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Civil Aviation Safety Authority

Part 90 Manual of Standards (as amended)

made under regulation 90.020 of the *Civil Aviation Safety Regulations 1998*.

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Part 1 General

1A Name of instrument

This instrument is the Part 90 Manual of Standards (*MOS*).

1 Definitions

- 1.1 Unless otherwise defined in this MOS, words and phrases have the same meaning as in Part 90 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*.
- 1.2 In this MOS:

FAR means Federal Aviation Regulations of the United States of America.

Type I exit means an emergency exit of that type as defined in FAR 25.807 as in force on 25 March 1998.

Type II exit means an emergency exit of that type as defined in FAR 25.807 as in force on 25 March 1998.

Type III exit means an emergency exit of that type as defined in FAR 25.807 as in force on 25 March 1998.

Type IV exit means an emergency exit of that type as defined in FAR 25.807 as in force on 25 March 1998.
- 1.3 For this MOS, a reference to aircraft, whose type certificate application was filed before a specified date, means aircraft that are:
 - (a) the first model or series of the aircraft type to which the type certificate applies, being the type certificate whose application was filed before the specified date; and
 - (b) any later model or series of the aircraft to which a type certificate amendment applies, being a type certificate amendment whose application was filed before the specified date (if one was filed before the date).
- 1.4 For this MOS, a reference to aircraft, whose type certificate application was filed after a specified date, means aircraft that are:
 - (a) the first model or series of the aircraft to which the type certificate applies, being the type certificate whose application was filed after the specified date; and

- (b) any later model or series of the aircraft to which a type certificate amendment applies, being a type certificate amendment whose application was filed after the specified date (if one was filed after the date).

2 Background

- 2.1 Part 90 of CASR 1998, Additional airworthiness requirements, sets out the airworthiness requirements for an aircraft that are in addition to:
 - (a) the type certification basis for the aircraft; and
 - (b) any requirements for the issue of a certificate of airworthiness for the aircraft under Part 21 of CASR 1998.
- 2.2 Under regulation 90.020 of CASR 1998, this MOS sets out the additional airworthiness standards required for CASR Part 90.

Note To the extent that there is any inconsistency between a standard prescribed in ICAO Standards and a standard set out in this MOS, the standard in this MOS prevails.

Part 2 Requirements for all aeroplanes

Division 1 Requirements for cabin crew seats

3 Application — CASR 90.125 (1) (b)

The standards set out in this Division apply for paragraph 90.125 (1) (b) of CASR 1998.

4 Cabin crew seats

A cabin crew seat must:

- (a) be located in the passenger cabin near prescribed floor level emergency exits; and
- (b) to the extent possible, without compromising proximity to a required floor level emergency exit, provide a direct view of the cabin area for which the cabin crew member is individually responsible; and
- (c) be facing forward or rearward, and have an energy absorbing rest that is designed to support the arms, shoulders, head, and spine of the occupant; and
- (d) be designed and positioned so that when not in use it will not interfere with the use of passageways and exits; and
- (e) be located to minimise the probability of the occupant suffering injury from being struck by any item that is likely to be used in, and capable of being dislodged from, a galley, stowage compartment or serving cart; and
- (f) be equipped with a restraint system that:
 - (i) consists of a combined safety belt and symmetric shoulder harness unit with a single point release; and
 - (ii) is capable of being safely secured when not in use to prevent interference with rapid egress in an emergency; and
 - (iii) is designed to the inertia load factors established under the certification basis of the aircraft.

5 Cabin crew seats — alternative standards

- 5.1 In spite of paragraph 4 (b), for an aeroplane with a certification basis before FAR 25.785 as in force on 6 March 1980, or equivalent, the cabin crew member seats

need not be relocated to meet the requirement of paragraph 4 (b), if a mirror gives an indirect view of the cabin area to the relevant cabin crew member.

- 5.2 In spite of paragraph 4 (f), an aeroplane may continue to use a seat equipped with a serviceable combined safety belt and shoulder harness if the combined belt and harness were approved and installed on the aeroplane before 6 March 1980.

Division 2 Flight crew seats

5A Application — CASR 90.105 (4) (c)

The standards set out in this Division apply for paragraph 90.105 (4) (c) of CASR 1998.

5B Flight crew seats — requirements

For the cockpit observer's seat that was approved as part of the type design for the following models, a single shoulder strap harness is acceptable in place of a symmetrical type harness for the following aircraft:

- (a) DHC-8 (all models);
- (b) Fokker 27 (all models);
- (c) Fokker 28 (all models);
- (d) SAAB 340 (all models).

Division 3 Emergency exits

5C Application — CASR 90.135 (2)

The standards set out in this Division apply for subregulation 90.135 (2) of CASR 1998.

5D Emergency exits — requirements

The following emergency exit requirements are prescribed:

- (a) an emergency exit must be of sufficient size so as to admit an ellipse of 483 mm by 660 mm (the minimum opening);
- (b) the minimum opening of an emergency exit must be unobstructed at all times.

Division 4 Fire extinguishing agents

5E Application — CASR 90.150 (1) (b)

The standards set out in this Division apply for paragraph 90.150 (1) (b) of CASR 1998.

Note Regulation 90.150 prohibits the carriage of a fire extinguishing agent that is prescribed in the Part 90 MOS on an aircraft.

5F Fire extinguishing agents — prohibition

- 5F.1 For aircraft manufactured on or after 31 December 2018 — the following fire extinguishing agents, used in fire extinguishers mentioned in subsection 5F.2, are prescribed:

a fire extinguishing agent containing a substance specified in Group II of *Annex A: Controlled substances of the Montreal Protocol on Substances that Deplete*

the Ozone Layer (the **Montreal Protocol**) as it appears in the 8th Edition of the Handbook for the Montreal Protocol.

5F.2 For subsection 5F.1, the fire extinguishers are:

- (a) any fire extinguisher fitted for a lavatory disposal receptacle for towels, paper or waste; and
- (b) any hand-held fire extinguisher.

Part 3 Large aeroplanes engaged in air transport operations

Division 1 General

6 Application

Unless otherwise stated, the standards set out in this Part apply only to a large aeroplane engaged in air transport operations.

Note Air transport operations are defined in the CASR 1998 Dictionary as operations for a commercial purpose mentioned in paragraph 206 (1) (b) or (c) of the *Civil Aviation Regulations 1988*.

Division 2 Emergency exits

Subdivision 2.1 Application

7 Application — CASR Subpart 90.C

The standards set out in this Division apply for the CASR Subpart 90.C regulation for which they are expressed to apply.

Subdivision 2.2 Escape devices

8 Application — CASR 90.205 (3)

The standards set out in this Subdivision apply for subregulation 90.205 (3) of CASR 1998.

9 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane.

10 Escape devices — requirements

- 10.1 For an aeroplane whose type certificate application was filed before 1 May 1972 — the escape device for a passenger emergency exit must be a self-supporting slide, or equivalent, designed so that:
 - (a) subject to subsection 10.2, it automatically:
 - (i) deploys simultaneously with the opening of the exit; and
 - (ii) erects within 10 seconds; and
 - (b) its lower end is self-supporting on the ground, including if 1 or more of the landing gear legs collapses.
- 10.2 For paragraph 10.1 (a), if the escape device is installed at a service door, or passenger door that qualifies as an emergency exit, means must be provided to prevent automatic deployment of the device when the door is opened from the inside or the outside of the aeroplane in non-emergency conditions.

- 10.3 For an aeroplane whose type certificate application was filed before 1 May 1972 — the escape device for the flight crew emergency exit must be a rope or other equivalent device, demonstrably suitable for the purpose, that is:
- (a) able with its attachment to withstand a static load of 181.6 kg; and
 - (b) either:
 - (i) attached to the fuselage structure at, or above, the top of the emergency exit opening; or
 - (ii) for a device at a pilot's emergency exit window — at another approved location if the stowed device or its attachment would otherwise reduce the pilot's view in flight.
- 10.4 For an aeroplane whose type certificate application was filed on, or after, 1 May 1972 — the escape device must meet the design requirements under which the aeroplane was type certificated.

Subdivision 2.3 Access to emergency exits

11 Application — CASR 90.215 (1) (b)

The standards set out in this Subdivision apply for paragraph 90.215 (1) (b) of CASR 1998.

12 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane.

13 Transport category aeroplane

Access to emergency exits for a transport category aeroplane must be in accordance with sections 14 to 21, inclusive, of this Subdivision.

14 Passageways — Type I and Type II exits

- 14.1 Each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, must be:
- (a) at least 508 mm wide; and
 - (b) unobstructed.
- 14.2 There must be enough space around each Type I or Type II emergency exit to allow a crew member to assist in the evacuation of passengers without reducing the unobstructed width of the passageway to below 508 mm.

15 Passageways — Type III and Type IV exits

There must be access from the main aisle to each Type III or Type IV emergency exit and this access must not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness of the exit.

16 Filed before 1 January 1958 — Type III and Type IV exits

- 16.1 For an aeroplane whose type certificate application was filed before 1 January 1958, access to each Type III or Type IV emergency exit must be such that:
- (a) the projected opening of the exit is not obstructed; and
 - (b) in opening the exit there is no interference from seats, berths or other protrusions, including seat backs in any position, for a distance from the exit of not less than the width of the narrowest passenger seat installed on the aeroplane.

- 16.2 A seat back does not infringe the requirement in subsection 16.1 if:
- (a) the seat back recline mechanism had a manual lock-upright capability; and
 - (b) procedures are in place on the aeroplane to ensure that the seat back is locked in the upright position during take-off and landing.
- 17 Filed after 1 January 1958 – 60 or more seats – Type III exit**
- 17.1 For an aeroplane with a passenger seating configuration of 60 or more, and a type certificate application filed after 1 January 1958, access to each Type III emergency exit must be:
- (a) if the adjacent seat rows on the exit side of the aisle contain no more than 2 seats — subject to subsection 17.3, an unobstructed passageway that is at least 254 mm wide; or
 - (b) if the adjacent seat rows on the exit side of the aisle contain 3 seats — subject to subsection 17.3, an unobstructed passageway that is at least 330 mm.
- 17.2 For subsection 17.1, the width of a passageway must be measured with adjacent seats adjusted to their most adverse position.
- 17.3 Instead of the unobstructed passageway mentioned in paragraph 17.1 (a) or (b), there may be 2 unobstructed passageways each at least 152 mm wide between seat rows leading to an unobstructed space adjacent to each emergency exit, provided adjacent exits do not share a common passageway.
- 17.4 For subsection 17.3:
- (a) the width of the passageway must be measured with adjacent seats adjusted to their most adverse position; and
 - (b) the unobstructed space adjacent to the emergency exit must:
 - (i) extend vertically from the floor to either the ceiling or the bottom of the sidewall stowage bins; and
 - (ii) extend inboard from the emergency exit for a distance not less than the width of the narrowest passenger seat installed on the aeroplane; and
 - (iii) extend from the forward edge of the forward passageway to the aft edge of the aft passageway; and
 - (c) the exit opening must be totally within the fore and aft bounds of the unobstructed space.
- 17.5 If special circumstances make compliance with subsection 17.1 impractical, CASA may, in writing, approve a different seating configuration for emergency exit access.
- 17.6 For subsection 17.5, special circumstances which may make compliance with subsection 17.1 impractical include the following:
- (a) emergency exits located in close proximity to each other;
 - (b) fixed installations such as lavatories and galleys;
 - (c) permanently mounted bulkheads;
 - (d) an insufficient number of seat rows ahead of, or behind, the exit.
- 17.7 For subsection 17.5, an exit row seating configuration is deemed to be approved if it is the subject of an exclusion from Airworthiness Directive AD/General/73 under regulation 39.004 of CASR 1998, and in force before 1 December 2010.

18 Filed after 1 January 1958 – 20 or more seats – Types III and IV exits

For an aeroplane with a passenger seating configuration of 20 or more and a type certificate application filed after 1 January 1958, access to each Type III or Type IV emergency exit must be such that:

- (a) the projected opening of the exit is not obstructed; and
- (b) in opening the exit there is no interference from seats, berths or other protrusions, including seat backs in any position, for a distance from the exit of not less than the width of the narrowest passenger seat installed on the aeroplane.

19 Filed after 1 January 1958 – 19 seats or less – Types III and IV exits

For an aeroplane with a passenger seating configuration of 19 or less and a type certificate application filed after 1 January 1958, access to each Type III or Type IV emergency exit must, as far as practicable, meet the requirements mentioned in paragraphs 16.1 (a) and (b), except that there may be minor obstructions and interference in the emergency exit area if there are compensating factors to maintain the effectiveness of the exit.

Note An example of a minor obstruction with compensating factors is unattached (meaning loose), soft seat back cushions on side facing divans as long as the cushion can be readily moved away and the exit easily opened from the inside and outside. The exit signs must not be obscured.

20 Filed after 1 January 1958 — Type III exit placards

For an aeroplane with a Type III exit and a type certificate application filed after 1 January 1958, there must be 1 or more placards for each Type III exit, and each placard must:

- (a) be readable by all persons seated adjacent to, and facing a passageway to, the exit; and
- (b) accurately state or illustrate the proper method of opening the exit, including the use of handholds; and
- (c) if the exit is a removable hatch — state the weight of the hatch and indicate an appropriate location to place the hatch after removal.

22 Non-transport category aeroplane

For a passenger-carrying large aeroplane in the non-transport category only, access to a window-type emergency exit must not be obstructed by any seat or seat back.

23 Passenger compartment obstructions, curtains and doorways

- 23.1 This section applies for a passenger-carrying large aeroplane.
- 23.2 If, to reach an emergency exit from a seat in the passenger cabin, it is necessary to pass through a passageway between passenger compartments, the passageway must be unobstructed.
- 23.3 For subsection 23.2, curtains are an obstruction unless they allow free and unimpeded passage through the passageway.
- 23.4 A door must not be installed in any partition between passenger compartments.
- 23.5 If, to reach an emergency exit from a seat in the passenger cabin, it is necessary to pass through a doorway separating the passenger cabin from other areas of the aeroplane, the door must have a means to latch it open.
- 23.6 For subsection 23.5, the means of latching must be able to withstand the loads imposed upon it when the door is subjected to the ultimate inertia forces relative to the surrounding structure, as prescribed in FAR 25.561 (b) or equivalent, as in force on

the date specified in the aeroplane's type certificate data sheet or equivalent document.

Subdivision 2.4 Interior emergency exit marking

24 Application — CASR 90.220 (1) (b)

Subject to section 30, the standards set out in this Subdivision apply for paragraph 90.220 (1) (b) of CASR 1998.

25 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane.

26 Passenger emergency exit marking and locating signs

- 26.1 Each passenger emergency exit and its means of access must be conspicuously marked on the interior of the aeroplane.
- 26.2 The marking to identify and locate each passenger emergency exit must be recognisable from a distance equal to the width of the cabin.
- 26.3 Each passenger emergency exit and access to it must be marked in a way that enables the occupants to locate the exit even if there is dense smoke in the cabin.
- 26.4 Each passenger emergency exit must be indicated by locating signs that are visible to occupants approaching along the main passenger aisle or aisles, so that there is a sign:
- (a) either:
 - (i) above the aisle or aisles near each passenger emergency exit; or
 - (ii) if low headroom makes this impracticable — at another overhead location; and
 - (b) next to each passenger emergency exit; and
 - (c) if a bulkhead or divider prevents fore and aft vision along the passenger cabin, either:
 - (i) on each such bulkhead or divider, indicating that emergency exits are beyond the bulkhead or divider; or
 - (ii) if this is not possible — to the same effect at another appropriate location.
- 26.5 For paragraphs 26.4 (a) and (b), 1 sign may serve more than 1 exit if the sign is such that each exit can be easily identified and readily seen because of the sign.

27 Filed before 1 May 1972 — emergency exit marking and locating sign – transport category

- 27.1 If the application for the type certificate for a transport category aeroplane was filed before 1 May 1972, each passenger emergency exit marking and each locating sign must have white letters at least 25 mm high on a red background that is at least 50 mm high.
- 27.2 Each locating sign must be self-illuminated, electrically or otherwise, with a minimum brightness:
- (a) on installation of 0.51 cd/m²; and
 - (b) that does not decrease in service below 0.32 cd/m².
- 27.3 The colours mentioned in subsection 27.1 may be reversed for electrically self-illuminated signs if this will increase the illumination of the exit.

28 Filed on, or after, 1 May 1972 — emergency exit marking and locating sign – transport category

- 28.1 If the application for the type certificate for a transport category aeroplane was filed on, or after, 1 May 1972, each passenger emergency exit marking and each locating sign must be manufactured to meet the interior emergency exit marking requirements under which the aircraft was type certificated.
- 28.2 A sign must not be continued in use if its brightness decreases below 0.8 cd/m².

29 Type-certificated after 31 December 1964 — emergency exit marking and locating sign – non-transport category turbo-propeller

- 29.1 If a turbo-propeller powered non-transport category aeroplane was type certificated after 31 December 1964, each passenger emergency exit marking and each locating sign must have white letters 25 mm high on a red background 50 mm high.
- 29.2 Each locating sign must be self-illuminated, electrically or otherwise, with a minimum brightness:
- (a) on installation of 0.51 cd/m²; and
 - (b) that does not decrease in service below 0.32 cd/m².
- 29.3 The colours mentioned in subsection 29.1 may be reversed for electrically self-illuminated signs if this will increase the illumination of the exit.

30 Alternative standards — emergency exit marking and locating sign

If a passenger emergency exit marking or locating sign does not comply with the relevant requirements of subsection 27.1, 28.1 or 29.1, it must be a universal exit symbol that complies with the means of compliance set out in EASA AMC 25.812 (b) (1) and (2) as in force on 19 September 2007.

31 Emergency exit operating handle marking, illumination and instructions

- 31.1 For each passenger emergency exit, the following must be conspicuously marked on the interior of the aeroplane:
- (a) the location of the operating handle for the exit; and
 - (b) the opening instructions for the handle, including, if covered, the handle-cover removal instructions.
- 31.2 The marking must be:
- (a) on, or near, each passenger emergency exit; and
 - (b) readable from a distance of 762 mm.
- 31.3 Each passenger emergency exit operating handle must be:
- (a) self-illuminated with a minimum brightness:
 - (i) on installation of 0.51 cd/m²; and
 - (ii) that does not decrease in service below 0.32 cd/m²; or
 - (b) conspicuously located and illuminated by the aeroplane's emergency lighting including in conditions of occupant crowding at the exit.

- 31.4 If the application for the type certificate for a transport category aeroplane was filed before 1 May 1972, for each Type II or larger passenger emergency exit with a locking mechanism released by rotary motion of a handle, the instructions for opening must be shown by:
- (a) a red arrow with a shaft at least 19 mm wide and a head twice the width of the shaft, extending along at least 70 degrees of arc at a radius approximately equal to three quarters of the handle length; and
 - (b) the word OPEN in red capital letters at least 25 mm high on a contrasting background placed horizontally adjacent to the arrowhead to show the open position of the handle.

Subdivision 2.5 Interior emergency lighting, including FPEEPM

32 Application — CASR 90.225 (1) (b) and 90.230 (2) (b)

The standards set out in this Subdivision apply for paragraphs 90.225 (1) (b) and 90.230 (2) (b) of CASR 1998.

33 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane that is a transport category aeroplane.

34 Interior emergency lighting system — requirements

- 34.1 Subject to subsection 34.2, the aeroplane must have an interior emergency lighting system, including power supply, that is independent of the aeroplane's main lighting system and its power supply.
- 34.2 Without otherwise affecting subsection 34.1, the sources of general cabin illumination may be common to both the interior emergency lighting and the main lighting system.
- 34.3 The interior emergency lighting system must include the following:
- (a) illuminated emergency exit markings;
 - (b) illuminated emergency exit locating signs;
 - (c) interior lighting in emergency exit areas;
 - (d) sources of general cabin illumination.

35 Type certificated on, or after, 1 January 1958 — floor proximity emergency escape path marking

- 35.1 For a large aeroplane that was type certificated after 1 January 1958 and has a passenger seating configuration of 20 or more, the interior emergency lighting system must include floor proximity emergency escape path marking (*FPEEPM*).
- 35.2 The FPEEPM must provide emergency evacuation guidance for passengers when all sources of illumination more than 1.22 m above the cabin aisle floor are totally obscured.
- 35.3 In darkness equivalent to the dark of night, the FPEEPM must enable each passenger:
- (a) after leaving his or her seat — to visually identify the emergency escape path along the cabin aisle floor to the first exit, or pair of exits, forward and aft of the seat; and
 - (b) to readily distinguish each exit from the emergency escape path by reference to markings and visual features that are not more than 1.22 m above the cabin aisle floor.

36 Interior emergency lighting system — further requirements

For this Subdivision, subject to section 37, the interior emergency lighting system must:

- (a) be controlled manually from the flight crew station with a cockpit control device that has an “on”, “off”, and “armed” position (the *cockpit station*); and
- (b) for aeroplanes on which a cabin crew member is required — be controlled manually from both of the following:
 - (i) the cockpit station;
 - (ii) a point in the passenger compartment readily accessible from a normal cabin crew member’s seat (the *cabin crew station*); and
- (c) be designed to prevent inadvertent operation of the manual controls; and
- (d) when turned on at either the cockpit station or the cabin crew station — ensure that the interior emergency lighting remains on in the event of interruption of the aeroplane’s normal electric power; and
- (e) when armed at the cockpit station — ensure that the interior emergency lighting comes on in the event of interruption of the aeroplane’s normal electric power; and
- (f) provide the level of illumination required under this MOS for at least 10 minutes at the critical ambient conditions after an emergency landing.

37 Interior emergency lighting system — if cannot be switched off

An interior emergency lighting system that is designed to be continuously on and cannot be switched off need not meet the requirements in paragraphs 36 (a) to (e), but must meet the requirement in paragraph 36 (f).

Note Photoluminescent and radioluminescent light sources are examples of lighting systems that cannot be turned off.

Subdivision 2.6 Exterior emergency exit marking

38 Application — CASR 90.235 (1) (b)

The standards set out in this Subdivision apply for paragraph 90.235 (1) (b) of CASR 1998.

39 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane.

40 Exterior emergency exit marking — requirements

- 40.1 The following must be clearly marked on the outside of the aeroplane for each emergency exit that is capable of being opened from the outside in accordance with this Subdivision:
 - (a) the external means of opening the emergency exit; and
 - (b) on the side of the fuselage or on the exit itself — a 50 mm coloured band highlighting the exit.
- 40.2 Each marking, including the coloured band, must have colour contrast that readily distinguishes it from the surrounding fuselage surface.
- 40.3 For subsection 40.2, the contrast must be as follows:
 - (a) if the reflectance of the darker colour is 15% or less, the reflectance of the lighter colour must be at least 45%;

- (b) if the reflectance of the darker colour is greater than 15%, there must be at least a 30% difference between the reflectance of the darker colour and the reflectance of the lighter colour.
- 40.4 For an emergency exit that is not in the side of the fuselage, the external means of opening, including instructions if applicable, must be conspicuously marked:
- (a) in red; or
 - (b) if the background colour is such that red would be inconspicuous — in bright chrome yellow.
- 40.5 For an emergency exit that is not in the side of the fuselage, if the means of opening the exit is located on 1 side only of the fuselage, a conspicuous marking to that effect must be provided on the other side.
- Note* Emergency exits not in the side of the fuselage include ventral exits and tail cone exits.
- 40.6 In this section:
- reflectance** means the ratio of the luminous flux reflected by a body to the luminous flux it receives.

Subdivision 2.7 Exterior emergency lighting

41 Application — CASR 90.240 (1) (b)

The standards set out in this Subdivision apply for paragraph 90.240 (1) (b) of CASR 1998, including in relation to escape devices required by regulation 90.205.

42 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying, large aeroplane that is a transport category aeroplane.

43 Filed before 1 May 1972 — exterior emergency lighting for over-wing

For an aeroplane whose type certificate application was filed before 1 May 1972, the exterior emergency lighting for each over-wing emergency exit must supply the following illumination:

- (a) on a 0.19 m² area where an evacuee is likely to make his or her first step outside the cabin — not less than 0.22 lux (measured on a plane parallel to the surface);
- (b) for a minimum width of 0.61 m along the 30% of the required slip-resistant escape route that is farthest from the exit — not less than 0.54 lux (measured normal to the direction of the incident light);

Note For the required slip-resistant escape route mentioned above, see Subdivision 2.8 — Over-wing escape routes.

- (c) on the ground surface (measured on a horizontal plane) where, with the landing gear extended, an evacuee using the established escape route would normally make first contact with the ground — not less than 0.22 lux.

44 Filed before 1 May 1972 — exterior emergency lighting – escape device illumination

44.1 This section applies to an aeroplane whose type certificate application was filed before 1 May 1972.

44.2 The exterior emergency lighting must illuminate each emergency exit escape device in such a way that when it is deployed it is visible from the aeroplane.

Note For escape devices, see regulation 90.205 of CASR 1998 and Subdivision 2.2 in Part 3 of this MOS.

- 44.3 For an over-wing emergency exit, illumination of the escape device provided by exterior emergency lighting must be illumination of not less than 0.22 lux on the ground surface (measured on a horizontal plane) where, with the landing gear extended, an evacuee using the over-wing emergency exit escape route would normally make first contact with the ground.
- 44.4 For a not over-wing emergency exit, illumination of the escape device provided by exterior emergency lighting must be:
- (a) illumination of not less than 0.32 lux (measured normal to the direction of the incident light) where, with the landing gear extended, an evacuee using the not over-wing emergency exit would normally make first contact with the ground; and
 - (b) for each not over-wing emergency exit in the side of the fuselage:
 - (i) over a spherical surface 10 degrees to either side of the centre of the escape device; and
 - (ii) from 30 degrees above to 5 degrees below the 45-degree position of the escape device.
- 44.5 If an escape device is illuminated by an exterior emergency lighting subsystem that:
- (a) serves only that escape device; and
 - (b) is independent of the aeroplane's main emergency lighting system; and
 - (c) is automatically activated when the escape device is deployed;
- then the subsystem:
- (d) must not be adversely affected by the stowage of the device; and
 - (e) must provide sufficient ground surface illumination that obstacles at the end of the escape device are clearly visible to evacuees.

45 Filed on, and after, 1 May 1972 — exterior emergency lighting for over-wing

For an aeroplane whose type certificate application was filed on, or after, 1 May 1972, the exterior emergency lighting must meet the exterior emergency lighting requirements under which the aeroplane was type certificated.

Subdivision 2.8 Over-wing escape routes

46 Application — CASR 90.245 (1) (b)

The standards set out in this Subdivision apply for paragraph 90.245 (1) (b) of CASR 1998.

47 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a passenger-carrying large aeroplane.

48 Over-wing escape route — requirements

- 48.1 An escape route must be established from each over-wing emergency exit of the aeroplane.
- 48.2 If the application for the type certificate for the aeroplane was filed before 1 May 1972, the escape route must:
- (a) be marked; and
 - (b) except for flap surfaces suitable as slides, be covered with a slip resistant surface.

- 48.3 If the application for the type certificate for the aeroplane was filed on, or after, 1 May 1972, the escape route must meet the slip-resistant escape route requirements under which the aeroplane was type certificated.

Division 3 Fire protection

Subdivision 3.1 General

49 Application — CASR 90.250 (2) (b)

The standards set out in this Division apply for paragraph 90.250 (2) (b) of CASR 1998.

Note Under subregulation 90.250 (3) of CASR 1998, the standards do not apply to a material used for a seat cushion mentioned in regulation 90.255.

50 Passenger-carrying aeroplanes — 20 seats or more

The standards set out in this Division are for a passenger-carrying large aeroplane that is a transport category aeroplane, and that:

- (a) has a passenger seating configuration of 20 seats or more; and
- (b) was type certificated on, or after, 1 January 1958.

Subdivision 3.2 Cabin interior materials

51 Passenger compartment interior materials — requirements

51.1 In this section:

relevant FAR means FAR 25.853 (d) as in force on 6 March 1995.

Note FAR 25.853 (d) as in force on 6 March 1995 describes interior components and test requirements.

51.2 Unless CASA approves otherwise in writing for an operator, the standards in this Subdivision apply to the materials used in the cabin interior components described in the relevant FAR.

Note The cabin interior components include ceilings, wall panels, partitions, galley structures etc.

51.3 For subsection 51.2, CASA may only approve otherwise for specified applicable interior components if exceptional circumstances make compliance with the standard impracticable.

51.4 For an aeroplane manufactured on, or after, 20 August 1988 but before 20 August 1990, applicable interior components must comply with the heat release rate testing standards of the relevant FAR, except:

- (a) the total heat release over the first 2 minutes of sample exposure must not exceed 100 kilowatt minutes per square metre; and
- (b) the peak heat release rate must not exceed 100 kilowatts per square metre.

51.5 For an aeroplane manufactured on, or after, 20 August 1990, applicable interior components must comply with the heat release rate and smoke testing standards of the relevant FAR.

51.6 For an aeroplane:

- (a) type certificated after 1 January 1958; and
- (b) in which a substantially complete replacement of the cabin interior components identified in the relevant FAR was undertaken in the period commencing on 20 August 1988 and ending immediately before 20 August 1990;

applicable interior components must comply with the heat release rate testing standards of the relevant FAR, except:

- (c) the total heat release over the first 2 minutes of sample exposure must not exceed 100 kilowatt minutes per square metre; and
- (d) the peak heat release rate must not exceed 100 kilowatts per square metre.

51.7 For an aeroplane:

- (a) type certificated after 1 January 1958; and
- (b) in which a substantially complete replacement of the cabin interior components identified in the relevant FAR was undertaken on, or after, 20 August 1990;

applicable interior components must comply with the heat release rate testing standards of the relevant FAR.

Division 4 Systems and equipment

Subdivision 4.1 General

52 Application — CASR Subpart 90.C

The standards set out in this Division apply for the regulation in Subpart 90.C of CASR 1998 for which they are expressed to apply.

Subdivision 4.2 Landing gear aural warning systems and associated devices

53 Application — CASR 90.290 (1) (b)

The standards set out in this Subdivision apply for paragraph 90.290 (1) (b) of CASR 1998.

54 Passenger-carrying and other aeroplanes

The standards set out in this Subdivision are for a large aeroplane, whether passenger-carrying or otherwise.

55 FAR 25.729 compliant

The standards set out in this Subdivision do not apply for an aeroplane that complies with:

- (a) FAR 25.729 as in force on 6 January 1992; or
- (b) any later amendment of FAR 25.729 after 6 January 1992.

Note FAR 25.729 relates to aeroplanes with retractable landing gear.

56 Landing gear aural warning — aeroplanes

An aeroplane must have a landing gear aural warning (*LGAW*) device that functions continuously in the following circumstances:

- (a) for an aeroplane with an established approach flap position, whenever:
 - (i) the flaps are extended beyond the maximum certificated approach climb configuration position in the aeroplane flight manual; and
 - (ii) the landing gear is not fully extended and locked;
- (b) for an aeroplane without an established approach climb flap position, whenever:
 - (i) the flaps are extended beyond the position at which landing gear extension is normally performed; and
 - (ii) the landing gear is not fully extended and locked.

57 Landing gear aural warning — requirements

The LGAW device:

- (a) must not have a manual shut-off means readily available to the flight crew such that it could be operated instinctively, inadvertently, or by habitual reflexive action; and
- (b) must be in addition to the throttle-actuated device installed under the airworthiness type certification requirements; and
- (c) may utilise any part of the throttle-actuated system including the aural warning device.

58 Landing gear aural warning — flap position sensing unit

For section 56, the flap position sensing unit may be installed at any suitable place in the aeroplane.

Part 4 Small aeroplanes engaged in air transport operations

Division 1 General

59 Application and date of effect — small aeroplanes

The standards set out in this Part apply only to a small aeroplane engaged in air transport operations.

Division 2 Emergency exits

Subdivision 2.1 Application

60 Application — CASR Subpart 90.D

The standards set out in this Division apply for the CASR Subpart 90.D regulation for which they are expressed to apply.

Subdivision 2.2 Emergency exits

61 Application — CASR 90.410 (2) (b)

The standards set out in this Subdivision apply for paragraph 90.410 (2) (b) of CASR 1998.

62 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a small aeroplane, engaged in regular public transport operations, that has 10 or more passenger seats.

63 Emergency exits — requirements

- 63.1 The aeroplane must have an emergency exit from the flight crew compartment if a door between the compartment and the passenger cabin may block the crew's escape after the emergency landing conditions mentioned in the aeroplane's type certification basis.
- 63.2 Each emergency exit from the aeroplane must be identified by an approved sign that:
 - (a) shows:
 - (i) the word "EXIT" in white letters 25 mm high on a red background 50 mm high, or in red letters 25 mm high on a white background 50 mm high; or

- (ii) a universal exit symbol complying with the means of compliance set out in EASA AMC 25.812 (b) (1) and (2) as in force 19 September 2007; and
 - (b) is self-illuminated or electrically illuminated independently of the normal cabin lighting system; and
 - (c) has a luminance of at least 0.5 cd/m² at all times.
- 63.3 If a provision of CASR 1998 or this MOS requires the aeroplane to have an emergency exit and the exit does not use a floor-level door, the exit must:
- (a) in the case of a low-wing aeroplane — be located over the wing; or
 - (b) in any other case — provide a means for the aeroplane’s occupants to reach the ground safely in an emergency.
- 63.4 Subsection 63.5 applies only if the aeroplane has:
- (a) 15 seats or less; and
 - (b) an external door or doors on only 1 side of the fuselage.
- 63.5 The aeroplane must have at least 1 emergency exit on the opposite side of the fuselage from the external door or doors.
- 63.6 Subsection 63.7 applies only if the aeroplane has:
- (a) at least 16, but not more than 23 seats; and
 - (b) an external door, or doors, on only 1 side of the fuselage.
- 63.7 The aeroplane must have at least 3 emergency exits, of which at least 2 must be on the opposite side of the fuselage from the external door or doors.
- 63.8 In subsections 63.4 and 63.6:
seats includes crew member seats.
- 63.9 A passenger aisle in the aeroplane must be at least:
- (a) 228 mm wide at any point that is less than 635 mm above the floor; and
 - (b) 381 mm wide at any point that is 635 mm or more above the floor.

Division 3 Landing gear aural warning systems and associated devices

Subdivision 3.1 Application

64 Application — CASR Subpart 90.D

The standards set out in this Division apply for the CASR Subpart 90.D regulation for which they are expressed to apply.

Subdivision 3.2 Landing gear aural warning

65 Application and date of effect — CASR 90.415 (2) (b)

The standards set out in this Subdivision apply for paragraph 90.415 (2) (b) of CASR 1998.

66 Passenger-carrying aeroplanes

The standards set out in this Subdivision are for a small aeroplane, engaged in air transport operations, that has 10 or more passenger seats.

67 Landing gear aural warning — requirements

- 67.1 This section applies if the aeroplane:
- (a) has wing flaps and retractable landing gear; and

- (b) is not an amphibian aeroplane.
- 67.2 The aeroplane must be equipped with an aural landing gear warning device that:
- (a) sounds continuously if the aeroplane's flaps are in the landing position and the landing gear is not fully extended and locked; and
 - (b) cannot be turned off by the flight crew.

Note to Part 90 Manual of Standards

The Part 90 Manual of Standards (in force under the *Civil Aviation Safety Regulations 1998*) as shown in this compilation comprises Manual of Standards Part 90 Instrument 2010 amended as indicated in the Tables below.

Table of Manual of Standards

Year and number	Date of registration on FRLI	Date of commencement	Application, saving or transitional provisions
MOS 90 Instrument 2010	25 November 2010 (see F2010L03095)	1 December 2011	—
MOS 90 2011 No. 1	17 October 2011 (see F2011L02077)	18 October 2011	—
MOS 90 2017 No. 1	2 November 2017 (see F2017L01414)	3 November 2017	—

Table of Amendments

ad. = added or inserted am. = amended rep. = repealed rs. = repealed and substituted

Provision affected	How affected
s. 1	rep. MOS 90 2011 No. 1
s. 2	rep. MOS 90 2011 No. 1
s. 3	rep. MOS 90 2011 No. 1
Schedule heading	rep. MOS 90 2011 No. 1
Schedule title	rep. MOS 90 2011 No. 1
s. 1A	ad. MOS 90 2011 No. 1
s. 3	am. MOS 90 2017 No. 1
s. 4	am. MOS 90 2017 No. 1
s. 5A	ad. MOS 90 2017 No. 1
s. 5B	ad. MOS 90 2017 No. 1
s. 5C	ad. MOS 90 2017 No. 1
s. 5D	ad. MOS 90 2017 No. 1
s. 5E	ad. MOS 90 2017 No. 1
s. 5F	ad. MOS 90 2017 No. 1
s. 6	am. MOS 90 2017 No. 1
s. 10	am. MOS 90 2017 No. 1
s. 17	am. MOS 90 2017 No. 1
s. 18	am. MOS 90 2017 No. 1
s. 19	am. MOS 90 2017 No. 1
s. 20	am. MOS 90 2017 No. 1
s. 21	rep. MOS 90 2017 No. 1
s. 31	am. MOS 90 2011 No. 1
s. 35	am. MOS 90 2017 No. 1
s. 49	am. MOS 90 2017 No. 1
s. 50	am. MOS 90 2017 No. 1

Table of Amendments

ad. = added or inserted am. = amended rep. = repealed rs. = repealed and substituted

Provision affected	How affected
s. 52	am. MOS 90 2017 No. 1
s. 55	am. MOS 90 2017 No. 1
s. 59	am. MOS 90 2017 No. 1
s. 65	am. MOS 90 2017 No. 1
