1	Colour.....	70
E.2.2	Runway markings.....	70
E.2.3	Interruption of runway markings.....	70
E.2.4	Transverse stripe.....	70
E.2.5	Arrows.....	71
E.2.6	Aiming point marking.....	71
E.2.7	Touchdown zone marking.....	71
E.2.8	Runway side stripe marking.....	71
E.2.9	Taxiway centre line marking.....	71
E.2.10	Runway turn pad marking.....	72
E.2.11	Runway-holding position marking.....	72
E.2.12	VOR aerodrome check-point marking.....	72
E.2.13	Road-holding position marking.....	72
E.2.14	Mandatory instruction marking.....	72
E.2.15	Information marking.....	72
E.3	Lights.....	72
E.3.1	Elevated approach lights.....	72
E.3.2	Elevated lights.....	73
E.3.3	Surface lights.....	73
E.3.4	Light intensity and control.....	73
E.3.5	Aerodrome beacon.....	74
E.3.6	Approach lighting systems.....	74
E.3.7	Visual approach slope indicator systems.....	74
E.3.8	Obstacle protection surface.....	75
E.3.9	Runway edge lights and runway end lights.....	76
E.3.10	Runway threshold and wing bar lights.....	76
E.3.11	Runway centre line lights.....	76

E.3.12	Runway touchdown zone lights	77
E.3.13	Stopway lights	77
E.3.14	Taxiway centre line lights	77
E.3.15	Taxiway edge lights	77
E.3.16	Runway turn pad lights	77
E.3.17	Stop bars	78
E.3.18	Intermediate holding position lights.....	78
E.3.19	Runway guard lights	78
E.3.20	Visual docking guidance system.....	78
E.3.21	Road-holding position light	79
E.4	Signs and markers.....	79
E.4.1	General.....	79
E.4.2	Lighting	79
E.4.3	Mandatory instruction signs.....	79
E.4.4	Information signs	80
E.4.5	VOR aerodrome check-point sign.....	81
E.4.6	Road-holding position sign.....	81
E.4.7	Markers.....	81
Appendix F — Visual Aids for Denoting Obstacles		81
F.1	Objects to be marked and/or lighted	81
F.2	Marking of objects	82
F.3	Use of markers.....	83
F.4	Use of flags.....	83
F.5	Lighting of objects.....	83
Appendix G — Visual Aids for Denoting Restricted Use Areas		84
G.1	Closed runways and taxiways.....	84
G.2	Non-load-bearing surfaces	84
G.3	Unserviceable areas	84
Appendix H — Electrical Systems		84
H.1	Power supply systems for air navigation facilities	84
H.2	Visual aids	84
H.3	System design	85
H.4	Monitoring.....	85
Table H-1. Secondary power supply requirements		85

Subpart A — General

139.1 Purpose

This part prescribes—

- (1) rules governing the certification and operation of aerodromes; and
- (2) rules for security at certificated aerodromes; and
- (3) *reserved*
- (4) rules for providing and operating UNICOM services and AWIB services.

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 owner of the land forming that aerodrome.

Registered owner means the registered owner identified on the register as defined in the Land Transfer Act 2017.

139.5 Requirement for aerodrome operator certificate

(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
- (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.
- (b) An aerodrome operator that is not required to hold an aerodrome operator certificate may apply for an aerodrome operator certificate.

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.

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 73 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.

139.9 Grant of certificate

- (a) The Director, in accordance with section 75 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 75(1)(a) and 75(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 78(1) 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.

139.11 Duration of certificate

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 5 years after the date on which the certificate is granted.

139.13 Renewal of certificate

- (d) 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.

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

139.15 *Reserved*

139.17 *Deviations*

(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.

(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.

(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.

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

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.

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 453 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.

Subpart B — Certification Requirements

139.51 Aerodrome design requirements

(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) An applicant for the grant of an aerodrome operator certificate must ensure that a runway end safety area that complies with the physical characteristics prescribed in appendix A.1 is provided at each end of a runway at the aerodrome if—

- (1) the runway is used for regular air transport services operating to or from New Zealand; or
- (2) the aerodrome operator certificate is first issued after 12 October 2006 and the runway is used for regular air transport services by aeroplanes that have a seating configuration of more than 30 seats excluding any required crew member seat; or
- (3) the runway is commissioned after 12 October 2006 to be used for regular air transport services by aeroplanes that have a seating configuration of more than 30 seats excluding any required crew member seat; or
- (4) (4 the runway is used for regular air transport services by aeroplanes that have a seating configuration of more than 30 seats excluding any required crew member seat and—
 - (i) either the landing distance available or the length of the runway strip is extended to a distance or length that is more

- than 15 metres greater than the respective distance or length that was published for the runway immediately before 12 October 2006; or
- (ii) the runway is upgraded to an instrument runway after 12 October 2006.
- (c) The RESA provided at the aerodrome must be acceptable to the Director.
- (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) Appendices C, D, F, G, and H; and
 - (ii) Appendices E.1, E.2, E.3 and E.4; and
 - (2) acceptable to the Director.
- (e) Paragraph (d) applies only to areas on an aerodrome that are used by 1 or more aeroplanes—
- (1) 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) having a certificated seating capacity of more than 30 passengers that are engaged in regular air transport operations for the carriage of passengers.

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.

139.55 Personnel requirements

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

- (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 applicant’s 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 responsible for the system for safety management required under rule 139.75; and
 - (iii) who is or who are ultimately 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.

(aa) The senior person referred to in paragraph (a)(2)(ii) must be able to demonstrate competency and experience relevant to the management of safety systems and the activities of the certificate holder.

(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.

139.57 Aerodrome emergency plan

(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.

(c) The applicant must,

- (1) *Reserved*
- (2) to the extent practicable, provide for participation by all relevant agencies and personnel in the development of the aerodrome emergency plan.

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 ¹	Aeroplane over-all length ²	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

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.

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 chemicals powder s	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	2430 0	9000	1710 0	6300	450	4.5	900
10	3230 0	11200	2228 0	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.*

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.

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.

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.

139.67A Rescue and firefighting – communication and alerting system

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.

139.69 Public protection

(a) An applicant for the grant of an aerodrome operator certificate must provide at the aerodrome—

(1) safeguards for preventing inadvertent entry of animals to the movement area; and

(1A) safeguards for deterring the entry of unauthorised persons and vehicles to the aerodrome operational area; and

(2) reasonable protection of persons and property from aircraft blast.

(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.

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.

139.73 Notification of aerodrome data and information

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.

139.75 Safety management

An applicant for the grant of an aerodrome operator certificate must establish, implement, and maintain a system for safety management in accordance with rule 100.3.

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.

139.77 Aerodrome certification exposition

(a) An applicant for the grant of an 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) are to be complied with at all times; and
- (1A) the documentation required by rule 100.3(b) to establish and maintain the system for safety management; and
- (2) the titles and names of the senior person or persons required by rules 139.55(a)(1) and (2); and
- (3) the duties and responsibilities of the senior person or persons required by rules 139.55(a)(1) and (2), including—
 - (i) matters for which they have responsibility to deal directly with the Director or the Authority on behalf of the organisation; and
 - (ii) responsibilities for safety management; and
- (4) an organisation chart showing lines of responsibility of the senior person or persons required by rules 139.55(a)(1) and (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 the requirements of Subparts A, B, C, or D; and
- (6A) information identifying the lines of safety responsibility within the organisation; and
- (7) the aerodrome emergency plan required by rule 139.57; and
- (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
- (9) a description of the safeguards for public protection required by rule 139.69; and
- (10) the environmental management programme when required by rule 139.71; and
- (11) the procedures required by rule 139.73 for the notification of aerodrome data and information; and
- (12) *reserved*
- (12A) the procedures required by rule 139.76 for the collection and reporting of traffic movement data; and
- (13) the aerodrome maintenance programme required by rule 139.103; and
- (14) the procedures required by rule 139.105 for the preventive maintenance and checking of the aerodrome visual aids for navigation; and
- (15) the procedures and precautions required by rule 139.76A for any works on the aerodrome; and

- (16) *reserved*
 - (17) the aerodrome inspection programme, procedures and reporting system required by rule 139.117; and
 - (18) the procedures required by rule 139.119 for the control of ground vehicles; and
 - (19) the procedures required by rule 139.125 for limiting aircraft operations if an unsafe aerodrome condition occurs; and
 - (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
 - (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 rules 139.203(d)(8) and (9); and
 - (21) the security training programme required by rule 139.205(c); and
 - (22) procedures for controlling, amending and distributing the exposition.
- (b) The applicant’s exposition must be acceptable to the Director.

Subpart C — Operating Requirements for Aerodrome

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 the approved form within 28 days of the change.

139.102 Reserved

139.103 Aerodrome maintenance

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

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.

139.107 Assessment of runway condition and provision of runway condition report

(a) A holder of an aerodrome operator certificate must ensure that the assessment of the runway condition and the provision of a runway condition report –

- (1) is in accordance with –
 - (i) chapter 4 of the ICAO Circular 355 Assessment, Measurement and Reporting of Runway Conditions; and
 - (ii) (ii) the runway condition assessment matrix which produces the runway condition code as contained in the AIPNZ;
- (2) is in an equivalent format acceptable to the Director.

(b) The holder of an aerodrome operator certificate referred to in paragraph (a) for a controlled aerodrome must ensure that for an aircraft performing an air transport operation under Part 121, the runway condition report for conditions other than dry or wet runway –

- (1) is compiled and produced each calendar day immediately before the first aircraft takes off or lands at the aerodrome; and
- (2) is amended –
 - (i) when there is a change in the conditions since the last report was made; and
 - (ii) immediately before an aircraft takes off or lands at the aerodrome; and
- (3) is issued in a timely manner to operators.

(c) The holder of an aerodrome operator certificate referred to in paragraph (a) for an uncontrolled aerodrome must ensure that for an aircraft performing an air transport operation under Part 121, the runway condition report

- (1) is compiled –
 - (i) each calendar day immediately before the aircraft takes off or lands at the aerodrome; and
 - (ii) at civil evening twilight if additional take-off and landing of aircraft are scheduled; and
- (2) is available for issue in a timely manner upon prior agreement with the aircraft operator.
- (3) For the purposes of paragraph (b)(2)(i), a change in the conditions includes –
 - (i) when the runway conditions have changed significantly due to meteorological conditions but excluding a change from dry to wet runway, or wet to dry runway; or
 - (ii) following a report of poor braking action and further assessment of runway condition resulting in different runway condition codes.

139.107B Training and competency of personnel for assessment of runway condition and provision of runway condition report

The holder of an aerodrome operator certificate must ensure that personnel who perform the task of assessing the runway condition and providing a runway condition report are suitably trained and competent to perform those tasks.

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.

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.

139.113 Aerodrome aircraft traffic management

Each holder of an aerodrome operator certificate must ensure the provision of an aerodrome flight information service or an aerodrome control service or both at their aerodrome when so required by the Director in the interest of safety.

139.115 Apron management service

(a) Each holder of an aerodrome operator certificate must ensure that the aerodrome is provided with an appropriate apron management service, when such a service is warranted by the volume of traffic and operating conditions.

(b) When an aerodrome control service is in operation at an aerodrome operating under an aerodrome operator certificate that has an apron management service, and that aerodrome control service does not participate in the apron management service, the certificate holder must facilitate the transition of aircraft between the apron management service and the aerodrome control service.

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.

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 person 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.

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.

139.123 Aerodrome condition notification

A holder of an aerodrome operator certificate must, in accordance with the procedure required by rule 139.73, 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.

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.

139.127 Changes to certificate holder's organisation

(a) A holder of an aerodrome operator certificate must ensure that the exposition is amended so that it remains a current description of the aerodrome and its associated plans, programmes, services, systems, procedures, and facilities.

(b) The certificate holder must ensure that any amendment made to its exposition meets the applicable requirements of this Part and complies with the amendment procedures contained in its exposition.

(c) The certificate holder must forward to the Director for retention a copy of each amendment to its exposition as soon as practicable after the amendment is incorporated into its exposition.

(d) A certificate holder must obtain the approval of the Director before changing any of the following:

- (1) the chief executive;
- (2) the listed senior persons;
- (3) the system for safety management, if the change is a material change.

(e) The Director may impose conditions under which a certificate holder must operate during or following any of the changes specified in paragraph (d).

(f) The certificate holder must comply with any conditions imposed by the Director under paragraph (e).

(g) If any change referred to in this rule requires an amendment to the aerodrome operator certificate, the certificate holder must forward the

certificate to the Director for endorsement of the change 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 interests of safety.

139.129 Reserved

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.

Subpart D — Aerodrome and Navigation Installation Security

139.201 *Reserved*

139.203 Requirements for Tier 1 security designated aerodromes

Barrier requirements

- (a) A holder of an aerodrome operator certificate issued for a Tier 1 security designated aerodrome must, in addition to complying with the requirements in rule 139.69 (Public Protection), provide safeguards to prevent inadvertent unauthorised access and to deter intentional unauthorised access, to any airside security area or security enhanced area within the aerodrome.
- (b) The safeguards required by paragraph (a) must—
- (1) consist of fences, gates, doors and other barriers between public and airside security areas or security enhanced areas with adequate locking or control systems; and
 - (2) ensure control of any duct, drain or tunnel giving access to any airside security area or security enhanced area.
- (c) The construction and height of each barrier required by paragraph (b)(1) must, considering the surrounding topography, provide an

effective measure against penetration of any airside security area or security enhanced area and must in no case be less than 2440 millimetres in height.

Other requirements

(d) The holder of an aerodrome operator certificate issued for a Tier 1 security designated aerodrome must—

- (1) designate an isolated aircraft parking position at the aerodrome for the parking of an aircraft that is known or believed to be the subject of unlawful interference, or which for other security reasons needs isolation from normal aerodrome activities; and
- (2) provide and maintain lighting, and emergency lighting in the event of failure of the normal lighting system, on any parking areas at the aerodrome used at night by aeroplanes having a certified seating capacity of 30 or more passengers that are engaged in air transport operations for the carriage of passengers; and
- (3) provide lighting, or have portable lighting available within 30 minutes, on any designated isolated aircraft parking area at the aerodrome intended to be used at night; and
- (4) provide (see paragraph (d) in the definition of 'space requirement' in section 218 of the Act) the following areas at the aerodrome for the searching of passengers, crew and baggage:
 - (i) screening points for the searching of international passengers, crew, and baggage, before aircraft boarding;
 - (ii) sterile areas where international passengers and crew subject to searching are prevented from having access to unauthorised articles or contact with unsearched persons;
 - (iii) areas for the separation of arriving passengers and crew from departing passengers and crew during international deplaning to prevent arriving, transit, and transfer passengers and crew having contact with any person who has been subject to searching; and

- (4A) when considered necessary by the Minister or the Director, provide (see paragraph (d) in the definition of 'space requirement' in section 218 of the Act) screening points at the aerodrome for the searching of persons, items, substances, and vehicles entering and within security enhanced areas; and
- (5) when considered necessary by the Minister, or the Director in any case to respond to a security threat, provide (see paragraph (d) in the definition of 'space requirement' in section 218 of the Act) screening points at the aerodrome of the kind required by paragraph (d)(4) (for the searching of international passengers, crew and their baggage) for the searching of domestic passengers, crew and their baggage; and
- (6) ensure that concession areas at the aerodrome that are situated in an area accessible to searched passengers are designed in such a way that they provide access control measures sufficient to prevent delivery to any searched person of—
- (i) any firearm; or
 - (ii) any other dangerous or offensive weapon or instrument of any kind; or
 - (iii) any ammunition; or
 - (iv) any explosive substance or device, or any injurious substance or device of any kind that could be used to endanger the safety of an aircraft or of the persons in an aircraft; and
- (7) design all areas required by paragraphs (d)(4), (d)(4A), (d)(5), and (d)(6) in such a way that they provide access control measures sufficient to prevent any unauthorised persons from entering the area; and
- (8) establish a security training programme and procedures for ensuring that every person who is employed, engaged, or contracted by the certificate holder has the appropriate level of security awareness applicable to the person's function; and

- (9) establish procedures for identifying, reporting to the Director, and dealing with, breaches of and deficiencies in, any security procedures established by the holder and any enactment relating to security at the aerodrome; and
 - (10) make provision for the security of services including, but not limited to, energy supplies, communications, sewerage and water supplies, in order to minimise the risk of such services being used to interfere unlawfully with aviation operations; and
 - (11) when so required by the Director, affix signs at the perimeter of airside security areas or security enhanced areas within the aerodrome; and
 - (12) establish procedures for ensuring that—
 - (i) unauthorised vehicles do not enter airside security areas or security enhanced areas; and
 - (ii) unauthorised vehicles, or vehicles that appear suspicious, that are found within an airside security area or security enhanced area are appropriately dealt with.
- (e) The training programme required by paragraph (d)(8) must include—
- (1) applicable segments for initial training and recurrent training; and
 - (2) knowledge testing or competency assessment as appropriate for the training conducted.
- (f) The holder of an aerodrome operator certificate must ensure that each segment required by paragraph (e)(i)—
- (1) includes a syllabus that is acceptable to the Director; and
 - (2) is conducted in a structured and coordinated manner by a person authorised by the certificate holder.
- (g) The holder of an aerodrome operator certificate must ensure that every person who is required to be trained under paragraph (d)(8) undertakes the recurrent training segment of the training programme at an interval of not more than 3 years.

139.205 Requirements for non-security designated aerodromes

(a) A holder of an aerodrome operator certificate issued for an aerodrome that is not a security designated aerodrome must, in addition to complying with the requirements in rule 139.69 (Public protection)—

- (1) have a contingency plan to provide at the aerodrome those areas that must be provided by the holder of a certificate issued for a security designated aerodrome under rule 139.203(d)(4) (as if those requirements applied to domestic passengers, crew and baggage) and under rule 139.203(d)(4A) when so required by the Minister, or the Director in response to a security threat at the aerodrome; and
- (2) comply with rules 139.203(d)(2), (3) and (9) that are prescribed for the holder of an aerodrome operator certificate issued for a security designated aerodrome.

(b) A holder of an aerodrome operator certificate for an aerodrome that is not a security designated aerodrome and serves an aeroplane having a type certificated seating capacity of 19 or more passengers engaged in scheduled air transport operations for the carriage of passengers must—

- (1) establish and facilitate a security awareness group in order to ensure sufficient information is given to other organisations at the aerodrome to motivate security awareness on the part of all personnel; and
- (2) convene, chair, and minute meetings of the security awareness group established under paragraph (1) at regular intervals not exceeding 12 months.

(c) A holder of an aerodrome operator certificate for an aerodrome that is not a security designated aerodrome and serves an aeroplane having a type certificated seating capacity of 19 or more passengers engaged in scheduled air transport operations for the carriage of passengers must establish a security training programme and procedures for ensuring that every person who is employed, engaged, or contracted by the certificate holder has the appropriate level of security awareness applicable to the person's function.

(d) The training programme required by paragraph (c) must include—

- (1) applicable segments for initial training and recurrent training; and
 - (2) knowledge testing or competency assessment as appropriate for the training conducted.
- (e) The holder of an aerodrome operator certificate must ensure that each segment required by paragraph (d)(1)—
- (1) includes a syllabus that is acceptable to the Director; and
 - (2) is conducted in a structured and coordinated manner by a person authorised by the certificate holder.
- (f) The holder of an aerodrome operator certificate must ensure that every person who is required to be trained undertakes the recurrent training segment of the training programme at an interval of not more than 3 years.

139.207 Prohibited actions affecting security

A person must not, without lawful authority—

- (1) leave open or insecure or otherwise uncontrolled any door, gate, or other barrier provided at any aerodrome to control access to any airside security area, security enhanced area, or operational area; or
- (2) deposit, park, or leave adjacent to or on any fence, barrier, or other thing being used to prevent unauthorised access to any airside security area, security enhanced area, or operational area any article that is capable of facilitating the evasion of control measures.

139.209 Airport Identity Cards

(a) The Director may issue or approve an airport identity card or other identity document in accordance with this rule if—

- (1) the Director has, in accordance with the Act, made a favourable security check determination of the person who has applied for the card or document; or
- (2) the Director has decided that the person has undergone an alternative security check that is acceptable to the Director.

(b) Subject to paragraphs (c) and (g), a person must not enter or remain in any airside security area or security enhanced area of any designated aerodrome or designated installation, unless that person—

- (1) wears an airport identity card on the front of their outer garment; or
- (2) has in their possession another identity document or other identity documents for the time being authorised under paragraph (a).

(c) Where the Director considers it desirable that the name of the holder of an airport identity card be not disclosed, the Director may approve the wearing of an identity card from which the holder's name has been deleted.

(d) A person who is authorised by this rule to enter an airside security area or security enhanced area must remain in that area only for the purposes of their duties.

(e) If required to do so by an authorised security person, any person entering or in an airside security area or security enhanced area must produce for inspection their airport identity card or other identity documents for the time being authorised under paragraph (a).

(f) If the holder of an airport identity card ceases to be employed in a position for which the card is required, or for any other reason ceases to be entitled to hold the card, the holder must return the card to the issuing authority as soon as possible.

(g) Nothing in paragraph (b) applies to—

- (1) any member of the crew of an aircraft engaged in an international service who wears on their outer garment an official identity card issued by their employer or the government of the state in which they permanently reside; or
- (2) any official of a New Zealand government agency who is required, by reason of their official duties, to remain incognito; or
- (3) any passenger who enters or leaves an airside security area or security enhanced area for the purpose of joining or leaving a flight, if they are in possession of a valid boarding pass for that

flight or is being escorted by a crew member or a representative of the operator; or

- (4) any pilot-in-command of an aircraft on private operations who enters or is within an airside security area or security enhanced area for the purpose of embarking, disembarking, or servicing the aircraft, if the pilot has in their possession a valid pilot licence, or any person being escorted by the pilot.

(h) The security checks referred to in rule 139.209(a)(1) and (2) are not required if the person making an application for an identity card is issued with a temporary identity card approved by the Director that entitles the person to enter and remain in an airside security area or security enhanced area when escorted by a person issued with an airport identity card in accordance with the security check process referred to in rule 139.209(a)(1) and (2).

Subpart E — Reserved

Subpart F – UNICOM and AWIB Services

139.351 Provision of UNICOM and AWIB Services

- (a) A person must not—
 - (1) provide or operate a UNICOM service unless it is provided and operated in accordance with this subpart:
 - (2) broadcast aerodrome information or weather information, in support of aviation, that is not associated with an air traffic service, unless it is provided and operated as an AWIB or UNICOM service in accordance with this subpart.
- (b) Nothing in this subpart precludes a person from providing a basic weather report under rule 174.6.
- (c) An individual aerodrome may not be provided with more than 1 UNICOM service or more than 1 AWIB service at any 1 time.

139.353 UNICOM and AWIB Service Requirements

- (a) A person intending to provide a UNICOM or AWIB service must—

- (1) apply to the Director for the allocation of a call sign under rule 171.17; and
 - (2) apply for the grant of a radio licence issued under the Radiocommunications Act 1989 for the radio apparatus; and
 - (3) obtain the written consent of the aerodrome operator where the service is intended to be provided.
- (b) A person providing or operating a UNICOM or AWIB service must ensure that the UNICOM or AWIB service is operated—
- (1) with the allocated call sign referred to in paragraph (a) (1); and
 - (2) under the authority of a radio licence referred to in paragraph (a) (2); and
 - (3) in accordance with the applicable system characteristics prescribed in ICAO Annex 10, Volume III, Part II Chapter 2; and
 - (4) in accordance with the applicable communications procedures prescribed in ICAO Annex 10, Volume II.
- (c) A person providing or operating a UNICOM or AWIB service must ensure that the UNICOM or AWIB service does not—
- (1) transmit erroneous or misleading information; or
 - (2) change the information received during onward transmission; or
 - (3) conflict with any air traffic service or meteorological service.
- (d) A person providing or operating a UNICOM or AWIB service must ensure that the UNICOM or AWIB service—
- (1) is provided without transmitting erroneous or misleading information; and
 - (2) is not allowed to continue in operation if the operator or service provider has any cause to suspect that the information being provided by the service is erroneous; and

- (3) meets the requirements for providing a basic weather report in accordance with rule 174.6.
- (e) A person providing or operating a UNICOM service may—
- (1) provide basic weather reports in accordance with rule 174.6, or meteorological information under the authority of a meteorological service certificate issued by the Director under the Act and in accordance with Part 174; and
 - (2) provide information on the preferred runway in use, as indicated by wind direction information from either a basic weather report or other appropriate meteorological information, and reports from pilots of aircraft using the aerodrome; and
 - (3) provide a flight following service meeting the requirements of an air operator under rule 119.73; and
 - (4) initiate emergency responses; and
 - (5) provide an Aerodrome Frequency Response Unit ; and
 - (6) at the request of a pilot, provide information on the general location of any aircraft the UNICOM service operator has knowledge of; and
 - (7) give details of temporary or permanent hazards to air navigation associated with the aerodrome that are normally published or notified by the AIS.
- (f) A person providing or operating a UNICOM service must not—
- (1) provide any air traffic services; or
 - (2) give or suggest traffic information; or
 - (3) initiate or derive traffic information.
- (g) A person providing a UNICOM service must implement procedures for training, assessing for competence, and authorising persons operating a UNICOM facility under this Subpart.

(h) A person providing or operating an AWIB service may provide information on the following:

- (1) wind direction and strength:
- (2) visibility:
- (3) cloud cover:
- (4) temperature:
- (5) mean sea level air pressure, or QNH under the authority of a meteorological service certificate issued by the Director under the Act and Part 174:
- (6) the preferred runway in use, as indicated by wind direction information from a basic weather report provided in accordance with rule 174.6 or other appropriate meteorological information, and reports from pilots of aircraft using the aerodrome:
- (7) operational matters, excluding traffic information, that are relevant to the operation of aircraft using the aerodrome.

139.355 UNICOM Service Operator Requirements

A person operating a UNICOM service must be—

- (1) trained and assessed as competent to the level of the flight radio telephony requirements of a private pilot licence or equivalent; and
- (2) trained and assessed as competent to meet the requirements of the services offered; and
- (3) given written evidence of the scope of their authorisation to operate the service.

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

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 applicant's 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 are responsible for ensuring that the aerodrome and its operation complies with Subparts A, G and H; and
 - (ia) who is responsible for the system for safety management required under rule 139.409; and
 - (ii) who is or are ultimately 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.
- (aa) The senior person referred to in paragraph (a)(2)(ia) must be able to demonstrate competency and experience relevant to the management of safety systems and the activities of the certificate holder.
- (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 Safety management

An applicant for the grant of a qualifying aerodrome operator certificate must establish, implement, and maintain a system for safety management in accordance with rule 100.3.

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
 - (1A) all of the documentation required by rule 100.3(b) to establish and maintain the system for safety management; and
 - (2) the titles and names of the senior person or persons required by rules 139.401(a)(1) and (2); and
 - (3) the duties and responsibilities of the senior person or persons required by rules 139.401(a)(1) and (2), including—
 - (i) matters for which they have responsibility to deal directly with the Director or the Authority on behalf of the organisation; and

- (ii) responsibilities for safety management; 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 (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
 - (6A) information identifying the lines of safety responsibility within the organisation; and
 - (7) the procedures required by rule 139.407 for the notification of aerodrome data and information; and
 - (8) *reserved*
 - (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 paragraph (a), 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 applicant’s exposition must be acceptable to the Director.

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 the approved form 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) A holder of a qualifying aerodrome operator certificate must ensure that the exposition is amended so that it remains a current description of the aerodrome and its associated plans, programmes, services, systems, procedures, and facilities.
- (b) The certificate holder must ensure that any amendment made to its exposition meets the applicable requirements of this Part and complies with the amendment procedures contained in its exposition.
- (c) The certificate holder must forward to the Director for retention a copy of each amendment to its exposition as soon as practicable after the amendment is incorporated into its exposition.
- (d) A certificate holder must obtain the approval of the Director before changing any of the following:
 - (1) the chief executive;
 - (2) the listed senior persons;
 - (3) the system for safety management, if the change is a material change.

- (e) The Director may impose conditions under which a certificate holder must operate during or following any of the changes specified in paragraph (d).
- (f) The certificate holder must comply with any conditions imposed by the Director under paragraph (e).
- (g) If any change referred to in this rule requires an amendment to the qualifying aerodrome operator certificate, the certificate holder must forward the certificate to the Director for endorsement of the change 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 interests 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.

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.

Appendix A—Aerodrome physical characteristics

A.1 Physical characteristics for RESA

- (a) A RESA must extend—
 - (1) to a distance of at least 90 metres from the end of the runway strip, and
 - (2) if practicable—
 - (i) to a distance of at least 240 metres from the end of the runway strip; or
 - (ii) to the greatest distance that is practicable between the 90 metres required in paragraph(a)(1) and the 240 metres required in paragraph (a)(2)(i).
- (b) The width of a RESA must—
 - (1) be at least twice the width of the associated runway and be positioned symmetrically on either side of the extended centre line of the runway; and
 - (2) where practicable, be equal to the width of the graded portion of the associated runway strip.
- (c) A RESA must be constructed to—
 - (1) provide a cleared and graded area to reduce the risk of damage to an aeroplane that undershoots or overruns the runway; and
 - (2) where practicable, be clear of any object which might endanger an aeroplane that undershoots or overruns the runway.
- (d) A RESA must not penetrate the approach or take-off climb surface for the runway.
- (e) If a RESA has a longitudinal slope—
 - (1) any downward slope must not exceed 5%; and
 - (2) slope changes must be as gradual as practicable; and

- (3) abrupt changes or sudden reversals of slopes must be avoided.
- (f) If a RESA has a transverse slope—
 - (1) any upward or downward slope must not exceed 5%; and
 - (2) slope changes must be as gradual as practicable.

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.

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 taxiway, 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.

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.

Appendix E — Visual Aids for Navigation

E.1 Wind direction Indicators

- (a) Wind direction indicators (windsock) must be located adjacent to each paved runway threshold.
- (b) If a paved runway is intended to be used at night, 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—

- (1) in runway visual range conditions of less than 800 m; or
- (2) at night in association with an instrument runway; or
- (3) 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.

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.

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.

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	
	Runway edge	15 seconds	c
	Visual approach slope indicators	15 seconds	a,c
	Runway threshold	15 seconds	c
	Runway end	15 seconds	
	Essential taxiway	15 seconds	a
	Obstacle	15 seconds	a

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	1 second	
	Runway threshold	1 second	
	Runway end	1 second	
	Runway centre line	1 second	
	Runway touchdown zone	1 second	
	All stop bars	15 seconds	
	Essential taxiway		
Runway meant for take-off in runway visual range conditions less than a value of 550 m	Runway edge	15 seconds	b
	Runway end	1 second	
	Runway centre line	1 second	a
	All stop bars	1 second	
	Essential taxiway	15 seconds	
	Obstacle	15 seconds	

Notes:

- a. *Supplied with secondary power when their operation is essential to the safety of flight operation.*
- b. *1 second where no runway centre line lights are provided.*
- c. *1 second where the approaches are over hazardous or precipitous terrain.*