



**EXPOSURE DRAFT (3 July 2020)**

Tranche 2: Chapters 9, 12, 13 & 14.

**Part 121 (Australian Air Transport  
Operations—Larger Aeroplanes) Manual of  
Standards 2020**

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I, Shane Patrick Carmody, Director of Aviation Safety, on behalf of CASA, make the following Manual of Standards.

Dated

Shane Patrick Carmody [*DRAFT ONLY—NOT FOR SIGNATURE*]  
Director of Aviation Safety

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## Chapter 1—Preliminary

### 1.01 Name

- (1) This instrument is the *Part 121 (Australian Air Transport Operations—Larger Aeroplanes) Manual of Standards 2020*.
- (2) This instrument may also be cited as:
  - (a) the *Part 121 Manual of Standards*; or
  - (b) the *Part 121 MOS*.

### 1.02 Commencement

This instrument commences on the later of the following:

- (a) the day after this instrument is registered;
- (b) immediately after the commencement of the *Civil Aviation Safety Amendment (Part 121) Regulations 2018*.

### 1.03 Authority

This instrument is made under the *Civil Aviation Safety Regulations 1998*.

Note: CASA may issue a Manual of Standards for Part 121 (Australian air transport operations—larger aeroplanes): see regulation 121.015 of CASR.

### 1.04 Definitions

Note: A number of expressions used in this instrument are defined in the Dictionary at the end of the *Civil Aviation Safety Regulations 1998*, including the following:

- (a) aircraft flight manual instructions;
- (b) Air Traffic Services;
- (c) Air transport operation;
- (d) Australian air transport AOC;
- (e) authorised aeronautical information;
- (f) cargo;
- (g) CASR;
- (h) certificate of airworthiness;
- (i) certificate of registration;
- (j) certified true copy;
- (k) child;
- (l) contaminated (in relation to a runway);
- (m) crew member;
- (n) dry (in relation to a runway);
- (o) flight manual;
- (p) flight technical log;
- (q) flight training;
- (r) infant;

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- (s) journey log;
- (t) lowest safe altitude;
- (u) maximum landing weight;
- (v) maximum operational passenger seat configuration;
- (w) maximum take-off weight;
- (x) medical transport operation;
- (y) minimum equipment list;
- (z) normal cruising speed;(za) operational flight plan;
- (za) operational safety-critical personnel;
- (zb) operations specifications;
- (zc) operator;
- (zd) passenger;
- (ze) published lowest safe altitude;
- (zf) radio station licence;
- (zg) weight and balance documents;
- (zh) weight and balance limits;
- (zi) wet (in relation to a runway).

In this instrument:

***accelerate stop distance available***: see section 9.01.

***area navigation***: see section 9.01.

***cabin training device***: see section 13.06.

***Civil Aviation Order 100.7*** means *Civil Aviation Order 100.7 Instrument 2015*, as in force from time to time.

***clearway***: see section 9.01.

***commuter type aeroplane***: see section 9.01.

***emergency exit trainer***: see section 13.06.

***empty weight*** has the meaning given by subsection 2 of Civil Aviation Order 100.7.

***gross flight path***: see section 9.01.

***landing distance available***: see section 9.01.

***maximum zero fuel weight***, of an aeroplane, means the maximum weight for the aeroplane, not including disposable fuel or oil, that is set out in:

- (a) the type certificate data sheet for the aeroplane; or
- (b) the aeroplane's flight manual.

***navigation specification***: see section 9.01.

***net flight path***: see section 9.01.



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***PBN***, or ***performance-based navigation***: see section 9.01.

***presumed temperature***: see section 9.01.

***removable equipment*** has the meaning given by subsection 2 of Civil Aviation Order 100.7.

***RNAV specification***: see section 9.01.

***RNP specification***: see section 9.01.

***SFAR 41***: see section 9.01.

***SFAR 41 aeroplane***: see section 9.01.

***stopway***: see section 9.01.

***take-off distance available***: see section 9.01.

***take-off distance required***, for an aeroplane, means the take-off distance for the aeroplane calculated in accordance with the relevant requirements in the flight manual instructions for the aeroplane.

***take-off run available***: see section 9.01.

$V_1$  means the take-off decision speed.

$V_1$  (***wet***): see section 9.01.

$V_2$  means the take-off safety speed which is the target speed to be attained at the 35 ft height following an engine failure after  $V_1$ .

Note: The 35 ft height is also known as reference zero, which is also the point at which the take-off distance ends.

$V_{EF}$ : see section 9.01.

$V_{MCG}$ : see section 9.01.

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## Chapter 2—Extended diversion time operations

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## Chapter 3—Carriage of documents and emergency and survival equipment information

### Division 1—Flight related documents

#### 3.01 Carriage of documents—all flights

- (1) For the purposes of paragraph 121.085(1)(a) of CASR, the following documents are prescribed for carriage on a flight:
- (a) the aircraft flight manual instructions for the aeroplane;
  - (b) either:
    - (i) the flight technical log for the aeroplane; or
    - (ii) if Part 42 of CASR does not apply to the aeroplane—the maintenance release for the aeroplane;
  - (c) the minimum equipment list for the aeroplane;
  - (d) the operational flight plan for the flight;
  - (e) the journey log for the flight;
  - (f) the authorised aeronautical information for the flight;
  - (g) the weight and balance documents for the flight.

Note 1: These documents are in addition to documents that are required to be carried on the aeroplane as mentioned in regulations 121.085, 121.095, 121.105, 121.110 and 121.115 of CASR.

Note 2: Other documents may also be required to be carried on the aeroplane under other legislation. For example, documentation regarding the carriage of dangerous goods under Part 92 of CASR, or documentation relating to disinsection requirements and procedures under the *Biosecurity Act 2015*.

- (2) Despite paragraph (1)(a), if:
- (a) the information and instructions that are required under the relevant airworthiness standards for the aeroplane to be included in the aeroplane's flight manual are contained in another document; and
  - (b) the other document is carried on board the aeroplane; and
  - (c) that document does not alter, or contain anything that would conflict with, the information or instructions mentioned in paragraph (a);

then the document may be carried on board the aeroplane in place of the flight manual.

Note: An exposition that meets the requirements in subsection (2) could be carried on board instead of the flight manual.

- (3) Also, despite paragraph (1)(a), if:
- (a) a checklist of the aeroplane's normal, abnormal and emergency procedures mentioned in paragraph (b) of the definition of *aircraft flight manual instructions* in the CASR Dictionary is contained in another document; and

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- (b) the other document is carried on board the aeroplane; and
  - (c) that document does not alter, or contain anything that would conflict with, the information or instructions in the checklist;

then the document may be carried on board the aeroplane in place of the checklist.

## **3.02 Carriage of documents—flights that begin or end outside Australian territory**

For the purposes of paragraph 121.095(2)(a) of CASR, the following documents are prescribed for a flight of an aeroplane that begins or ends at an aerodrome outside Australian territory:

- (a) the aeroplane's certificate of airworthiness and certificate of registration;
- (b) if the aeroplane has a radio station licence—a copy of the licence;
- (c) if the flight is a passenger transport operation or a medical transport operation—a document containing the information required by regulation 121.110 of CASR (passenger lists);
- (d) if the aeroplane is carrying cargo (other than passenger baggage):
  - (i) a manifest and detailed declaration of the cargo; and
  - (ii) a statement about whether any of the cargo may require special or unusual handling;
- (e) a certified true copy of the operator's Australian air transport AOC;
- (f) a copy of the operations specifications issued to the operator in relation to the operator's Australian air transport AOC.

Note 1: These documents are in addition to documents that are required to be carried on the aeroplane as mentioned in regulations 121.085 and 121.095 of CASR.

Note 2: For paragraph (b): see the definition of *radio station licence* in the CASR Dictionary.

## **3.03 Keeping and updating documents etc.**

For the purposes of paragraph 121.100(a) of CASR, if the flight is a passenger transport operation, a copy of the passenger list for the flight is prescribed.

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## Division 2—Emergency and survival equipment

### 3.04 Information about emergency and survival equipment

For the purposes of subregulation 121.135(1) of CASR, if equipment listed in column 1 of an item of the following table is required to be carried on the flight, the information mentioned in column 2 of the item is prescribed for the equipment.

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<b>Information about emergency and survival equipment</b>		
<b>Item</b>	<b>Column 1 Item of equipment</b>	<b>Column 2 Information</b>
1	A life raft	The number, colour and type of each life raft carried on the flight
2	A pyrotechnic signalling device	The number, colour and type of each pyrotechnic signalling device carried on the flight
3	An emergency medical kit	Details of each emergency medical kit carried on the flight
4	A portable emergency locator transmitter	The type and frequency of each portable emergency locator transmitter carried on the flight
5	Water supplies carried as an item of survival equipment	Details of the water supplies carried on the flight

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## Chapter 4—Alternate aerodromes

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## Chapter 5—Operational flight plans

### 5.01 Pre-flight content of operational flight plans

#### *General information requirements*

- (1) For the purposes of paragraph 121.175(2)(b) of CASR, the operational flight plan must contain the following information:
  - (a) the aeroplane's registration mark;
  - (b) the flight number of the flight, if any;
  - (c) the date of the flight;
  - (d) the name or identification of the departure aerodrome and the planned destination aerodrome for the flight;
  - (e) the amount of fuel required to be carried on board the aeroplane for the flight under regulation 121.235 of CASR, and the actual amount of fuel carried on board the aeroplane for the flight;
  - (f) for the planned flight route for the flight:
    - (i) the route and route segments of the flight, including waypoints, distances and tracks; and
    - (ii) the published lowest safe altitude or the lowest safe altitude for the flight (whichever is applicable) for each route segment of the flight; and
    - (iii) the planned cruising speed, and flying times between waypoints, for the flight; and
    - (iv) the planned altitudes or flight levels during flight;
  - (g) if an en-route alternate aerodrome is required for extended diversion time operations conducted during the flight—the en-route alternate aerodrome.

Note: See the CASR Dictionary for definitions of *lowest safe altitude* and *published lowest safe altitude*.

#### *Information about alternate aerodromes*

- (2) If a take-off alternate aerodrome is required for the flight, the operational flight plan must include the take-off alternate aerodrome, and the routes or route segments required for a flight to the take-off alternate aerodrome, unless:
  - (a) there is a last-minute change:
    - (i) to the take-off alternate aerodrome required for the flight; or
    - (ii) requiring a take-off alternate aerodrome to be planned for the flight; and
  - (b) it is not reasonably practicable in the circumstances to update the flight plan to include either or both matters; and

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- (c) in the case where the information identifying the take-off alternate aerodrome is not included—there are procedures in the aeroplane operator’s exposition to ensure the pilot in command is notified of the take-off alternate aerodrome before the aeroplane takes-off for the flight.
- (3) If a destination alternate aerodrome is required for the flight, the operational flight plan must include the destination alternate aerodrome, and the routes or route segments required for a flight to the destination alternate aerodrome, unless:
- (a) there is a last-minute change:
    - (i) to the destination alternate aerodrome required for the flight; or
    - (ii) requiring a destination alternate aerodrome to be planned for the flight; and
  - (b) it is not reasonably practicable in the circumstances to update the flight plan to include either or both matters; and
  - (c) in the case where the information identifying the destination alternate aerodrome is not included—there are procedures in the aeroplane operator’s exposition to ensure the pilot in command is notified of the destination alternate aerodrome before the aeroplane takes off for the flight.

## 5.02 End of flight information for operational flight plans

For the purposes of subregulation 121.175(3) of CASR, the operational flight plan must contain the following information:

- (a) if waypoints in the flight plan are required, under regulation 91.630 of CASR, to be reported to Air Traffic Services—the estimated time that the aeroplane will fly over the waypoint;
- (b) the fuel calculations conducted in compliance with the fuel requirements under regulation 121.235 of CASR;
- (c) the aerodrome of final landing for the flight.



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## Chapter 6—Narrow runway width calculations

### 6.01 Scope of Chapter 6

This Chapter:

- (a) is made for paragraph 121.220(1)(b) of CASR; and
- (b) prescribes the manner of working out the minimum width of a runway for an aeroplane.

### 6.02 Minimum runway width

- (1) The minimum width of a runway for an aeroplane is the width, of a homogenous runway surface, shown in the cell of Table 6.02(1) that is the intersection of:
  - (a) the aeroplane's code letter, worked out under subsection (2); and
  - (b) the aeroplane's code number, worked out under subsection (3).

<b>Code letter</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Code number</b>						
1	18 m	18 m	23 m	-	-	-
2	23 m	23 m	30 m	-	-	-
3	30 m	30 m	30 m	45 m	-	-
4	-	-	45 m	45 m	45 m	60 m

*Working out the code letter*

- (2) The **code letter**, for an aeroplane, is:
  - (a) if the aeroplane has a wingspan and an outer main gear wheel span mentioned in the same item in Table 6.02(2) (other than an aeroplane mentioned in paragraph (c))—the letter mentioned in column 3 of the item; or
  - (b) if the aeroplane has a wingspan and an outer main gear wheel span mentioned in different items in Table 6.02(2) (other than an aeroplane mentioned in paragraph (c))—the letter mentioned in column 3 of the item in the table with the higher number; or
  - (c) if the aeroplane has a wingspan mentioned in item 1, 2, 3 or 4 of Table 6.02(2) and an outer main gear wheel span that is at least 9 m but less than 14 m—D.

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**Table 6.02(2)—Code letters**

<b>Item</b>	<b>Column 1 Wingspan of aeroplane</b>	<b>Column 2 Outer main gear wheel span of aeroplane</b>	<b>Column 3 Code letter</b>
1	less than 15 m	less than 4.5 m	A
2	at least 15 m but less than 24 m	at least 4.5 m but less than 6 m	B
3	at least 24 m but less than 36 m	at least 6 m but less than 9 m	C
4	at least 36 m but less than 52 m	at least 9 m but less than 14 m	D
5	at least 52 m but less than 65 m	at least 9 m but less than 14 m	E
6	at least 65 m but less than 80 m	at least 14 m but less than 16 m	F

### *Working out the code number*

- (3) The **code number**, for an aeroplane with the reference field length mentioned in column 1 of an item in Table 6.02(3), is the number mentioned in column 2 of the item.

**Table 6.02(3)—Code numbers**

<b>Item</b>	<b>Column 1 Reference field length</b>	<b>Column 2 Code number</b>
1	less than 800 m	1
2	at least 800 m but less than 1 200 m	2
3	at least 1 200 m but less than 1 800 m	3
4	at least 1 800 m	4

### *Definitions*

- (4) In this section:

**outer main gear wheel span**, for an aeroplane, means the distance (measured in metres) between the outside edges of the aeroplane's main gear wheels.

**reference field length**, for an aeroplane, means the shortest take-off distance required for a take-off by the aeroplane at its maximum take-off weight:

- (a) on a runway that is level and dry; and
- (b) in still air; and
- (c) in International Standard Atmosphere conditions at sea level.

Note: See the CASR Dictionary for definitions of **dry** (in relation to a runway), **maximum take-off weight**, and section 1.04 in this instrument for the definition of **take-off distance required**.

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## Chapter 7—Fuel requirements

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## Chapter 8—Safety briefings and instructions

### Division 1—Safety briefing cards

#### 8.01 Safety briefing cards

- (1) For the purposes of paragraph 121.280(3)(a) of CASR, a safety briefing card for an aeroplane and a flight must include the following information:
  - (a) how to use and adjust seatbelts (other than extension belts);
  - (b) if the aeroplane's seats (or berths) are adjustable, when to adjust the back of the seat (or berth) to an upright position or other position permitted by the aircraft flight manual instructions for the aeroplane;
  - (c) if the aeroplane's seats have attachments (for example, tray tables or footrests)—when the attachment must be in its stowed position;
  - (d) if the aeroplane has an attachment on an interior cabin structure that is intended to be manipulated or used by passengers during flight (for example, a tray table or bassinet)—when the attachment must be in its stowed position;
  - (e) where to stow, or otherwise secure, carry-on baggage and personal effects, and the periods during flight when these items must be stowed or secured;
  - (f) where the emergency exits are located, and how to use them;
  - (g) if the aeroplane is equipped with an escape path lighting system—the form, function, colour and location of the system;
  - (h) how to assume the brace position, including the position for passengers with infants;
  - (i) the information mentioned in subsection (2) in relation to equipment mentioned in the provision that is required to be carried on the aeroplane for the flight under paragraph 121.460(1)(a) of CASR;
  - (j) that smoking is not permitted during the flight.
- (2) For the purposes of paragraph (1)(i), the information is:
  - (a) if passenger operated equipment to dispense oxygen is required to be carried—the location of the equipment and how to use it; and
  - (b) if life jackets are required to be carried:
    - (i) where life jackets (other than infant life jackets) are located; and
    - (ii) how to use life jackets (including infant life jackets); and
  - (c) if life rafts are required to be carried—where they are located and how to use them during the initial evacuation of the aeroplane.

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## Division 2—Requirements for safety briefing, instructions and demonstrations

### 8.02 Scope of Division 2, Chapter 8

This Division:

- (a) is made for subregulation 121.285(1) of CASR; and
- (b) prescribes requirements for safety briefings, instructions or demonstrations given to a passenger for a flight of an aeroplane.

### 8.03 Safety briefing, instructions and demonstrations before take-off

- (1) A safety briefing, instruction or demonstration mentioned in this section must be given to a passenger before the aeroplane takes off for a flight.
- (2) The safety briefing, instruction or demonstration must be given in a form that facilitates the application of the procedures applicable in the event of an emergency.
- (3) A specific safety briefing must be provided directly to any passenger with reduced mobility on the flight, and any person accompanying or assisting the passenger (the *accompanying person*), and the safety briefing must:
  - (a) include what to do if an emergency evacuation of the aeroplane is necessary; and
  - (b) be given in a form appropriate to the passenger and an accompanying person.
- (4) A specific safety briefing must be provided directly to any passenger responsible for an infant on the flight that outlines:
  - (a) when and how the infant must be restrained; and
  - (b) the location of infant life jackets.
- (5) Subject to subsection (6), a specific safety briefing must be provided directly to any passenger on the flight who is seated in an emergency exit row, that outlines what to do if it becomes necessary to use the exit.
- (6) Subsection (5) does not apply if:
  - (a) a cabin crew member who has been assigned to the flight is seated in a cabin crew seat adjacent to the exit; and
  - (b) the cabin crew member has been assigned emergency evacuation responsibilities for the exit in accordance with the operator's exposition.
- (7) If life jackets are required to be carried on the aeroplane under paragraph 121.460(1)(a) of CASR, there must be a demonstration of the method of donning and inflating a life jacket.

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- (8) A safety briefing that addresses the following matters must be given:
- (a) when seatbelts must be worn during the flight, and how to use them;
  - (b) if the aeroplane's seats (or berths) are adjustable—when to adjust the back of the seat (or berth) to an upright position or other position permitted by the aircraft flight manual instructions for the aeroplane;
  - (c) if the aeroplane's seats have attachments (for example, tray tables or footrests)—when the attachment must be in its stowed position;
  - (d) if the aeroplane has a permanently affixed attachment on an interior cabin structure that is intended to be used or manipulated by passengers during flight (for example, a tray table or bassinet)—when the attachment must be in its stowed position;
  - (e) where to stow, or otherwise secure, carry-on baggage and personal effects, and the periods during flight when these items must be stowed or secured;
  - (f) where the emergency exits are located;
  - (g) if the aeroplane is equipped with an escape-path lighting system—where it is;
  - (h) if equipment to dispense supplemental oxygen is required to be carried on the aeroplane for the flight under paragraph 121.460(1)(a) of CASR—the location of the equipment and how to use it;
  - (i) if life jackets are required to be carried on the aeroplane for the flight under paragraph 121.460(1)(a) of CASR:
    - (i) where they are located and how to use them; and
    - (ii) the giving of a warning that life jackets must not be inflated inside the aeroplane;
  - (j) if life rafts are required to be carried on the aeroplane for the flight under paragraph 121.460(1)(a) of CASR—where they are located;
  - (k) that smoking is prohibited on board the aeroplane under legislation;
  - (l) that carry-on luggage must be left behind in the event of an emergency evacuation;
  - (m) the requirement to comply with any safety directions and instructions given by a crew member;
  - (n) in relation to the safety briefing card required to be available to each passenger under regulation 121.280 of CASR:
    - (i) where to find it; and
    - (ii) if the safety briefing card sets out different seating configurations for the aeroplane—which configuration is in use for the flight;
  - (o) if special survival equipment relevant to a specific environment is intended to be used by a passenger without instructions at the time of use—the location of the equipment and how to use it.

Note 1: Smoking on the aeroplane during a Part 121 operation is prohibited under section 37 of the *Air Navigation Regulations 2016*.

Note 2: Certain directions to passengers, in relation to seats, are required to be given under regulation 91.570 of CASR.

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## 8.04 Safety instructions during flight

- (1) The safety instructions to a passenger, mentioned in this section, must be given at a time, before the landing of the aeroplane, at which the passenger could be reasonably expected to remember the instruction before the flight ends.
- (2) A safety instruction that addresses the following must be given:
  - (a) that seatbelts and restraint systems must be securely fastened for landing;
  - (b) that seat backs must be in the upright position or, for a person who is ill or incapacitated, another position approved by the pilot in command;
  - (c) that any attachments to a seat (or berth), including a tray table or footrest, must be stowed;
  - (d) that any attachment on an interior cabin structure that is intended to be used or manipulated by passengers, for example, a tray table or bassinet, must be stowed.

Note 1: Regulation 121.255 of CASR requires an operator to have procedures for giving instructions to passengers about securely stowing carry-on baggage, including before the landing of the aeroplane.

Note 2: Regulation 121.350 of CASR requires an operator to have procedures in their exposition about the operation of portable electronic devices. Regulation 91.170 of CASR makes provision in relation to the operation of such devices during flight.

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## Chapter 9—Performance

### Division 1—Preliminary

#### 9.01 Definitions for Chapter 9

In this instrument:

***accelerate stop distance available*** means the length of the take-off run available plus the length of the stopway.

***area navigation*** means a method of navigation which permits aircraft operations on any desired flight path within:

- (a) the coverage of ground or space-based navigation aids; or
- (b) the limits of the capability of self-contained navigation aids; or
- (c) a combination of paragraphs (a) and (b).

Note: Area navigation includes PBN as well as other operations that do not meet the definition of PBN.

***clearway:***

- (a) for an aerodrome in Australian territory—has the meaning given in the Part 139 (Aerodromes) Manual of Standards 2019; or
- (b) for an aerodrome in a foreign country—means the clearway for a runway at the aerodrome, declared in accordance with the relevant requirements of the national aviation authority of the country.

***commuter type aeroplane*** means:

- (a) an SFAR 41 aeroplane; or
- (b) an aeroplane that is type certificated in the commuter category.

***gross flight path*** means the flight path that an aeroplane will follow when flown in a particular configuration, in accordance with specified procedures in relevant conditions, and that is established, from the aeroplane's performance data, as representing the average fleet performance of the aeroplane type.

***landing distance available*** means the length of runway established by an aeroplane operator to be available and suitable for the ground run of an aeroplane landing.

***navigation specification*** means a set of aircraft and aircrew requirements needed to support PBN operations within a defined airspace, being either:

- (a) RNAV specification which is a navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, and is designated by the prefix RNAV (for example, RNAV 5, RNAV 1); or



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- (b) RNP specification which is a navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, and is designated by the prefix RNP (for example, RNP 2, RNP APCH).

**net flight path** means the gross flight path reduced in elevation or extended in length by margins stated in subparagraphs 9.06(4)(g)(i) to (iii).

Note: The margins are to allow for factors such as deterioration in aeroplane performance and variations in pilot techniques in relating aeroplane performance to obstacle clearance.

**PBN**, or **performance-based navigation**, means area navigation based on performance requirements for aircraft operating:

- (a) along an ATS route; or
- (b) on an instrument approach procedure; or
- (c) in designated airspace.

Note 1: Performance requirements are expressed in navigation specifications (RNAV specification, and RNP specification) in terms of the accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular class of airspace.

Note 2: See the CASR Dictionary for the definition of **ATS routes**.

**presumed temperature** means the most limiting of the following:

- (a) the ambient temperature;
- (b) the temperature assumed to be the ambient temperature determined using the procedures, contained in an aeroplane operator's exposition, for estimating the ambient temperature at take-off for the purpose of determining take-off performance.

**RNAV specification** has the meaning given in paragraph (a) of the definition of **navigation specification**.

**RNP specification** has the meaning given in paragraph (b) of the definition of **navigation specification**.

**SFAR 41** means Special Federal Aviation Regulation 41 of the United States of America, as in force on 12 September 1983.

**SFAR 41 aeroplane** means an aeroplane that:

- (a) is certificated as a normal category aircraft; and
- (b) is an aeroplane in relation to which an applicant under part 4(c) of SFAR 41 would be entitled to a type certificate amendment or a supplemental type certificate that shows compliance with Annex 8 to the Chicago Convention in relation to the aeroplane, if SFAR 41 were still in force; and
- (c) is operated in accordance with flight manual instructions that specify performance standards that are at least equivalent to the standards set out in Annex 8 to the Chicago Convention.

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***stopway:***

- (a) for an aerodrome in Australian territory—has the meaning given in the Part 139 (Aerodromes) Manual of Standards 2019; or
- (b) for an aerodrome in a foreign country—means the stopway for a runway at the aerodrome, declared in accordance with the relevant requirements of the national aviation authority of the country.

***take-off distance available*** means the total of:

- (a) the length of the take-off run available at an aerodrome; and
- (b) if a clearway is provided at the aerodrome—the length of the clearway.

***take-off run available***, at an aerodrome, means the length of runway declared to be available and suitable for the ground run of an aeroplane taking off at the aerodrome.

$V_1$  means the take-off decision speed.

$V_1$  (*wet*) means a reduced  $V_1$ , not below  $V_{MCG}$ , established for use on a wet or contaminated runway.

$V_2$  means the take-off safety speed which is the target speed to be attained at the 35 ft height following an engine failure after  $V_1$ .

Note: The 35 ft height is also known as reference zero, which is also the point at which the take-off distance ends.

$V_{EF}$  means the take-off engine failure speed established by the certification basis for the aeroplane.

$V_{MCG}$  has the meaning given by regulation 25.149 of the FARs, as in force from time to time.

Note: See section 1.04 for definitions of  $V_1$  and  $V_2$ .

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## Division 2—Take-off weights

### 9.02 Purpose of Division 2, Chapter 9

The purpose of this Division is to prescribe:

- (a) the circumstances in which the weight of an aeroplane must be calculated under paragraph 121.395(2)(a) of CASR; and
- (b) the methods for calculating the weight under paragraph 121.395(2)(b) of CASR.

### 9.03 Circumstances and methods

- (1) For paragraph 9.02(a), the circumstances are before the aeroplane takes off for a flight.
- (2) For paragraph 9.02(b), the methods are as set out in this Division.

### 9.04 Maximum permitted take-off weight

The weight that an aeroplane must not exceed at take-off is the least of the following:

- (a) any of the weights determined in accordance with sections 9.05, 9.06, 9.07, 9.08, 9.09, 9.10, 9.11 and 9.12;
- (b) a take-off weight which will ensure a landing weight that complies with the relevant section of Division 3 for the aeroplane:
  - (i) at the destination aerodrome; and
  - (ii) if a destination alternate aerodrome is required for the flight by Chapter 2—at the destination alternate aerodrome.

Note 1: Regulation 121.390 of CASR requires a calculation that relates to an aeroplane's performance to be made using performance data set out in the aircraft flight manual instructions for the aeroplane or approved by CASA. See the CASR Dictionary for the definition of *aircraft flight manual instructions*.

Note 2: Regulation 91.055 of CASR makes it an offence if an aircraft is operated in a manner that creates a hazard to another aircraft, a person or property.

### 9.05 Take-off distance

- (1) Assuming that the critical engine fails at  $V_{EF}$  and using a single  $V_1$ , the take-off weight for an aeroplane must not exceed a weight that ensures that:
  - (a) the accelerate stop distance required for a take-off from a runway does not exceed the accelerate stop distance available for the runway; and
  - (b) the take-off distance required for a take-off from the runway does not exceed the take-off distance available for the runway; and
  - (c) any clearway forming part of the take-off distance available does not exceed half the length of the take-off run available; and

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- (d) in the case of a wet or contaminated runway, the take-off distance is calculated to the point at which the aeroplane reaches a height of 15 ft above the take-off surface using a reduced  $V_1$  not below  $V_1$  (wet); and
  - (e) the take-off run required does not exceed the take-off run available using  $V_1$  for the rejected and continued take-off; and
  - (f) on a wet or contaminated runway, the weight at which the aeroplane can take-off from the runway does not exceed that permitted for a take-off on a dry runway.
- (2) When calculating the take-off weight in accordance with subsection (1), the following must be taken into account:
- (a) the take-off configuration of the aeroplane;
  - (b) the pressure altitude and presumed temperature at the aerodrome;
  - (c) the type of runway surface and the runway surface condition;
  - (d) the runway slope in the direction of take-off;
  - (e) not more than 50% of the headwind component or not less than 150% of the tailwind component for the runway planned to be used;
  - (f) the loss of any runway length due to the aligning of the aeroplane for take-off;
  - (g) credit for the stopway, and the clearway, at the aerodrome as follows:
    - (i) stopway that is appropriate for the aeroplane type that can be included in the accelerate stop distance available;
    - (ii) clearway that is appropriate for the aeroplane type that can be included within take-off distance available.

## 9.06 Net take-off flight path

- (1) The take-off weight for an aeroplane must not exceed a weight that would enable the aeroplane, following a failure of the critical engine that is recognised at  $V_1$  appropriate to a dry runway at the aerodrome, to vertically clear all obstacles within the net take-off flight path by at least:
- (a) 35 ft, if the aeroplane for the take-off will use a bank angle not exceeding 15°; and
  - (b) 15 ft, if the aeroplane for the take-off:
    - (i) is intended to use a bank angle not exceeding 15° and
    - (ii) will be conducted in compliance with paragraph 9.05(1)(d); and
  - (c) 50 ft, if the aeroplane for the take-off will use a bank angle exceeding 15°; and
  - (d) 30 ft, if the aeroplane for the take-off:
    - (i) is intended to use a bank angle exceeding 15°; and
    - (ii) will be conducted in compliance with paragraph 9.05(1)(d).

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- (2) For the purposes of subsection (1), an obstacle is deemed to be within the net take-off flight path if the lateral distance from the obstacle to the aeroplane's intended flight path does not exceed:
- (a) if the intended flight path does not require a track change exceeding 15°—90 m plus (0.125 x D):
    - (i) to a maximum of 600 m; or
    - (ii) if the portion of the flight from the departure end of the runway to the lowest safe altitude for the route can be conducted with a navigation specification of RNP 0.2 or better—to a maximum of 300 m; or
  - (b) if the aeroplane has a wingspan less than 60 m, the distance;
    - (i) to a maximum of 900 m; or
    - (ii) if the portion of the flight from the departure end of the runway to the lowest safe altitude for the route can be conducted with a navigation specification of RNP 0.2 or better—to a maximum of 600 m:using the formula:

$$(\text{half the wingspan of the aeroplane}) + 60 \text{ m} + (0.125 \times D).$$

- (3) In subsection (2):

**D** means the horizontal distance the aeroplane will travel from:

- (a) the end of the take-off distance available at the aerodrome; or
- (b) if a turn is scheduled before the end of the take-off distance available—the end of the take-off distance required for the take-off.

- (4) When calculating the net take-off flight path:

- (a) the following factors must be taken into account:
  - (i) the weight of the aeroplane at the commencement of the take-off run;
  - (ii) pressure altitude at the aerodrome;
  - (iii) presumed temperature at the aerodrome;
  - (iv) either not more than 50% of the head-wind component or not less than 150% of the tail-wind component; and
- (b) a track change must not be made before the aeroplane's net take-off flight path has achieved a height equal to the greater of the following:
  - (i) 50 ft above the take-off surface; or
  - (ii) one half of the aeroplane's wingspan; and
- (c) the bank angle may only exceed 15° if the performance data used in accordance with regulation 121.390 of CASR provides for a higher angle of bank; and
- (d) the bank angle must not exceed 25°; and

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- (e) it must be assumed that the point on the net take-off flight path where a horizontal flight segment commences is the same horizontal distance from the end of the runway as the point where the gross take-off flight path intersects the height selected for the level flight acceleration manoeuvre; and
  - (f) the gross gradient of climb achieved under sections 9.07 and 9.09 must be reduced by:
    - (i) if the aeroplane is twin-engines—0.8%; or
    - (ii) if the aeroplane has 3 engines—0.9%; or
    - (iii) if the aeroplane has 4 engines—1.0%; and
  - (g) allowance must be made for:
    - (i) the effect of the bank angle on operating speeds and flight path; and
    - (ii) distance increments resulting from increased operating speeds; and
    - (iii) distance increments resulting from the acceleration reduction equivalent to the climb gradient reductions mentioned in paragraph (g); and
    - (iv) retention of stall margin and loss of climb gradient.

Note 1: Paragraph (4)(e) requires the height selected by the operator for the level flight acceleration manoeuvre to be more than 35 ft higher than the highest obstacles within the new take-off flight path.

Note 2: The net take-off flight path and the gross take-off flight path may be considered identical when the aeroplane is in the take-off configuration described in section 9.07.

## 9.07 Performance—take-off configuration

- (1) In the take-off configuration assuming failure of the critical engine recognised at  $V_1$ , an aeroplane must be able to:
  - (a) climb, without ground effect and without landing gear retraction, at the speed established as the speed at which the aeroplane becomes airborne; and
  - (b) in doing so—achieve a gross gradient of climb which is:
    - (i) if the aeroplane has 2 engines—positive; or
    - (ii) if the aeroplane has 3 engines—0.3%; or
    - (iii) if the aeroplane has 4 engines—0.5%.
- (2) In the take-off configuration that exists with the critical engine inoperative and the landing gear fully retracted, the aeroplane at speed  $V_2$  must be able to achieve a gross gradient of climb of at least:
  - (a) if the aeroplane is a commuter type aeroplane—2%; or
  - (b) otherwise:
    - (i) if the aeroplane has 2 engines—2.4%; or
    - (ii) if the aeroplane has 3 engines—2.7%; or
    - (iii) if the aeroplane has 4 engines—3.0%.

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## 9.08 Performance—level flight

- (1) An aeroplane may be accelerated in level flight from  $V_2$  speed to final take-off climb speed at a height above the take-off surface that is the greater of:
  - (a) 400 ft; and
  - (b) the height necessary to achieve obstacle clearance in accordance with subsection 9.06(1).
- (2) During the level flight acceleration manoeuvre, an aeroplane with the critical engine inoperative must have an available gross gradient of climb of at least:
  - (a) if the aeroplane has 2 engines—1.2%; and
  - (b) if the aeroplane has 3 engines—1.4%; and
  - (c) if the aeroplane has 4 engines—1.5%.

## 9.09 Performance—en route configuration

- (1) In the en route configuration existing at the end of the level flight acceleration manoeuvre, an aeroplane must be able to achieve a gross gradient of climb of at least:
  - (a) if the aeroplane has 2 engines—1.2%; and
  - (b) if the aeroplane has 3 engines—1.4%; and
  - (c) if the aeroplane has 4 engines—1.5%.
- (2) The gradient of climb must be achievable at final take-off speed with the critical engine inoperative and the remaining engines at maximum continuous power or thrust.

## 9.10 En route—critical engine inoperative

- (1) The take-off weight for an aeroplane must not be more than a weight that would enable the aeroplane, in accordance with the one-engine inoperative en route net flight path data contained within the performance data used in accordance with regulation 121.390 of CASR, to achieve compliance with the following requirements:
  - (a) the flight path must have a positive slope at 1500 ft above the aerodrome where the landing is assumed to be made after the engine failure;
  - (b) subject to subsection (3), the net flight path:
    - (i) must have a positive slope at an altitude of at least 1000 ft above all terrain and obstructions within 5 nm of the intended track to be flown; or
    - (ii) taking into account the matters in subsection (2), must permit the aeroplane to continue flight from the cruising altitude to an aerodrome where a landing can be made in accordance with Division 3 whilst clearing all terrain and obstructions within 5 nm of the intended track by at least 2000 ft vertically.

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- (2) For subparagraph (1)(b)(ii), the matters are:
- (a) the engine failure occurring at the most critical point along the route; and
  - (b) the effects of forecast wind on the flight path; and
  - (c) the effect of the icing protection systems if the meteorological conditions require their operation; and
  - (d) fuel jettisoning to an extent consistent with reaching the aerodrome with the required fuel reserves.

Note: Chapter 4 contains requirements relating to the selection of en route alternate aerodromes.

- (3) The route width margins mentioned in subparagraphs (1)(b)(i) or (ii) must be increased to 10 nm if the aeroplane cannot maintain a track using a navigation specification of RNP 2 or better.

## 9.11 En route 90 minute limitation—3 or 4 engine aeroplanes

- (1) Subject to subsection (2), the take-off weight for a 3- or 4-engine aeroplane must not be more than a weight that would enable a route to be flown where the aeroplane is not more than 90 minutes away from an aerodrome where a landing can be made in accordance with Division 3.
- (2) The take-off weight for the aeroplane may be a weight that permits the aeroplane to be operated more than 90 minutes away from such an aerodrome if:
- (a) it is assumed that 2 engines fail simultaneously at the most critical point of that portion of the route where the aeroplane is more than 90 minutes (at normal cruising speed) away from an aerodrome where a landing can be made in accordance with Division 3; and
  - (b) the 2-engine inoperative en route flight path data permits the aeroplane to continue the flight, in the expected meteorological conditions, from the point where the 2 engines are assumed to have failed, to an aerodrome at which it is possible to land with 2 engines inoperative; and
  - (c) the net flight path, taking into account the effect of icing protection systems if the meteorological conditions require their operation, clears all terrain and obstructions by at least 2000 ft within (subject to subsection (3)) 5 nm of the intended track to be flown; and
  - (d) the net flight path has a positive slope at an altitude of 1500 ft above the aerodrome where the landing is assumed to be made after the failure of 2 engines; and
  - (e) the expected weight of the aeroplane at the point where the 2 engines are assumed to fail must be not less than that which would include sufficient fuel to proceed to an aerodrome where the landing is assumed to be made, and to arrive there at an altitude of at least 1500 ft directly over the aerodrome and thereafter to fly level for at least 15 minutes.



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- (3) Despite paragraph (2)(c), the route width margins must be increased to 10 nm if the aeroplane cannot maintain a track using a navigation specification of RNP 2 or better.

## 9.12 Take-off weight—planned missed approach climb

- (1) The take-off weight for an aeroplane must not be more than a weight that would allow, at the landing weight of the aeroplane determined in accordance with Division 3, a missed approach for the procedure to be carried out:
  - (a) at the destination aerodrome or destination alternate aerodrome (if any) in the one-engine-inoperative missed approach configuration of the aeroplane; and
  - (b) taking into account the pressure altitude and the temperature expected for the estimated time of landing at the relevant aerodrome.
- (2) If an authorised instrument approach procedure is planned to be conducted, the take-off weight for the aeroplane must also not be more than a weight that would allow, at that landing weight and configuration:
  - (a) the conduct of a missed approach with a climb gradient that greater of:
    - (i) the published missed approach climb gradient for the authorised instrument approach procedure; or
    - (ii) a missed approach climb gradient of at least 2.5%; or
  - (b) the conduct of a missed approach with a climb gradient of at least the gradient required to clear any obstacles in the missed approach flight path in accordance with section 9.06; or
  - (c) the avoidance of obstacles by an acceptable margin using procedures specified in the operator's exposition for specific runway, aerodrome and type of aeroplane combinations.

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## Division 3—Planned landing weights

### 9.13 Purpose of Division 3, Chapter 9

The purpose of this Division is to prescribe:

- (a) the circumstances in which the landing weight of an aeroplane must be calculated under paragraph 121.405(2)(a) of CASR; and
- (b) the methods for calculating the weight under paragraph 121.405(2)(b) of CASR.

### 9.14 Circumstances and methods

- (1) For paragraph 9.13(a), the circumstances before the aeroplane takes off for a flight.
- (2) For paragraph 9.13(b), the methods are as set out in this Division.

### 9.15 Dispatch landing weight—dry runway

- (1) The landing weight of the aeroplane, at the estimated time of arrival at the destination aerodrome or destination alternate aerodrome (if any) for the flight must not be more than a weight that allows a full stop landing at the aerodrome, from a distance that is 50 ft above the runway threshold:
  - (a) for a jet engine aeroplane—within 60% of the landing distance available for the runway; and
  - (b) for a turbo-propeller or piston engine aeroplane—within 70% of the landing distance available for the runway.
- (2) The calculation of the landing weight under subsection (1) must take into account the following factors:
  - (a) a dry runway;
  - (b) the most favourable runway in still air;
  - (c) the runway expected to be used, taking into account the wind speed and direction, instrument approach procedure and terrain;
  - (d) the landing configuration for the aeroplane;
  - (e) the wind direction;
  - (f) the normal consumption of fuel and oil in flight to the destination aerodrome and destination alternate aerodrome;
  - (g) the aerodrome elevation;
  - (h) the runway slope, if greater than +/- 1%;
  - (i) unless otherwise accounted for in the performance data stated in the aeroplane's flight manual, not more than 50% of headwind and not less than 150% of tailwind.

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## 9.16 Dispatch landing weight—wet or contaminated runway

- (1) Subject to subsection (2), if an authorised weather forecast indicates that the runway at the destination aerodrome or destination alternate aerodrome (if any) at the estimated time of arrival, may be wet, the landing distance available at the aerodrome must be at least 115% of the required landing distance calculated under subsection 9.15(1).
- (2) A landing distance on a wet runway shorter than that required under subsection (1), but not less than that required under subsection 9.15(1), may be used if the performance data used in accordance with regulation 121.390 of CASR provides landing distance information for wet runways and the landing distance is calculated in accordance with the information.
- (3) If an authorised weather forecast indicates that the runway at the destination aerodrome or destination alternate aerodrome (if any) at the estimated time of arrival, may be contaminated, the landing distance available at the aerodrome must be at least the greater of the following:
  - (a) the landing distance available, mentioned in subsection (1);
  - (b) 115% of the required landing distance calculated in accordance with the performance data used in accordance with regulation 121.390 of CASR, where the data is specific to operations on contaminated runways.

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## Division 4—Inflight landing weights

### 9.17 Purpose of Division 4, Chapter 9

The purpose of this Division is to prescribe:

- (a) the circumstances in which the landing weight of an aeroplane must be calculated under paragraph 121.415(2)(a) of CASR; and
- (b) the methods for calculating the weight under paragraph 121.415(2)(b) of CASR.

### 9.18 Circumstances and methods

- (1) For paragraph 9.17(a), the circumstances are before the aeroplane lands at the end of a flight.
- (2) For paragraph 9.17(b), the methods are as set out in this Division.

### 9.19 Inflight landing distance

- (1) In this section:

*actual landing distance* means the landing distance required for the actual conditions at the aerodrome using the deceleration devices required to be used for the landing.

- (2) If:

- (a) the performance data used in accordance with regulation 121.390 of CASR contains actual landing data; and
- (b) that data is used when calculating the landing distance required at the aerodrome of intended landing;

the landing weight of the aeroplane must not be greater than a weight at which the landing distance available at the aerodrome is less than 115% of the landing distance required to bring the aeroplane to a full stop on the runway.

- (3) If actual landing distance is not used when calculating the landing distance required at the aerodrome of intended landing, the landing weight of the aeroplane must be a weight that:
  - (a) for a dry runway—meets the requirements of section 9.15; or
  - (b) if weather reports or forecasts, or a combination of weather reports or forecasts, indicate that the runway may, at the estimated time of arrival, be wet or contaminated—meets the requirements of section 9.16.

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## 9.20 Landing climb weight—destination and alternate aerodromes

- (1) The landing weight for an aeroplane must not be more than a weight that would allow a missed approach for the procedure to be carried out:
  - (a) at the destination aerodrome or destination alternate aerodrome (if any) in the one-engine-inoperative missed approach configuration of the aeroplane; and
  - (b) taking into account the pressure altitude and the temperature expected for the estimated time of landing at the relevant aerodrome.
- (2) If an authorised instrument approach procedure is planned to be conducted, the landing weight for the aeroplane must not be more than a weight that would allow, at that landing weight and configuration:
  - (a) the conduct of a missed approach with a climb gradient that greater of:
    - (i) the published missed approach climb gradient for the authorised instrument approach procedure; or
    - (ii) a missed approach climb gradient of at least 2.5%; or
  - (b) the conduct of a missed approach with a climb gradient of at least the gradient required to clear any obstacles in the missed approach flight path in accordance with section 9.07; or
  - (c) the avoidance of obstacles by an acceptable margin using procedures specified in the operator's exposition for specific runway, aerodrome and type of aeroplane combinations.

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## Chapter 10—Weight and balance

### 10.01 Standard weights

- (1) This section prescribes standard weights for the purposes of paragraph 121.440(2)(c) of CASR.
- (2) The standard weight for each passenger and crew member's carry-on baggage (in total) is 7 kg.
- (3) If an aeroplane for a flight has a seating capacity mentioned in an item of column 1 of the following table, being:
  - (a) the number of passenger seats permitted by the aeroplane's maximum operational passenger seat configuration; plus
  - (b) the dedicated crew seats;the standard weight for a passenger or crew member described in column 2, 3, 4, 5, 6 or 7 is the amount set out for the person in the item, measured in kilograms.

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**Standard weights for passengers and crew**

Item	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
	Maximum operational seating capacity	Adult male or a person mentioned in ss 10.01(5)	Adult female	Infant	Child	Adolescent male	Adolescent female
1	7-9	86	71	17	44	65	58
2	10-14	86	70	16	43	64	58
3	15-19	85	69	16	43	63	57
4	20-39	84	69	16	42	63	57
5	40-59	83	68	16	42	62	56
6	60-79	82.5	67.3	16	41	61.4	55.4
7	80-99	82.2	67.1	16	41	61.2	55.3
8	100-149	82	66.9	16	41	61.1	55.2
9	150-299	81.8	66.7	16	41	60.9	55
10	300-499	81.4	66.3	16	41	60.6	54.8
11	500 or more	81.2	66.1	16	41	60.5	54.7

- (4) Despite subsection (3):
  - (a) the standard weight for an infant is taken to be the weight set out in column 5 of the table, if the operator chooses to substitute standard weights for infants with that of children, for the purposes of loading the aeroplane; and

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- (b) the standard weight for an adolescent female is taken to be the weight set out in column 3 of the table, if the operator chooses to substitute standard weights for adolescents with that of adults, for the purposes of loading the aeroplane; and
  - (c) the standard weight for an adolescent male is taken to be the weight set out in column 2 of the table, if the operator chooses to substitute standard weights for adolescents with that of adults, for the purposes of loading the aeroplane.
- (5) A weight set out in column 2 of the table is taken to apply to a person whose gender is indeterminate, intersex or unspecified.
- (6) In this section:

***adolescent*** means a person who has turned 13 but has not turned 16.

***adult*** means a person who has turned 16.

Note: An infant is defined to be a person who has not turned 2, and a child is a person who has turned 2 but has not turned 13: see the definitions of ***child*** and ***infant*** in the CASR Dictionary.

## 10.02 Weight and balance documents

- (1) For the purposes of subregulation 121.455(1) of CASR, weight and balance documents for a flight must include the following:
- (a) the registration mark of the aeroplane;
  - (b) the name of the pilot in command;
  - (c) the name of the person who prepared the weight and balance documents;
  - (d) the date of the flight;
  - (e) the flight identification number or estimated time of departure;
  - (f) the name or identification of the departure aerodrome and the destination aerodrome;
  - (g) the total of the aeroplane's empty weight, the weight of any removable equipment, the weight of consumables and the weight of all the crew members;
  - (h) the weights in the following subparagraphs, separately itemised:
    - (i) the total weight of passengers and carry-on baggage;
    - (ii) the total weight of cargo not otherwise included in subparagraph (i);
    - (iii) the total weight of usable fuel;
  - (i) the aeroplane's zero fuel weight, take-off weight and planned landing weight;
  - (j) the aeroplane's maximum zero fuel weight, maximum take-off weight and maximum landing weight;
  - (k) the weight of all changes specified in the exposition as constituting a last-minute change;

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- (l) evidence that the centre of gravity of the aeroplane is within the limits specified in the aeroplane's flight manual, unless such evidence is specified in the operator's exposition;
  - (m) certification, by the person responsible for planning the loading of the aeroplane, that the load and its distribution are in accordance with the weight and balance documents given to the pilot in command;
  - (n) if the person certifying under paragraph (m) is neither the pilot in command nor the co-pilot—certification by either the pilot in command or the co-pilot (the *relevant pilot*) that the relevant pilot accepts the aeroplane has been loaded as specified in the weight and balance documents.
- (2) Despite paragraph (1)(m) or (n), a certification mentioned in the paragraph does not need to take into account a change to the load that is specified in the operator's exposition as a last-minute change.



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## Chapter 11—Equipment

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## Chapter 12—Flight crew training and checking

Note: Division 91.D.11 of CASR contains requirements that may be relevant to the use of an aeroplane for conducting a training or checking event mentioned in this Chapter.

### Division 1—Flight simulator use: specific aeroplane types

#### 12.01 Requirement to use flight simulators for certain kinds of aeroplanes

For the purposes of paragraph 121.510(1)(b) of CASR, an aeroplane of a kind listed in an item of the following table is prescribed.

<b>Requirement to use flight simulators for certain kinds of aeroplanes</b>		
<b>Item</b>	<b>Column 1</b>	<b>Column 2</b>
	<b>Type certificate holder or manufacturer</b>	<b>Aircraft type rating or model or variant</b>
1	RESERVED	RESERVED
2		

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## Division 2—Initial training for flight crew

- Note 1: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to flight crew members. A flight crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR. Regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.
- Note 2: Other CASR provisions may affect the training that an operator is required to provide to flight crew members. For example, Australian aircraft operators must ensure that certain of its employees undertake dangerous goods training in accordance with regulation 92.110 of CASR before the employee first performs certain duties for the operator.
- Note 3: Other Commonwealth legislation such as the *Navigation Act 2012*, the *Aviation Transport Security Act 2004*, and the *Transport Safety Investigation Act 2003* may also affect the training that an operator is required to provide to flight crew members.

### 12.02 Scope of Division 2, Chapter 12

This Division:

- (a) is made for paragraph 121.555(b) of CASR; and
- (b) prescribes matters that must be included in an aeroplane operator's initial training for a flight crew member.

### 12.03 Flight crew—training facilities and devices: initial training

A training facility or device used to conduct the operator's initial training must meet the requirements of Division 3 of Chapter 13 that apply in relation to the training.

### 12.04 Flight crew—position description and responsibilities training

Initial training for a flight crew member must include training on the following matters:

- (a) the flight crew member's duties and responsibilities during operations, including the need to respond promptly and effectively to emergency situations;
- (b) responsibilities in ensuring that relevant documents and manuals are kept-up-to date;
- (c) responsibilities in ensuring that the flight crew member performs his or her duties in accordance with the operator's exposition;
- (d) identifying when crew members other than flight crew members have the authority and responsibility to initiate an evacuation and any other emergency procedure.

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## 12.05 Flight crew—effective communication and coordination

- (1) Initial training for a flight crew member must include training on the importance of effective communication and coordination:
  - (a) between crew members; and
  - (b) between flight crew members and other parties (such as passengers, dispatchers and other external agencies);in normal, abnormal and emergency situations.
- (2) The training must cover:
  - (a) the importance of pre-flight briefings and communicating necessary safety information during the briefing (between the crew, or the operator and the crew); and
  - (b) communication techniques and the use of common language and terminology; and
  - (c) the necessary information regarding ground-based emergency response procedures that would enable crew members to effectively communicate with external agencies during abnormal and emergency situations; and
  - (d) the importance of coordination between flight crew and cabin crew for operational safety when applying procedures, particularly in abnormal and emergency situations.

## 12.06 Flight crew—fire and smoke: initial training

Initial training for a flight crew member must include training in fire and smoke detection and suppression, including training in:

- (a) the importance of:
  - (i) dealing promptly with flight deck and cabin emergencies involving fire and smoke; and
  - (ii) correctly identifying the source of the fire; and
  - (iii) taking specific actions necessary for coordination and assistance when fire or smoke is discovered; and
- (b) the classification of fires and the appropriate type of extinguishing agents for each classified type of fire; and
- (c) fire-fighting techniques for particular fire situations, including techniques for the application of extinguishing agents; and
- (d) the consequences of misapplication of extinguishing agents and of using extinguishing agents in a confined space; and
- (e) the effects of smoke in an enclosed area; and

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- (f) practical training in fire-fighting that includes the following:
    - (i) extinguishing a fire;
    - (ii) correctly donning and using smoke protection equipment relevant to aviation;
    - (iii) using the fire-fighting equipment, specified for the purpose in the operator's exposition, in a smoke-filled (or simulated smoke-filled) environment.

## 12.07 Flight crew—fatigue and fitness for duty

Initial training for a flight crew member must include training on the following matters:

- (a) the requirements for continuing competence and fitness to operate as a flight crew member, including flight and duty time limitations and rest requirements;
- (b) alertness management, the physiological effects of fatigue, sleep physiology, circadian rhythm and time zone changes.

## 12.08 Flight crew—survival training

### *General*

- (1) Initial training for a flight crew member must include a comprehensive drill requiring the flight crew member to practice post-accident survival skills:
  - (a) relevant to a geographic area over which an aeroplane, in respect of which the flight crew member has been assigned duties, conducts a flight; and
  - (b) that takes into account the availability of search and rescue services to the area.

### *Life jackets*

- (2) The requirements in subsection (3) apply if:
  - (a) life jackets are, under Subpart 121.K of CASR, required to be carried for a flight of an aeroplane operated by the operator; and
  - (b) the flight crew member is assigned to duty for a flight of the aeroplane.
- (3) The training must include a comprehensive drill requiring the flight crew member to:
  - (a) don a life jacket; and
  - (b) practice, in water, the techniques that maximise survival time in the water.

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## *Life rafts, slide rafts & associated equipment*

- (4) The requirements in subsection (5) apply if:
  - (a) life rafts are, under Subpart 121.K of CASR, required to be carried for a flight of an aeroplane operated by the operator; and
  - (b) the flight crew member is assigned to duty on the aeroplane for a flight.
- (5) The following requirements must be met:
  - (a) training of the flight crew member must include a demonstration of:
    - (i) the inflation of life-rafts and slide-rafts carried on the aeroplane; and
    - (ii) any life-saving equipment or survival equipment for the rafts mentioned in regulation 121.335 or 121.340 of CASR; and
  - (b) the training must include a comprehensive drill requiring the flight crew member to:
    - (i) practice boarding the life raft in water; and
    - (ii) practice using the life raft equipment in water.

## **12.09 Flight crew—first aid training**

- (1) This section applies if:
  - (a) a flight crew member is assigned to duty on an aeroplane for a flight; and
  - (b) regulation 121.630 of CASR does not require a cabin crew member to be carried on the aeroplane for the flight.

### *First aid training*

- (2) Initial training for the flight crew member must include basic first aid training that includes instruction about treating the following:
  - (a) airsickness;
  - (b) gastro-intestinal disturbances;
  - (c) wounds;
  - (d) an unconscious person;
  - (e) fractures and soft tissue injuries;
  - (f) if the operator's exposition requires the conduct of a procedure to treat either of the following during a flight:
    - (i) hyperventilation; and
    - (ii) burns.

### *First aid equipment*

- (3) The training must include instruction and practical training on the use of appropriate equipment including first-aid oxygen, first-aid kits, universal precaution kits and emergency medical kits and their contents.

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*Travel health and hygiene*

- (4) The training must include instruction on travel health and hygiene, including:
  - (a) hygiene on board; and
  - (b) the risk of contact with infectious diseases and the means to reduce such risks;
  - (c) handling of clinical waste;
  - (d) aircraft disinsection, if the operator's exposition contains procedures for it.

## **12.10 Flight crew—training for passenger handling**

- (1) This section applies if:
  - (a) a flight crew member is assigned to duty on an aeroplane for a flight; and
  - (b) regulation 121.630 of CASR does not require a cabin crew member to be carried on the aeroplane for the flight.
- (2) Initial training for the flight crew member must include training on passenger handling, including:
  - (a) the importance of correct passenger seat allocation, as follows:
    - (i) correct seat allocation with reference to weight and balance;
    - (ii) correct seat allocation of special categories of passenger (for example, passengers who are ill or incapacitated, with reduced mobility, or restricted passengers);
    - (iii) any requirements relating to the seating of suitable passengers in emergency exit row seats; and
  - (b) regulatory requirements concerning the safe stowage of cabin baggage and cabin service items and the associated risks to safety, for example, that baggage (including a portable electronic device) or service items can:
    - (i) become a hazard to occupants; and
    - (ii) obstruct or damage the emergency equipment or exits; and
  - (c) precautions for when live animals are carried in the passenger compartment; and
  - (d) the handling of a death on board; and
  - (e) the identification of passengers affected by psychoactive substances; and
  - (f) the conduct of passenger briefings and passenger safety demonstrations before flight; and
  - (g) motivation of passengers and crowd control during an evacuation of the aeroplane.

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## 12.11 Flight crew—training in the physiological effects of flying

Initial training for a flight crew member must include training about the physiological effects of flying, including instruction on the following:

- (a) hypoxia;
- (b) oxygen requirements;
- (c) the atmosphere and atmospheric pressure;
- (d) pressurised and non-pressurised aircraft cabins;
- (e) the physiological effects of pressure changes in the body, dealing with, for example, gases, cavities, sinuses, eustachian tubal function and barotrauma;
- (f) time of useful consciousness.



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## Division 3—Conversion training requirements for flight crew

### 12.13 Scope of Division 3, Chapter 12

This Division:

- (a) is made for paragraph 121.560(1)(a) of CASR; and
- (b) prescribes requirements for conversion training for a flight crew member in relation to an operator and an aeroplane of a particular kind.

Note: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to flight crew members:

- (a) a flight crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### 12.14 Flight crew—training facilities and devices: conversion training

- (1) This section applies to conversion training that is not required to be carried out in a flight simulator under regulation 121.510 of CASR.
- (2) A training facility or device used to conduct conversion training in relation to an aeroplane of a particular kind, must meet the requirements of Division 3 of Chapter 13 that apply to the training and an aeroplane of that kind.

### 12.15 Flight crew—normal, abnormal and emergency procedures: conversion training

- (1) Conversion training for a flight crew member and an aeroplane of a particular kind must include training on the limitations and normal, abnormal and emergency procedures for an aeroplane of that kind.

#### *Normal procedures*

- (2) The training must cover standard operating procedures that relate to the flight crew member's safety-related duties and responsibilities during normal day-to-day operations, including the following:
  - (a) safety procedures for normal operations;
  - (b) procedures for turbulence;
  - (c) the operation of equipment and aircraft systems;
  - (d) management of, and assistance to, the passengers;
  - (e) communication and coordination with crew members and other personnel who have safety-related duties (for example, ground crew);
  - (f) security requirements and procedures.

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## *Abnormal and emergency procedures*

- (3) The training must cover the procedures for abnormal and emergency situations in flight and on the ground, including the following:
- (a) engine and airframe fires, and fires in the cargo compartment in the event the cargo compartment is inaccessible in flight to the crew;
  - (b) engine failures;
  - (c) fire, smoke or fumes in the flight deck;
  - (d) if cabin crew are not required to be carried on an aeroplane of that kind—fire, smoke or fumes in the passenger cabin;
  - (e) cabin pressurisation problems and decompression;
  - (f) unlawful interference;
  - (g) anticipated and unanticipated landing or ditching;
  - (h) rapid disembarkation;
  - (i) evacuation on land and water;
  - (j) crew communication and coordination (within the meaning of subsection 12.05(1)).

## *Specific flight procedures training*

- (4) The training must also cover the following:
- (a) any flight procedures or manoeuvres, conducted in an aeroplane of that kind, for which the operator holds an approval issued under regulation 91.045 or 121.010 of CASR;
  - (b) the procedures for any other operations conducted by the operator in an aeroplane of that kind that the flight crew member has not previously experienced (for example, precision runway monitor operations, LAHSO).

Note: Examples of approvals issued under regulation 91.045 or 121.010 of CASR include approvals to conduct EDTO, low visibility operations, operations in RVSM airspace, and flights using a PBN navigation specification such as RNP AR, DP or APCH.

## *Upset prevention and recovery—certain aeroplanes*

- (5) On and after 31 March 2022, if an aeroplane of that kind has a maximum certificated passenger seating capacity of 30 seats or more, the training must include a program of upset prevention and recovery training (UPRT) that covers the following areas:
- (a) upset awareness;
  - (b) upset prevention;
  - (c) upset recovery.
- (6) The training must include a practical component in which the flight crew member participates in simulated realistic scenarios that allow the crew member to practice what is covered by the training.

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## 12.16 Flight crew—crew incapacitation procedures: conversion training

- (1) Conversion training for a flight crew member and an aeroplane of a particular kind must include training on:
  - (a) how flight crew are to respond in the event of crew incapacitation during normal, abnormal and emergency situations; and
  - (b) the elements specific to an aeroplane of that kind and the conditions relevant to the response.
- (2) The training must include instruction on how to operate any equipment fitted to, or carried on, an aeroplane of that kind that relates to treating an incapacitated crew member (for example, crew seats, first aid oxygen).
- (3) The training must include a practical component which the flight crew member participates in simulated realistic scenarios that allow practice in what has been covered by the training.

## 12.17 Flight crew—doors and exits: conversion training

- (1) Conversion training for a flight crew member and an aeroplane of a particular kind must include practical training on the operation of each door and exit (including any flight deck window or hatch):
  - (a) fitted to each model or variant of an aeroplane of the aeroplane kind to which the crew member has been assigned duties; and
  - (b) in normal and emergency mode.
- (2) The training must include use of the means for assisting evacuation on the aeroplane (for example, escape ropes or slides).
- (3) However, the training on the means of assisting evacuation, other than in relation to an evacuation slide, is not required to be practical in nature.

## 12.17A Flight crew—evacuation slides

- (1) Conversion training for a flight crew member and an aeroplane of a particular kind must include training on the use of each evacuation slide that is fitted to, or carried on, the aeroplane (the *first-mentioned aeroplane*).
- (2) If:
  - (a) the crew member is assigned to duty on another aeroplane of that kind; and
  - (b) an evacuation slide fitted to, or carried on, that aeroplane is different to an evacuation slide fitted to, or carried, on the first-mentioned aeroplane;then conversion training must include training on the use of the different slide.
- (3) The training must include a practical component requiring the flight crew member to safely complete a descent using an evacuation slide representative of one fitted to an aeroplane of that kind.

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- (4) For the purposes of subsection (3), if the aeroplanes of that kind have more than one passenger deck, the descent using an evacuation slide is required to be conducted from the height of the lower passenger deck only.
  - (5) Despite subsection (3), a descent in relation to an aeroplane of that kind (the *relevant aeroplane*) need not be conducted if:
    - (a) the crew member has completed a descent when undertaking conversion training for an aeroplane of a different kind with the same operator; and
    - (b) any difference in the characteristics of the evacuation slide used for that descent (such as height or width of the slide, or angle of the slide with respect to the ground) are not significant enough to affect the outcomes of the training regarding the crew member's competency to perform a descent using an evacuation slide for the relevant aeroplane.

## **12.17B Flight crew—safety and emergency equipment and aircraft systems: conversion training**

- (1) Conversion training for a flight crew member and an aeroplane of a particular kind must include training on the location and use of each item of safety and emergency equipment that is fitted to, or carried on, an aeroplane of that kind.
- (2) The training must include a practical component in which the flight crew member practices:
  - (a) using each item of equipment; and
  - (b) removing any portable item of equipment.
- (3) The training must also include a practical component in which the flight crew member participates in simulated realistic scenarios that allow practice in what has been covered by the training.

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## Division 4—Recurrent flight training for flight crew

### 12.18 Scope of Division 4, Chapter 12

This Division:

- (a) is made for paragraph 121.570(1)(b) of CASR; and
- (b) prescribes requirements for recurrent flight training for a flight crew member in relation to an operator and an aeroplane of a particular kind.

### 12.19 Flight crew—recurrent flight training requirements

- (1) Recurrent flight training in relation to an aeroplane of a particular kind must be carried out using an aeroplane of that kind or an approved flight simulator for an aeroplane of that kind.

Note: Regulation 121.510 of CASR requires recurrent flight training to be conducted in an approved flight simulator in certain circumstances.

- (2) Recurrent flight training for a flight crew member must include training that encompasses the units of competency prescribed in the Part 61 Manual of Standards for the grant of:
  - (a) if the flight crew member holds a type rating for an aeroplane of that kind—the type rating; and
  - (b) if the flight crew member holds a class rating for an aeroplane of that kind—the class rating.
- (3) Recurrent flight training must include:
  - (a) training or education that the operator's safety management system has identified for flight crew members in relation to an aeroplane of that kind; and
  - (b) training in normal, abnormal and emergency procedures; and
  - (c) any other training required for the flight crew member, in relation to an aeroplane of that kind, by the operator's training and checking system.
- (4) On and after 31 March 2022, if an aeroplane of that kind has a maximum certificated passenger seating capacity of 30 seats or more, recurrent flight training must include a program of upset prevention and recovery training (UPRT) that covers the following areas:
  - (a) upset awareness;
  - (b) upset prevention;
  - (c) upset recovery.

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- (5) Recurrent training must include a course of training:
- (a) in the failures of any system of an aeroplane of that kind that has checklist procedures in the aircraft flight manual instructions; and
  - (b) covering each major system failure, for an aeroplane of that kind:
    - (i) at least once every four years; or
    - (ii) more frequently in accordance with subsection (6).
- (6) For paragraph 5(b), the operator must use feedback from the operator's safety management system, and flight data analysis program (if any), to determine whether a major system failure for an aeroplane of that kind should be covered by the course more frequently than once every 4 years.
- (7) In this section:
- major system failure***, in relation to an aeroplane, means a failure associated with the aeroplane's electrical, hydraulic, fuel or pressurisation system.
- (8) The flight crew member completes the recurrent training for a year if the flight crew member completes the portion of the course that the operator, in accordance with subsection (5), provides for that year.

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## Division 5—Part 121 proficiency check

### Subdivision A—Part 121 proficiency check for pilots

#### 12.20 Scope of Subdivision A, Division 5 of Chapter 12

This Subdivision:

- (a) is made for subregulation 121.580(1) of CASR; and
- (b) sets out requirements for a Part 121 proficiency check for a pilot in relation to an aeroplane of a particular kind.

#### 12.21 Proficiency check requirements

##### *Use of aeroplane or simulator*

- (1) A Part 121 proficiency check for an aeroplane of a particular kind must be carried out in an aeroplane of that kind or an approved flight simulator for an aeroplane of that kind.

Note: Regulation 121.510 of CASR requires recurrent flight training to be conducted in an approved flight simulator in certain circumstances.

##### *Application to cruise-relief co-pilots*

- (2) If the pilot does not hold a type rating covering an aeroplane of that kind other than a cruise-relief co-pilot rating, the requirements of this section are subject to subsection 12.22(4).

##### *Limitations on flight manoeuvres*

- (3) During the proficiency check, the flight manoeuvres performed by the pilot under check must not involve sustained deviations outside the flight tolerances specified in table 2 in section 1 of Schedule 8 to the Part 61 Manual of Standards.
- (4) If the proficiency check involves the conduct of an instrument approach operation, the flight manoeuvres performed by the pilot under check must also not involve sustained deviations outside the flight tolerances specified in table 5 of section 1 of Schedule 8 to the Part 61 Manual of Standards.

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*When check to be performed in IMC etc.*

- (5) The pilot must perform the proficiency check in IMC or simulated IMC during the period:
- (a) beginning at the end of take-off; and
  - (b) reaching the landing minima for the operator and the aerodrome (the *minima*).

Note: The landing minima for the operator and the aerodrome are those determined in accordance with procedures in the operator's exposition and the prescribed landing minima requirements: see regulation 121.185 of CASR.

*Manoeuvres generally*

- (6) The pilot must perform the following manoeuvres for the proficiency check:
- (a) if the pilot is qualified as a pilot in command under regulation 121.495 of CASR—a rejected take-off; and
  - (b) take-off with engine failure between  $V_1$  and  $V_2$ ; and
  - (c) a 3D instrument approach operation to minima with one engine inoperative;
  - (d) a 2D instrument approach operation to minima;
  - (e) a missed approach from minima with one engine inoperative;
  - (f) a landing with one engine inoperative.

*Pilots who may conduct operations from both pilot seats*

- (7) If the pilot will be required to operate an aeroplane of that kind from both the left-hand and the right-hand pilot seats, the pilot must perform the following manoeuvres during the proficiency check in the seat that is not the pilot's normal pilot seat:
- (a) take-off with engine failure between  $V_1$  and  $V_2$ ;
  - (b) either a 3D or 2D instrument approach to minima with one engine inoperative;
  - (c) a missed approach from minima with one engine inoperative;
  - (d) a landing with one engine inoperative.

*Manoeuvres not conducted in flight simulator*

- (8) If the proficiency check is conducted in an aeroplane, then, despite subsection (6) or (7):
- (a) the rejected take-off manoeuvre is to be performed using touch drills only; and
  - (b) the take-off with engine failure manoeuvre is only to be initiated at a safe speed above  $V_2$ ; and



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- (c) the 3D instrument approach operation to minima with one engine inoperative is only to be conducted with a simulated engine inoperative; and
  - (d) the landing with one engine inoperative is only to be performed with a simulated engine inoperative.

## *Delegation of conduct of flight*

- (9) If the pilot can be delegated the conduct of a flight of an aeroplane of that kind under subregulation 121.535(3) of CASR (relief of the pilot in command), the proficiency check must include an assessment of the pilot's competence in conducting procedures applicable at or above flight level 200 that:
  - (a) are stated in:
    - (i) the operator's exposition for the aeroplane; or
    - (ii) the aircraft flight manual instructions for the aeroplane; and
  - (b) are solely the responsibility of the pilot in command for a flight of the aeroplane.

## *Manoeuvre for ACAS II resolution advisory*

- (10) If the pilot has not, for a valid Part 121 proficiency check, been assessed as competent in performing the correct manoeuvre in response to an ACAS II resolution advisory within the previous 2 years, the pilot must perform the manoeuvre, for the proficiency check, in accordance with subsection (11).
- (11) Despite subsection (1), if the proficiency check is not required to be conducted in an approved flight simulator by regulation 121.510 of CASR, the performance of the manoeuvre mentioned in subsection (10) must be carried out using a training device which meets the requirements prescribed by section 13.08.

## *Knowledge*

- (12) The pilot must demonstrate his or her knowledge of the following topics, as they relate to an aeroplane of that kind and the operator's operations, to the standard specified in the operator's exposition:
  - (a) navigation and operating systems;
  - (b) normal, abnormal and emergency procedures;
  - (c) operating limitations;
  - (d) the flight rules.

Note: The definitions of ACAS, *resolution advisory*, TCAS and *traffic advisory* will be included in Chapter 11 (equipment).

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## **12.22 Cruise relief co-pilots—proficiency check requirements**

- (1) This section applies to a pilot who does not hold a type rating covering an aeroplane of that kind other than a cruise-relief co-pilot rating.
- (2) Subject to subsections (3) and (4), a Part 121 proficiency check for the pilot must check the competency of the pilot in accordance with the cruise relief co-pilot type rating flight test in Appendix L.5, section L of Schedule 5 to the Part 61 Manual of Standards.
- (3) The flight tolerances for the proficiency check must be those specified in Table 2 in Section 1 of Schedule 8 to the Part 61 Manual of Standards.
- (4) The knowledge requirements and practical flight standards required by Part 61 are, for the purposes of the proficiency check, limited to the requirements and standards relevant to the conduct of normal, abnormal and emergency flight procedures in the climb, cruise and descent phases of flight above flight level 200.
- (5) The proficiency check must be conducted by reference only to flight deck instruments.

## **Subdivision B—Part 121 proficiency check for flight engineers**

### **12.23 Flight engineers—Part 121 proficiency check requirements**

For the purposes of subregulation 121.580(4) of CASR, a Part 121 proficiency check for a flight engineer and an aeroplane of a particular kind must check the competency of the flight engineer in accordance with the flight engineer type rating flight test in Appendix W.2, section W of Schedule 5 to the Part 61 Manual of Standards.

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## **Division 6—Annual emergency and safety equipment training for flight crew**

### **12.24 Scope of Division 6, Chapter 12**

This Division:

- (a) is made for paragraph 121.610(1)(c) of CASR; and
- (b) prescribes matters for annual emergency and safety equipment training for a flight crew member in relation to an operator and an aeroplane of a particular kind.

Note: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to flight crew members:

- (a) a flight crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### **12.25 Flight crew—training facilities and devices: annual training**

A training facility or device used to conduct annual emergency and safety equipment training in relation to an aeroplane of a particular kind, must meet the requirements of Division 3 of Chapter 13 that apply to the training and an aeroplane of that kind.

### **12.26 Flight crew—general requirements: annual emergency and equipment training**

Annual emergency and safety equipment training mentioned in this Division must, in relation to the equipment that is the subject of the training:

- (a) give a general description of the equipment;
- (b) instruct about pre-flight serviceability of the equipment;
- (c) instruct about the operation of the equipment;
- (d) instruct about the conditions required for the operation of the equipment;
- (e) instruct on the operational limitations of the equipment and duration of use;
- (f) instruct on precautions for use of the equipment;
- (g) instruct about the failure modes of the equipment;
- (h) instruct about the location of the equipment;
- (i) the relevant communication and coordination activities with crew members and other personnel.

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## 12.27 Flight crew—items of emergency and safety equipment

- (1) Annual emergency and safety equipment training for a flight crew member, in relation to an aeroplane of a particular kind, must cover each item of safety or emergency equipment that is fitted to, or carried on, the aeroplanes of that kind in respect of which the flight crew member has been assigned duties (the *relevant aeroplanes*).
- Note: Examples of safety and emergency equipment carried on aeroplanes include fire extinguishers, first aid kits, protective gloves, axes, flashlights, emergency locator transmitters, survival equipment and megaphones.
- (2) If life-jackets are carried on a relevant aeroplane, the training must cover donning of life-jackets.
  - (3) If a relevant aeroplane carries portable oxygen equipment or protective breathing equipment—the training must cover donning of the equipment.
  - (4) The training must include a practical component in which the flight crew member practices handling the equipment mentioned in this section (other than the equipment mentioned in subsection (5)).
  - (5) The requirement in subsection (4) does not apply in relation to:
    - (a) life rafts, slide rafts or signalling equipment; or
    - (b) if other survival equipment has been determined by the operator, using the procedures mentioned in regulation 121.340 of CASR, for a relevant aeroplane—that equipment.

Note: An annual emergency and safety equipment check covering the training, that is not carried out in a relevant aeroplane, must be carried out using a training facility or device that meets the requirements in Division 3 of Chapter 13: see paragraph 121.610(2)(c) of CASR.

## 12.28 Flight crew—doors and other exits for passenger evacuation: annual training

### *Application*

- (1) This section applies to a normal and emergency exit:
  - (a) fitted to an aeroplane of a particular kind in relation to which a flight crew member has been assigned duties (the *first-mentioned aeroplane*); and
  - (b) that enables passenger evacuation (a *passenger evacuation exit*).
- (2) If:
  - (a) the flight crew member is assigned to duty on another aeroplane of that kind; and
  - (b) a passenger evacuation exit on the aeroplane is different to any of the passenger evacuation exits on the first-mentioned aeroplane;then this section also applies to that exit.

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## *Training on operating the exits and evacuation procedures*

- (3) Annual emergency and safety equipment training for the flight crew member must cover:
  - (a) the operation of each of the exits to which this section applies in normal and emergency mode; and
  - (b) the evacuation procedures that relate to using the exits for passenger evacuation.

## *Means for assisting evacuation*

- (4) The training must include instruction on use of the means for assisting evacuation on the aeroplane to which the exit is fitted (for example, escape ropes or evacuation slides).

## *Flight crew compartment security door*

- (5) The training must also include:
  - (a) instruction on the operation of the flight crew compartment security door fitted to the first-mentioned aeroplane; and
  - (b) if:
    - (i) the flight crew member is assigned to duty on another aeroplane of that kind (the *second-mentioned aeroplane*); and
    - (ii) the flight crew compartment security door on the second-mentioned aeroplane is different to the one fitted on the first-mentioned aeroplane;instruction on the operation of the door fitted to the second-mentioned aeroplane.
- (6) The training must include a practical component in which the flight crew member:
  - (a) operates and opens, in normal and emergency mode, the exits:
    - (i) for which the flight crew member is assigned responsibility as required by the operator's evacuation procedures; or
    - (ii) for which there is a possibility that, in the event of cabin crew member incapacitation during an emergency, the flight crew member could be required to operate the exit; and
  - (b) participates in simulated realistic scenarios that allow practice in what has been covered by the training.

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## 12.29 Flight crew—safety and emergency procedures: annual training

- (1) Annual emergency and safety equipment training for a flight crew member, in relation to an aeroplane of a particular kind, must include training on the operator's safety related and emergency procedures for the aeroplanes of that kind in respect of which the flight crew member has been assigned duties (the *relevant aeroplanes*).
- (2) The training must cover safety-related procedures for the stowage of articles in the cabin.
- (3) The training must cover emergency procedures for the following:
  - (a) unlawful interference;
  - (b) explosive device in a relevant aeroplane on the ground or in the air;
  - (c) evacuation on land and water;
  - (d) fighting fires inside the aeroplane.
- (4) The training must include practical training of the flight crew member in at least the application of procedures for the emergency evacuation of the relevant aeroplanes on the ground and in the water.
- (5) The training on the operator's emergency procedures must:
  - (a) familiarise the flight crew member with the duties that should be performed by other crew members for the procedures; and
  - (b) cover training in effective coordination of the procedures and two-way communication between the flight crew and other crew members.
- (6) The training must also cover post-accident survival techniques on land and water and the use of related survival equipment.

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## Division 7—The 3 yearly emergency and safety equipment training and checking requirements for flight crew

### 12.31 Scope of Division 7, Chapter 12

- (1) This section:
- (a) is made for of paragraph 121.620(1)(c) of CASR; and
  - (b) prescribes matters that must be covered by 3 yearly emergency and safety equipment training for a flight crew member in relation to the operator and an aeroplane of a particular kind.

Note 1: The 3-yearly emergency and safety equipment training for a pilot, or a flight engineer, must relate to the duties the person has for an aeroplane in relation to emergency and safety equipment carried on the aeroplane: see paragraphs 121.620(1)(a) and (b).

Note 2: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to flight crew members:

- (a) a flight crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### 12.32 Flight crew—training facilities and devices: 3-yearly training

A training facility or device used to conduct 3-yearly emergency and safety equipment training in relation to an aeroplane of a particular kind, must meet the requirements of Division 3 of Chapter 13 that apply to the training and an aeroplane of that kind.

### 12.33 Flight crew—3-yearly emergency and safety equipment training

- (1) The 3-yearly emergency and safety equipment training for a flight crew member, in relation to an aeroplane of a particular kind, must include the following training, in relation to the aeroplanes of that kind in respect of which the flight crew member has been assigned duties (*the relevant aeroplanes*):
- (a) safely operating each kind of evacuation slide that is carried on, or fitted to, a relevant aeroplane;
  - (b) if life-rafts are, under Subpart 121.K of CASR, required to be carried on a relevant aeroplane—training in the use of a life-raft and its associated equipment;
  - (c) training in the use of signalling equipment fitted to, or carried on, a relevant aeroplane;

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- (d) training on fire-fighting that requires the flight crew member to complete a fire drill in a smoke-filled (or simulated smoke-filled) environment, using all of the fire-fighting equipment relevant to the flight crew member's duties on a relevant aeroplane, including the donning and use of protective clothing and protective breathing equipment;
  - (e) training in the operation of any exit on a relevant aeroplane that enables passenger evacuation and is not covered by the training mentioned in paragraph 12.28(6)(a);
  - (f) training in the method of opening the flight crew compartment security door (if any) in emergency mode.
- (2) The training mentioned in subsection (1) (other than paragraph (a)) must be practical in nature and not theoretical.

Note: A 3-yearly emergency and safety equipment check for the flight crew member must be carried out using the relevant aeroplane or a training facility or device that meets the requirements of Division 3 of Chapter 13, as they relate to the aeroplane: see paragraph 121.620(2)(b).



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## Chapter 13—Cabin crew training and checking

### Division 1—English Language proficiency

#### 13.01 Prescribed requirements for English language proficiency

##### *Requirements*

- (1) For the purposes of paragraph 121.655(1)(b) of CASR, the requirements for English language proficiency that must be met by a person assigned to duty as a cabin crew member are that:
  - (a) either subsection 13.01A(1) (English as a foreign language tests) or subsection 13.01A(2) (education or English language work experience) applies to the person; and
  - (b) the person:
    - (i) has been assessed as meeting the English language performance standard mentioned in subsection (2) by a member of the operator's personnel (the *assessor*) who is authorised by the operator to carry out the assessment; and
    - (ii) holds an assessment report issued by the assessor that states the person has met the standard.

##### *English language performance standard*

- (2) The English language performance standard is the ability of a person to demonstrate the person can:
  - (a) pronounce words clearly, using an accent that does not cause difficulties in understanding; and
  - (b) convey information in clearly structured sentences without confusion or ambiguity; and
  - (c) use an extensive vocabulary to accurately communicate on general and technical topics, without excessive use of jargon, slang or colloquial language; and
  - (d) speak fluently without long pauses, repetition or false starts; and
  - (e) respond to communications with actions that demonstrate that the information has been received and understood; and
  - (f) exchange information clearly in a variety of situations with both expert and non-expert English speakers while giving and receiving timely and appropriate responses; and
  - (g) use appropriate techniques such as questioning, non-verbal communication and paraphrasing to validate communications.

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- (3) The performance standard applies to oral and written communications and in face-to-face situations relevant to the duties and obligations of a cabin crew member in an aviation technical learning environment.

## 13.01A English language tests, education or work experience

### *English as a foreign language tests*

- (1) For the purposes of paragraph 13.01(1)(a), this section applies to a person who has documentary evidence that the person has completed:
- (a) the International English Language Testing System (IELTS) general or academic training module, with an overall grade of 5.5, and no individual grade in a paper lower than 5; or
  - (b) the Test of English for International Communication (TOEIC-Secure Program Public Testing Centre), with grades not less than:
    - (i) 350 for listening; and
    - (ii) 300 for reading; and
    - (iii) 160 for speaking; and
    - (iv) 140 for writing; or
  - (c) the Test of English as a Foreign Language internet-based test (TOEFL IBT) with a grade not less than 71; or
  - (d) the Test of English as a Foreign Language computer-based test (TOEFL CBT) with a grade not less than 197; or
  - (e) the Test of English as a Foreign Language paper-based test (TOEFL PB) with a grade not less than 530.

### *Education or English language work experience*

- (2) For the purposes of paragraph 13.01(1)(a), this section applies to a person who:
- (a) has completed a minimum of 3 years of secondary education in an Australian or New Zealand education institution in which the principle language of instruction is English; or
  - (b) has completed a minimum of 3 years in a course that is at least the equivalent of an Australian secondary education in an educational institution in a country where one of the principal languages of instruction was English; or
  - (c) has worked in Australia or New Zealand for at least 3 of the 5 years immediately before commencing employment as a cabin crew member with the operator; or

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- (d) has worked in one of the following countries for at least 3 of the 5 years immediately before commencing employment as a cabin crew member with the operator:
  - (i) United Kingdom;
  - (ii) Republic of Ireland;
  - (iii) United States of America; or
- (e) has worked in Canada for at least 3 of the 5 years immediately before commencing employment with the operator as a cabin crew member and has documentary evidence showing the use of English in the workplace.

Note 1: For public consultation purposes, readers should be aware that this Division has been deliberately based on the General English language proficiency standard for recreational pilots and student pilots contained in Section 1 of Schedule 2 of the Part 61 Manual of Standards (ie, it is not the higher Aviation English standard). It has been modified to remove, as appropriate, any elements of the standard that specifically reference pilot training. CASA considers that this Division represents an effective and appropriate standard.

Note 2: For public consultation purposes, respondents are advised that as part of the flight operations regulations transitional arrangements, existing cabin crew who have completed their training and have been “checked to line” will not be required to retrospectively comply with the standards in this Division.

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## Division 2—Senior cabin crew members: training and checking

### 13.02 Scope of Division 2, Chapter 13

This Division:

- (a) is made for the purposes of paragraph 121.665(1)(b) of CASR; and
- (b) prescribes training and checking that must be successfully completed by a senior cabin crew member in relation to an aeroplane and a flight.

### 13.03 Senior cabin crew training

Training for a senior cabin crew member must cover the duties and responsibilities of the senior cabin crew member, and include at least the following:

- (a) how to deliver briefings regarding normal, abnormal and emergency situations;
- (b) communication, cooperation and coordination with the crew and other personnel;
- (c) the operator's procedures and the requirements of the civil aviation legislation;
- (d) the administrative tasks required by the operator;
- (e) reporting systems and requirements;
- (f) fatigue management.

Note: Provisions in Part 119 relating to human factors and non-technical skills also affect the training that an operator is required to provide to senior cabin crew members:

- (a) regulation 119.180 of CASR makes it a requirement that a cabin crew member must not carry out a duty of the person's position unless the person meets the requirements in the operator's exposition about training in human factors principles and non-technical skills; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### 13.04 Senior cabin crew competency checks

- (1) A competency check for a senior cabin crew member must check the competency of the person in carrying out the duties and responsibilities of the senior cabin crew member.
- (2) The senior cabin crew member must meet the competency level specified in the operator's exposition for a competency check of a senior cabin crew member.

Note: A senior cabin crew member must also meet the training and checking requirements applicable to a cabin crew member under Division 121.P.2 of Part 121 of CASR (including Divisions 4 to 7 in this Chapter).

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## Division 3—Training facilities and devices

### 13.05 Scope of Division 3, Chapter 13

- (1) For the purposes of subregulation 121.680(2) of CASR, this Division prescribes requirements for a training facility or device that is used to carry out training and checking of crew members.
- (2) This Division has requirements for training facilities and the following training devices:
  - (a) cabin training devices;
  - (b) emergency exit trainers;
  - (c) safety or emergency equipment;
  - (d) any other device used for:
    - (i) training or checking on safety or emergency equipment; or
    - (ii) training or checking on safety or emergency procedures; or
    - (iii) any other training or checking.

Note 1: Under regulation 121.680 of CASR, training and checking of a cabin crew member that is carried out using a training facility or device must be carried out using a facility or device that is specified in the operator's exposition and meets the requirements prescribed by this instrument.

Note 2: A training facility or device that is used (instead of an aeroplane) to conduct an annual or 3-yearly emergency and safety equipment check of flight crew must meet the requirements prescribed under this Division for the purposes of regulation 121.680. See paragraphs 121.610(2)(c) and 121.620(2)(c) of CASR.

Note 3: Some elements of flight crew training prescribed under Chapter 12 also require compliance with the training facility or device standards in this Division: see sections 12.03, 12.14, 12.25 and 12.32.

### 13.06 Definitions for training facilities and devices

In this instrument:

***cabin training device*** means a device that simulates an aeroplane or part of an aeroplane.

***emergency exit trainer*** means a stand-alone device comprising an emergency exit and any other feature that is necessary to enable the device to be used to assess a crew member's competence to operate the exit.

### 13.07 Training facilities—general requirements

A training facility that is used for training or checking must be equipped with the safety and emergency equipment and other devices that would enable that training or checking to be conducted in accordance with the training and checking requirements in Part 121 of CASR, this Manual of Standards, and the operator's training and checking system.

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## 13.08 Training devices—general requirements

- (1) A device used, instead of an aeroplane, for training or checking a crew member must be capable of re-creating realistic situations for providing effective training or checking to a crew member.
- (2) A device used for training a crew member must be adequate and appropriate to ensure that the objectives of the training can be achieved.
- (3) A device used to conduct a check of a crew member must be capable of being used by the crew member to demonstrate the competencies being checked.
- (4) A device used to carry out training or checking must include the components necessary for the training or checking, including all the equipment required for the completion of practical exercises relevant to the training.

Example: A cabin training device used for fire-fighting training must be equipped to enable the crew member to complete practical exercises in fire-fighting.

### *Multiple cabin crew environment*

- (5) If a cabin training device, or other device, is used to train crew members in operations conducted using multiple cabin crew, the device must be capable of assessing the competency of a member of the crew in a multiple cabin crew environment.

### *Simulated scenarios generally*

- (6) A cabin training device or other device that will use a particular scenario to carry out training of a crew member in relation to an aeroplane must include any equipment, exits, aircraft systems, and other feature or component that is relevant for the scenario.

### *Simulations for emergency procedures*

- (7) If the device is used to carry out training of a crew member in emergency procedures, it must be capable of simulating a realistic environment applicable to the relevant emergency scenario (for example, a smoke-filled cabin).

## 13.09 Fire-fighting training facilities and devices

- (1) Practical training using a fire-fighting simulated exercise must be conducted in an area that adequately simulates the confined space and obstacles of an aircraft cabin.
- (2) Fire extinguishers used for live fire-fighting exercises must be charged with an agent that adequately simulates the flow rate and dispersal pattern of the agent used in fire extinguishers fitted to, or carried on, aeroplanes operated by the operator.

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- (3) If a training facility or device is used to simulate a fire, it must adequately simulate the characteristics of a fire relevant to the training (for example, flame, heat, smoke or a fire's reaction to the application of an extinguishing agent).

## 13.10 Water survival training facilities

If wet drills are to be, or are required by this Manual of Standards to be, conducted in a practical exercise at a training facility, the facility must have a body of water or pool of sufficient depth to enable the exercise to be realistically performed.

## 13.11 Devices used for training on safety or emergency equipment

- (1) If training and checking for a crew member involves training or checking a crew member on safety and emergency equipment (the *relevant equipment*) fitted to, or carried on, an aeroplane, the equipment or other device used for the training or checking must be representative of the relevant equipment in accordance with this section.
- (2) Safety or emergency equipment used for the training or checking must:
  - (a) be the same, or substantially the same, equipment fitted to, or carried on, the aeroplane; and
  - (b) be capable of being used by the crew member to demonstrate a competency:
    - (i) relating to the functionality, purpose or use of the equipment that is fitted to, or carried on, the aeroplane; and
    - (ii) that is the subject of the training.
- (3) A device used for the training or checking, that incorporates safety or emergency equipment, must:
  - (a) have incorporated into the device equipment that is the same, or substantially the same, safety or emergency equipment fitted to, or carried on, the aeroplane; and
  - (b) be capable of being used by the crew member to demonstrate a competency:
    - (i) relating to the functionality, purpose or use of the safety or emergency equipment that is fitted to, or carried on, the aeroplane; and
    - (ii) that is the subject of the training.

## 13.12 Cabin training devices etc., must be representative

- (1) This section applies to a cabin training device, exit trainer and any other device that is used for training or checking a crew member in relation to an aeroplane type.

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- (2) Any dials, handles, switches, restraint brackets and mounting devices that are included in the device must be representative of those fitted to, or carried on, an aeroplane of that type, in respect of:
    - (a) their operation; and
    - (b) any force required for their operation.
  - (3) The direction of movement, associated forces and travel of all controls on equipment in the device must be representative of the equipment fitted to, or carried on, an aeroplane of that type, including the weight of an emergency exit operated without power assist.
  - (4) The weight of any emergency exit hatch included in the device, must be representative of the emergency hatch fitted to the aeroplane.
  - (5) Safety and emergency equipment included in the device must be:
    - (a) secured in brackets or mounting devices that are representative of those found on an aeroplane of that type; and
    - (b) located and stowed in a way representative of the location and stowage of the equipment on an aeroplane of that type.

## **13.13 Devices for emergency evacuation and emergency exit training**

- (1) A cabin training device used to carry out training of a crew member in emergency evacuations of an aeroplane using a particular scenario, must also include the features that are relevant in the scenario, including:
  - (a) the capability to operate exits in both normal and emergency modes, particularly in relation to the method of operation and the ways of operating the exits;
  - (b) the width, height and angle of inflated evacuation slides that are representative of those used for an aeroplane of that type;
  - (c) operational exits sufficient to carry out practical training of a crew member in relation to the aeroplane;
  - (d) a simulation of an unserviceable exit or exits;
  - (e) a simulation of hazards at emergency exits, for example, an obstacle, or fire or water.
- (2) An emergency exit trainer, cabin training device or other device used for training or checking of a crew member in the operation of an emergency exit for an aeroplane type, must also meet the following requirements:
  - (a) it must replicate the size and weight of an emergency exit of an aeroplane of that type; and
  - (b) it must replicate the operating characteristics of the exit; and
  - (c) it must permit the exit to be operated in both normal and emergency modes, particularly in relation to the method of operation and the forces required to operate them.



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## Division 4—Initial training for cabin crew

- Note 1: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to cabin crew members. A cabin crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR. Regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.
- Note 2: Other CASR provisions may affect the training that an operator is required to provide to cabin crew members. For example, Australian aircraft operators must ensure that certain of its employees undertake dangerous goods training in accordance with regulation 92.110 of CASR before the employee first performs certain duties for the operator.
- Note 3: Other Commonwealth legislation such as the *Navigation Act 2012*, the *Aviation Transport Security Act 2004*, and the *Transport Safety Investigation Act 2003* may also affect the training that an operator is required to provide to cabin crew members.

### 13.14 Scope of Division 4, Chapter 13

This Division is:

- (a) made for paragraph 121.710(b) of CASR; and
- (b) prescribes matters that must be included in initial training for a cabin crew member in relation to an operator and an aeroplane.

### 13.15 Cabin crew—knowledge of aviation, regulations, duties and responsibilities

- (1) Initial training for a cabin crew member must include the training necessary to familiarise the cabin crew member with:
  - (a) the aviation environment, including aviation terminology, the theory of flight and aircraft operations; and
  - (b) the civil aviation legislation applicable to the cabin crew member's duties and responsibilities; and
  - (c) the authority and responsibilities, under the civil aviation legislation, of the pilot in command; and
  - (d) the knowledge, skills and competencies required to perform the duties and responsibilities of the position occupied by the cabin crew member, including on the matters set out in subsection (2).
- (2) For paragraph (1)(d), initial training must include training on the following matters:
  - (a) the cabin crew member's duties and responsibilities during operations, including the need to respond promptly and effectively to emergency situations;
  - (b) the requirements for continuing competence and fitness to operate as a cabin crew member, including the management of fatigue;
  - (c) responsibilities in ensuring that relevant documents and manuals are kept up-to-date;

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- (d) responsibilities in ensuring that the cabin crew member performs his or her duties in accordance with the operator's exposition;
  - (e) identifying when cabin crew members have the authority and responsibility to initiate an evacuation and any other emergency procedure.

## **13.16 Cabin crew—effective communication and coordination**

- (1) Initial training for a cabin crew member must include training on the importance of effective communication and coordination:
  - (a) between crew members; and
  - (b) between cabin crew members and other parties (such as passengers, dispatchers and other external agencies)in normal, abnormal and emergency situations.
- (2) The training must cover:
  - (a) communication techniques and the use of common language and terminology; and
  - (b) the importance of pre-flight briefings and communicating necessary safety information during the briefing (between the crew, or the operator and the crew); and
  - (c) the importance of coordination between cabin crew and flight crew for operational safety when applying procedures, particularly in abnormal and emergency situations.

## **13.17 Cabin crew—fire and smoke: initial training**

Initial training for a cabin crew member must include training in fire and smoke detection and suppression, including training in:

- (a) the importance of:
  - (i) frequently checking potential fire-risk areas including the toilets and any associated smoke detectors; and
  - (ii) dealing promptly with emergencies involving fire and smoke; and
  - (iii) correctly identifying the source of the fire; and
  - (iv) informing the flight crew as soon as practicable; and
  - (v) taking specific actions necessary for coordination and assistance when fire or smoke is discovered;
- (b) the classification of fires and the appropriate type of extinguishing agents for each classified type of fire;
- (c) fire-fighting techniques for particular fire situations, including techniques for the application of extinguishing agents;
- (d) the consequences of misapplication of extinguishing agents and of using extinguishing agents in a confined space;
- (e) the effects of smoke in an enclosed area;

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- (f) practical training in fire-fighting that includes the following:
    - (i) extinguishing a fire;
    - (ii) correctly donning and using smoke protection equipment relevant to aviation;
    - (iii) using the fire-fighting equipment, specified for the purpose in the operator's exposition, in a smoke-filled (or simulated smoke-filled) environment;
  - (g) the procedures of ground-based emergency services relevant to general fire and smoke emergency procedures for cabin crew.

## 13.18 Cabin crew—general survival training

- (1) Initial training for a cabin crew member must include training in survival methods on land and water appropriate to the operator's areas of operation.
- (2) The training must include practical training using survival equipment determined by the operator, under the procedures mentioned in regulation 121.340 of CASR, for an aeroplane in respect of which the cabin crew member has been assigned duties.

## 13.19 Cabin crew—water survival training

### *General*

- (1) Initial training for a cabin crew member must include a comprehensive drill requiring the cabin crew member to practice post-accident survival skills:
  - (a) relevant to a geographic area over which an aeroplane, in respect of which the cabin crew member has been assigned duties, conducts a flight; and
  - (b) that takes into account the availability of search and rescue services to the area.

### *Life-jackets*

- (2) The requirements in subsection (3) apply if:
  - (a) life jackets are, under Subpart 121.K of CASR, required to be carried for a flight of an aeroplane operated by the operator; and
  - (b) the cabin crew member is assigned to duty for a flight of the aeroplane.
- (3) The training must include a comprehensive drill requiring the cabin crew member to:
  - (a) don a life jacket; and
  - (b) practice, in water, the techniques that maximise survival time in the water.

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*Life rafts, slide rafts & associated equipment*

- (4) The requirements in subsection (5) apply if:
  - (a) life rafts are, under Subpart 121.K of CASR, required to be carried for a flight of an aeroplane operated by the operator; and
  - (b) the cabin crew member is assigned to duty for a flight on the aeroplane.
- (5) The following requirements must be met:
  - (a) training of the cabin crew member must include a demonstration of:
    - (i) the inflation of life-rafts and slide-rafts carried on the aeroplane; and
    - (ii) any life-saving equipment or survival equipment for the rafts mentioned in regulation 121.335 or 121.340 of CASR; and
  - (b) the training must include a comprehensive drill requiring the cabin crew member to:
    - (i) practice boarding the life raft in water; and
    - (ii) practice using the life raft equipment in water.

## **13.20 Cabin crew—first aid training**

*Basic first aid training*

- (1) Initial training for a cabin crew member must include basic first aid training that includes instruction about treating the following:
  - (a) airsickness;
  - (b) gastro-intestinal disturbances;
  - (c) hyperventilation;
  - (d) burns;
  - (e) wounds;
  - (f) an unconscious person;
  - (g) fractures and soft tissue injuries.

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## *In-flight emergencies and associated first aid*

- (2) Initial training must include instruction on in-flight medical emergencies and associated first aid on treating the following:
- (a) asthma;
  - (b) stress and allergic reactions;
  - (c) shock;
  - (d) burns;
  - (e) choking;
  - (f) epilepsy;
  - (g) childbirth;
  - (h) stroke;
  - (i) heart attack.

## *First aid equipment and CPR*

- (3) The training must include instruction and practical training on:
- (a) the use of appropriate equipment including first-aid oxygen, first-aid kits, universal precaution kits and emergency medical kits and their contents; and
  - (b) practical cardio-pulmonary resuscitation that takes account of an aircraft environment.

## *Travel health and hygiene*

- (4) The training must include instruction on travel health and hygiene, including:
- (a) hygiene on board; and
  - (b) the risk of contact with infectious diseases and the means to reduce such risks;
  - (c) handling of clinical waste;
  - (d) aircraft disinsection, if the operator's exposition contains procedures for it.

### **13.21 Cabin crew—training for passenger handling**

Initial training for a cabin crew member must include training on passenger handling, including:

- (a) the importance of correct passenger seat allocation, as follows:
  - (i) correct seat allocation with reference to weight and balance;
  - (ii) correct seat allocation of special categories of passenger (for example, passengers who are ill or incapacitated, with reduced mobility, or restricted passengers);
  - (iii) the necessity of seating suitable persons in emergency exit row seats; and

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- (b) regulatory requirements concerning the safe stowage of cabin baggage and cabin service items and the associated risks to safety, for example, that baggage (including a portable electronic device) or service items can:
    - (i) become a hazard to occupants;
    - (ii) obstruct or damage the emergency equipment or exits; and
  - (c) precautions for when live animals are carried in the passenger compartment; and
  - (d) the handling of a death on board; and
  - (e) the identification of passengers affected by psychoactive substances.

## **13.22 Cabin crew—training in the physiological effects of flying**

Initial training for a cabin crew member must include training about the physiological effects of flying, including instruction on the following:

- (a) hypoxia;
- (b) oxygen requirements;
- (c) the atmosphere and atmospheric pressure;
- (d) pressurised and non-pressurised aircraft cabins;
- (e) the physiological effects of pressure changes in the body, dealing with, for example, gases, cavities, sinuses, eustachian tubal function and barotrauma;
- (f) time of useful consciousness.

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## Division 5—Conversion training for cabin crew

### 13.24 Scope of Division 5, Chapter 13

This Division is:

- (a) is made for paragraph 121.715(2)(a) of CASR; and
- (b) prescribes matters that must be included in conversion training for a cabin crew member in relation to an operator and an aeroplane type.

Note: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to cabin crew members:

- (a) a cabin crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### 13.25 Cabin crew—fire and smoke: conversion training

- (1) Conversion training for a cabin crew member for an aeroplane type must include training on:
  - (a) the use of fire fighting and any related equipment (for example, protective clothing, smoke protection) fitted to, or carried on, an aeroplane of the aeroplane type;
  - (b) drills for fire-fighting.
- (2) The training must include a practical component in which the cabin crew member participates in simulated realistic scenarios for the practice of what has been covered by the training.

Note 1: Training that requires the use of safety and emergency equipment in relation to an aeroplane type must use equipment that is representative of equipment fitted to, or carried on, an aeroplane of the type: see section 13.11.

Note 2: Practical training that uses a fire-fighting simulated exercise must meet the requirements in section 13.09.

### 13.26 Cabin crew—doors and exits: conversion training

- (1) Conversion training for a cabin crew member for an aeroplane type must include training on the operation of each door and exit (including any flight deck window or hatch):
  - (a) fitted to each model or variant of an aeroplane of the aeroplane type to which the crew member has been assigned duties; and
  - (b) in normal and emergency mode.
- (2) The training must include use of the means for assisting evacuation on the aeroplane (for example, escape ropes or slides).

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- (3) The training must include a demonstration, given to the cabin crew member, of the operation of the flight deck exits (other than a flight crew compartment security door), in normal and emergency modes.
  - (4) The training must include a practical component in which the cabin crew member:
    - (a) operates and opens each of the exits covered by the training (other than a flight deck exit whose operation is demonstrated under subsection (3)), in normal and emergency modes; and
    - (b) if escape ropes are carried on the aeroplane—prepares the escape ropes (other than flight deck escape ropes) for use in an evacuation, up to the point of (but not including) evacuating using the ropes.

## 13.27 Cabin crew—evacuation slides

- (1) Conversion training for a cabin crew member for an aeroplane type must include training on the use of each evacuation slide that is fitted to, or carried on, an aeroplane of the type (the *first-mentioned aeroplane*).
- (2) If:
  - (a) the crew member is assigned to duty on another aeroplane of the aeroplane type; and
  - (b) an evacuation slide fitted to, or carried on, the aeroplane is different to an evacuation slide fitted to, or carried, on the first-mentioned aeroplane;then conversion training must include training on the use of the different slide.
- (3) The training must include a practical component requiring the cabin crew member to safely complete a descent using an evacuation slide representative of one fitted to an aeroplane of the aeroplane type.
- (4) For the purposes of subsection (3), if the aeroplanes of the aeroplane type have more than one passenger deck, the descent using an evacuation slide is required to be conducted from the height of the lower passenger deck only.
- (5) Despite subsection (3), a descent in relation to an aeroplane of the aeroplane type (the *relevant aeroplane*) need not be conducted if:
  - (a) the crew member has completed a descent when undertaking conversion training for an aeroplane of a different aeroplane type with the same operator; and
  - (b) any difference in the characteristics of the evacuation slide used for that descent (such as height or width of the slide, or angle of the slide with respect to the ground) are not significant enough to affect the outcomes of the training regarding the crew member's competency to perform a descent using an evacuation slide for the relevant aeroplane.



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## 13.28 Cabin crew—crew incapacitation procedures

- (1) Conversion training for a cabin crew member and an aeroplane of the aeroplane type must include training on:
  - (a) how cabin crew are to respond in the event of crew incapacitation during normal, abnormal and emergency situations; and
  - (b) the aeroplane type specific elements and conditions relevant to the response.
- (2) The training must include instruction on how to operate any equipment fitted to, or carried on, the aeroplane that relates to treating an incapacitated crew member (for example, flight crew seats, flight deck oxygen).
- (3) The training must include a practical component in which the cabin crew member participates in simulated realistic scenarios that allow practice in what has been covered by the training.

## 13.29 Cabin crew—safety and emergency equipment and aircraft systems: conversion training

- (1) Conversion training for a cabin crew member for an aeroplane type must include training on the location and use of the following, that are fitted to, or carried on, an aeroplane of the aeroplane type:
  - (a) each item of safety and emergency equipment; and
  - (b) the aircraft systems relevant to the duties of a cabin crew member.
- (2) The training must include a practical component in which the cabin crew member practices:
  - (a) using each item of equipment and the aircraft systems; and
  - (b) removing any portable item of equipment.
- (3) The training must also include a practical component in which the cabin crew member participates in simulated realistic scenarios that allow practice in what has been covered by the training.

Note: Training on safety and emergency equipment must use equipment that is representative: see section 13.11.

## 13.30 Cabin crew—normal and emergency procedures: conversion training

- (1) Conversion training for a cabin crew member for an aeroplane type must include training on the operator's normal and emergency procedures for an aeroplane of the aeroplane type.

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- (2) The training must cover standard operating procedures that relate to the cabin crew member's safety-related duties and responsibilities during normal day-to-day operations, including the following:
    - (a) safety procedures for normal operations;
    - (b) management of the cabin environment;
    - (c) procedures for turbulence;
    - (d) the operation of equipment and aircraft systems;
    - (e) management of, and assistance to, the passengers;
    - (f) communication and coordination with crew members and other personnel who have safety-related duties (for example, ground crew);
    - (g) security requirements and procedures.
  - (3) The training must cover emergency procedures for abnormal and emergency situations in flight and on the ground, including the following:
    - (a) firefighting;
    - (b) smoke or fumes in the cabin;
    - (c) cabin pressurisation problems and decompression;
    - (d) unlawful interference;
    - (e) anticipated and unanticipated landing or ditching;
    - (f) rapid disembarkation;
    - (g) evacuation on land and water;
    - (h) crew communication and coordination (within the meaning of subsection 13.16(1));
    - (i) passenger handling and crowd control.
  - (4) The training must include a practical component in which the cabin crew member participates in a simulated realistic scenarios that allow the crew member to practice what is covered by the training.

## **13.31 Cabin crew—knowledge of aeroplane type and its components**

Conversion training for a cabin crew member must include training covering knowledge of an aeroplane of the aeroplane type and each element within it that is relevant to the person's duties, sufficient for the person to proficiently carry out duties as a cabin crew member.

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## Division 6—Annual training for cabin crew

### 13.33 Scope of Division 6, Chapter 13

This Division:

- (a) is made for subregulation 121.725(1) of CASR; and
- (b) prescribes matters for annual training for a cabin crew member in relation to an operator and an aeroplane type.

Note: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to cabin crew members:

- (a) a cabin crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

### 13.34 Cabin crew—annual training

Annual training for a cabin crew member for an aeroplane type must include instruction on the duties and responsibilities assigned to the crew member in safety and emergency procedures for each aeroplane of the aeroplane type, and each model or variant of the aeroplane, to which the crew member has been assigned duties.

### 13.35 Cabin crew—safety and emergency equipment: annual training

- (1) Annual training for a cabin crew member must include training on the location and use of each item of safety or emergency equipment to which this subsection applies.
- (2) Subsection (1) applies to each item of safety or emergency equipment that is fitted to, or carried on, an aeroplane of the aeroplane type in relation to which the cabin crew member has been assigned duties (the *first-mentioned aeroplane*).
- (3) If:
  - (a) the crew member is assigned for duty on another aeroplane of the aeroplane type; and
  - (b) an item of safety or emergency equipment fitted to, or carried on, the other aeroplane is different to any of the items fitted to, or carried on, the first-mentioned aeroplane;then subsection (1) applies to that item of equipment.
- (4) If life-jackets are carried on an aeroplane of the aeroplane type in relation to which the crew member has duties, the training must cover donning of life-jackets.

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- (5) If an aeroplane of the aeroplane type in relation to which the crew member has duties carries portable oxygen equipment or protective breathing equipment—the training must cover donning of the equipment.
  - (6) The training must include a practical component in which the cabin crew member:
    - (a) practices handling the equipment to which this section applies (other than the equipment mentioned in subsection (7)); and
    - (b) participates in simulated realistic scenarios that allow practice in what has been covered by the training as it relates to the equipment.
  - (7) The requirements in subsection (6) do not apply in relation to:
    - (a) life rafts, slide rafts or signalling equipment; or
    - (b) if other survival equipment has been determined by the operator, using the procedures mentioned in regulation 121.340 of CASR, for an aeroplane of the aeroplane type in relation to which the cabin crew member has been assigned duties—that equipment.

Note: Training that requires the use of safety and emergency equipment must use equipment that is representative: see section 13.11.

## 13.36 Cabin crew—doors and other exits for passenger evacuation: annual training

### *Application*

- (1) This section applies to a normal and emergency exit:
  - (a) fitted to an aeroplane of the aeroplane type in relation to which the cabin crew member has been assigned duties (the **first-mentioned aeroplane**); and
  - (b) that enables passenger evacuation (a **passenger evacuation exit**).
- (2) If:
  - (a) the crew member is assigned to duty on another aeroplane of the aeroplane type; and
  - (b) a passenger evacuation exit on the aeroplane is different to any of the passenger evacuation exits on the first-mentioned aeroplane;then this section also applies to that exit.

### *Training on operating the exits and evacuation procedures*

- (3) Annual training for the crew member must cover:
  - (a) the operation of each of the exits to which this section applies in normal and emergency mode; and
  - (b) the evacuation procedures that relate to using the exits for passenger evacuation.

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## *Means for assisting evacuation*

- (4) The training must include instruction on use of the means for assisting evacuation on the aeroplane to which the exit is fitted (for example, escape ropes or evacuation slides).

## *Flight crew compartment security door*

- (5) The training must also include:
- (a) instruction on the operation of the flight crew compartment security door fitted to the first-mentioned aeroplane; and
  - (b) if:
    - (i) the cabin crew member is assigned to duty on another aeroplane of the aeroplane type (the *second-mentioned aeroplane*); and
    - (ii) the flight crew compartment security door on the second-mentioned aeroplane is different to the one fitted on the first-mentioned aeroplane;instruction on the operation of the door fitted to the second-mentioned aeroplane.

## *Practical component*

- (6) The training must include a practical component in which the cabin crew member:
- (a) operates and opens, in normal and emergency mode, the exits for which the cabin crew member has been assigned responsibility, as required by the operator's evacuation procedures; and
  - (b) participates in simulated realistic scenarios that allow practice in what has been covered by the training.

### **13.37 Cabin crew—safety and emergency procedures: annual training**

- (1) Annual training for a cabin crew member for an aeroplane type must include training on the operator's safety-related and emergency procedures for an aeroplane of the aeroplane type.
- (2) The training must cover safety-related procedures for the following:
- (a) stowage of articles in the cabin;
  - (b) turbulence;
  - (c) the operation of equipment and aircraft systems that are relevant to the duties of a cabin crew member;
  - (d) the physiological effects of flying including hypoxia, oxygen requirements, pressurisation in the atmosphere and the cabin, effects of pressure changes on the body and time of useful consciousness;

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- (e) the provision of first aid on an aeroplane and treatment of the physiological effects of flying, including the use of equipment for the purpose;
  - (f) communication and coordination with crew members and other personnel who have safety-related duties (for example, ground crew);
  - (g) security requirements and procedures.
- (3) The training must cover emergency procedures for abnormal and emergency situations in flight and on the ground, including the following:
- (a) firefighting;
  - (b) smoke or fumes in the cabin;
  - (c) cabin pressurisation problems and decompression;
  - (d) unlawful interference;
  - (e) anticipated and unanticipated landing or ditching;
  - (f) rapid disembarkation;
  - (g) evacuation on land and water;
  - (h) crew communication and coordination (within the meaning of subsection 13.16(1));
  - (i) crew incapacitation;
  - (j) passenger handling and crowd control.
- (4) The training must also cover:
- (a) post-accident survival techniques on land and water and the use of related survival equipment; and
  - (b) reviewing incidents and accidents that are relevant to the operator and a flight of the aeroplane.
- (5) The training must include a practical component in which the cabin crew member participates in simulated realistic scenarios that collectively allow practice in at least the following matters covered by the training:
- (a) crew communication and coordination;
  - (b) firefighting;
  - (c) cabin pressurisation problems and decompression;
  - (d) crew incapacitation;
  - (e) evacuation on land and on water.

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## Division 7—Three-yearly training & checking for cabin crew

### 13.39 Matters prescribed for 3-yearly training

(1) This section:

- (a) is made for subregulation 121.735(1) of CASR; and
- (b) prescribes matters that must be included in 3-yearly training for a cabin crew member in relation to the operator of an aeroplane and the aeroplane type.

Note: Provisions in Part 119 of CASR relating to human factors and non-technical skills also affect the training that an operator is required to provide to cabin crew members:

- (a) a cabin crew member must meet the requirements in the operator's exposition about training in human factors principles and non-technical skills before carrying out a duty of the person's position: see regulation 119.180 of CASR; and
- (b) regulation 119.175 of CASR requires the operator to have a program for training and assessing its operational safety-critical personnel in human factors principles and non-technical skills.

(2) Three-yearly training must include the following:

- (a) practical training in the method of opening the flight crew compartment security door (if any) in emergency mode;
- (b) practical training in the operation of any other exit on the aeroplane that enables passenger evacuation and is not covered by the training in section 13.36;
- (c) training in the use of the means for assisting evacuation in relation to an exit mentioned in paragraph (b) (for example, escape ropes or evacuation slides);
- (d) if life rafts are, under Subpart 121.K of CASR, required to be carried on the aeroplane —practical training in the use of a life raft and its associated equipment; and
- (e) practical training in the use of signalling equipment fitted to, or carried on, the aeroplane; and
- (f) practical training in the use of the flight crew seats, restraint system and oxygen system fitted to, or carried on, the aeroplane, for the purpose of responding to pilot incapacitation; and
- (g) training on fire-fighting that requires the cabin crew member to complete a fire drill in a smoke-filled (or simulated smoke-filled) environment, using all of the fire-fighting equipment for the cabin crew member's duties on the aeroplane, including the donning and use of protective clothing and protective breathing equipment.

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## Chapter 14—Emergency evacuation demonstrations and procedural requirements

### Division 1—General emergency evacuation procedure requirements

#### 14.01 Scope of Chapter 14

This Chapter:

- (a) is made for subregulation 121.755(2) of CASR; and
- (b) prescribes requirements for emergency evacuation procedures in relation to an aeroplane and a flight.

#### 14.02 General requirements

The emergency evacuation procedures must:

- (a) account for the aeroplane carrying the number of passengers that corresponds to the aeroplane's maximum operational passenger seat configuration; and
- (b) provide for evacuations on ground and in water (ditching); and
- (c) be realistic, capable of being practically accomplished and such as to ensure that any reasonably anticipated emergency can be adequately handled; and
- (d) take into consideration the possible incapacitation of individual crew members.

#### 14.03 Crew members, emergency exits and cabin configuration etc.

The emergency evacuation procedures must be appropriate having regard to the following matters:

- (a) the number of crew members;
- (b) the locations on the aeroplane at which a crew member is assigned;
- (c) the emergency evacuation duties and procedures assigned to each crew member;
- (d) the number, location, type of emergency exit or type of opening mechanism on an emergency exit available for evacuation in the aeroplane;
- (e) if the aeroplane is required by Subpart 121.K of CASR to carry one or more life rafts—the location of life rafts;
- (f) the way the passenger cabin interior configuration affects the emergency evacuation of passengers.



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## Division 2—Aeroplanes carrying more than 44 passengers

### 14.04 Application etc.

- (1) This Division applies in relation to an aeroplane that has a maximum operational seating configuration of more than 44 passengers.
- (2) The requirements of this Division are in addition to the requirements in Division 1.

### 14.05 Emergency evacuation procedures

- (1) An operator's emergency evacuation procedures for an aeroplane must ensure the crew members can achieve an evacuation capability at least equivalent to that achieved in an emergency evacuation demonstration that:
  - (a) was conducted by the aeroplane's manufacturer for the purpose of the type certification of the aeroplane; and
  - (b) meets the requirements of FAR 25.803, CS-25.803, or other requirements that CASA approves, in writing, as being of an equivalent standard.
- (2) If the aeroplane is required under Subpart 121.K of CASR to carry one or more life rafts, the emergency evacuation procedures related to the ditching of the aeroplane must ensure the removal of rafts and the evacuation of the occupants of the aeroplane will be conducted in an orderly and expeditious manner.
- (3) The emergency exits identified as being the primary responsibility of cabin crew members for the purposes of the emergency evacuation demonstration mentioned in subsection (1), must continue to be required, by the emergency evacuation procedures for the aeroplane, to be the primary responsibility of cabin crew members.
- (4) To avoid doubt, the requirement in subsection (3) does not prevent additional emergency exits becoming the primary responsibility of cabin crew members under the emergency evacuation procedures.

### 14.06 Requirement to conduct demonstrations

- (1) An operator must demonstrate to CASA the emergency evacuation procedures for an aeroplane to the extent required by this Division.

Note: The demonstration of emergency evacuation procedures required by this Division is an demonstration commonly understood to be a "partial" emergency evacuation demonstration. This is because it is not the full emergency evacuation demonstration that is required as part of an aircraft's initial type certification.

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- (2) A demonstration of the emergency evacuation procedures in relation to an aeroplane must be conducted:
- (a) before the type and model of aeroplane is operated in an Australian air transport operation by an operator; and
  - (b) before the aeroplane is operated under an Australian air transport AOC following a change listed below that has not previously been demonstrated to CASA for the aeroplane:
    - (i) a reduction in the number of cabin crew members assigned to duty for the aeroplane;
    - (ii) a change to the locations on the aeroplane at which a cabin crew member is assigned, or to the crew's emergency evacuation duties and procedures;
    - (iii) a change to the number, location, type of emergency exit or type of opening mechanism on an emergency exit that is available for evacuation of the aeroplane.
- (2A) Subsection (2B) applies if:
- (a) an operator has demonstrated the emergency evacuation procedures for a type and model of aeroplane under this Division; and
  - (b) the demonstration met the requirements and standards in this Division; and
  - (c) the operator proposes to operate another model of that aeroplane type in an Australian air transport operation.
- (2B) Despite subsection (2), CASA may approve an application by the operator not to conduct a demonstration for an aeroplane mentioned in paragraph (2A)(c) (the ***new aeroplane***) if CASA is satisfied that the differences between:
- (a) the aeroplane of the same type mentioned in paragraph (2A)(a); and
  - (b) the new aeroplane model;
- would not affect the effective egress of passengers from the new aeroplane model in the event of an emergency.
- (2C) Despite subsection (2), CASA may also approve an application by an operator not to conduct a demonstration, in relation to a change to an aeroplane mentioned in paragraph (2)(b), if CASA is satisfied that the change would not affect the effective egress of passengers from the aeroplane in the event of an emergency evacuation.

## *Ditching procedures*

- (3) If the aeroplane is required under Subpart 121.K of CASR to carry one or more life rafts, CASA may require the operator, by notice in writing, to conduct a demonstration of the procedures related to the ditching of the aeroplane (the ***ditching procedures***).

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- (4) In considering whether to require a demonstration of the ditching procedures, CASA may take into account:
- (a) the availability and realism of facilities, cabin training devices and equipment used by the operator for training crew members on emergency and safety equipment and emergency procedures; and
  - (b) any ditching demonstrations the operator has carried out on an aeroplane of a similar type; and
  - (c) any other factor CASA considers relevant.
- (5) A demonstration of ditching procedures may be conducted:
- (a) during the emergency evacuation demonstration required under subsection (2); or
  - (b) at another time, as directed by CASA.

Note: As a matter of normal practice, CASA will work with an operator to identify a mutually agreeable time and place for the demonstration of ditching procedures. Ultimately, CASA can provide a direction as to the time and place even where no such agreement can be reached.

## 14.07 Demonstration requirements

- (1) A demonstration to CASA of the emergency evacuation procedures of the aeroplane, including the ditching procedures if required under subsection 14.06(3), must be conducted in simulated emergency conditions.
- (2) Each crew member who participates in the demonstration must:
  - (a) have assigned duties for the type and model of aeroplane; and
  - (b) have been selected at random by CASA from a list of crew for the aeroplane compiled by the operator:
    - (i) for the purpose of testing the procedures with members of the crew who do not have an above average level of experience or exposure to emergency evacuation requirements; and
    - (ii) given to CASA; and
  - (c) have been assessed by the operator as competent to perform duties relevant to carrying out the emergency evacuation procedures and associated safety briefings for the type and model of aeroplane.
- (3) The operator must not cause the demonstration to have been practiced, rehearsed with, or described to, a participant, except as mentioned in subsection (4).
- (4) For the purposes of subsection (3), a participant may be advised only that he or she will be participating in an evaluation of safety procedures.

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## 14.08 Standards for demonstrations

- (1) CASA must be satisfied that the emergency evacuation procedures for an aeroplane would enable the crew members to achieve the requirement in subsection 14.05(1).
- (2) A demonstration of the emergency evacuation procedures for the aeroplane must also meet the following standards:
  - (a) the cabin crew members, using the operator's emergency evacuation procedures, must:
    - (i) open 50 % of the required floor level emergency exits; and
    - (ii) open 50 % of the required non-floor level emergency exits; and
  - (b) the emergency exits opened for the purposes of paragraph (a) must not include an exit if CASA has (for the purposes of the demonstration) identified that an unsafe condition exists outside the exit; and
  - (c) the emergency exits must be ready for use within 15 seconds from the pre-arranged signal notified to the operator.
- (3) For the purposes of subsection (2), an emergency exit is a **required** emergency exit if:
  - (a) it was present at the time of the emergency demonstration evacuation mentioned in subsection 14.05(1) for the aeroplane; and
  - (b) the operator's procedures provide that the opening of the exit is a primary responsibility of a cabin crew member.

Note: The emergency demonstration evacuation mentioned in subsection 14.05(1) is a full evacuation demonstration conducted for the purposes of the certification of the aeroplane.

- (3) An emergency exit is **ready for use within 15 seconds** if:
  - (a) the emergency exit has been fully opened; and
  - (b) any other means required for a passenger to reach the ground using the exit (for example, an evacuation slide) would be ready within that time; and
  - (c) where those means are not physically deployed—the time it would take to deploy them for the use of the emergency exit is taken into account in the 15 seconds.

Note: For example, if it was determined that the slide deployment time for a type of aeroplane is 4 seconds, the measured time to open the relevant emergency exit would be 11 seconds.

- (4) If the operator is required to conduct a demonstration of ditching procedures for the aeroplane, the standard that must be met is that CASA is satisfied the ditching procedures meet the requirement in subsection 14.05(2).

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## 14.09 Manner of conducting demonstration

### *Emergency evacuation procedures*

- (1) A demonstration of the emergency evacuation procedures for an aeroplane, must be conducted as follows:
  - (a) either during the dark of the night or during daylight with the dark of the night simulated;
  - (b) the aeroplane is in a normal ground attitude with landing gear extended;
  - (c) the following methods be used to prevent disclosure of the available emergency exits to participants in the demonstrations:
    - (i) stands or ramps be positioned at all of the aeroplane's emergency exits;
    - (ii) if the crew would be able to see the means being used to indicate unusable exits before the signal to evacuation is given—the relevant passenger and cockpit windows are blacked out;
  - (d) the aeroplane's normal electrical power sources are de-energised at the commencement of the evacuation;
  - (e) each item of emergency equipment or safety equipment:
    - (i) required to be carried on the aeroplane for the flight by Subpart 121.K of CASR; and
    - (ii) relevant to the conduct of an emergency evacuation demonstration under this Division;  
is fitted to, or carried on, the aeroplane;
  - (f) each external door or other exit, and each internal door or curtain, be in a position to simulate a normal take-off;
  - (g) a member of the cabin crew or the flight crew, or any other crew member or member of the operator's personnel who maintains or operates the aeroplane in the normal course of their duties, is not used as a passenger in the demonstration;
  - (h) a passenger is not to be assigned a specific seat except under the direction of CASA;
    - (i) if the opening of an emergency exit is not the primary responsibility of a cabin crew member under the emergency evacuation procedures—an employee of the operator is not to be seated next to that exit;
  - (j) seat belts and shoulder harnesses for the participants in the demonstration are fastened;
  - (k) the seating density and arrangement of the aeroplane is representative of the maximum operational passenger seat configuration of the aeroplane;
  - (l) the crew complement on board is not to exceed the number normally carried, with each crew member to be a member of a regularly scheduled line crew;

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- (m) each crew member is seated in the seat that is normally assigned to the person for take-off and is to remain seated until the signal to evacuate is given;
  - (n) a crew member or a passenger participating in a demonstration is not given prior knowledge of the emergency exits available for the demonstration;
  - (o) the demonstration must not include as a participant a person who has taken part in an evacuation demonstration within the preceding 6 months;
  - (p) the pre take-off procedures included in the operator's exposition are demonstrated, including instructions to follow the directions of crew members, except no instruction can be given on the procedures to be followed in the demonstration;
  - (q) no more than 50% of the emergency exits on the sides of the fuselage of an aeroplane are used for the evacuation demonstration;
  - (r) at least one exit used for the demonstration is a floor level exit;
  - (s) any exit not used for the demonstration must be indicated by red lights, red tape, or other appropriate means, placed outside the exit to indicate fire or other reason for the exit to be unusable;
  - (t) the emergency evacuation procedures are to be demonstrated, except that the flight crew must not take an active role in assisting any person inside the cabin during the demonstration.

## *Demonstration of ditching procedures—other requirements and standards*

- (2) If the demonstration includes ditching procedures, the following requirements apply:
  - (a) the demonstration must include:
    - (i) removal of life rafts, and any other equipment required by regulation 121.335 of CASR, from stowage locations; and
    - (ii) taking life rafts and equipment to the appropriate exit; and
    - (iii) any other actions necessary for readying the raft for launching and inflation;
  - (b) if the operator's emergency evacuation procedures require the use of passengers to assist with ditching—the demonstration must include passengers as participants to assist with the ditching in accordance with the procedures;
  - (c) after the ditching signal is given, each crew member and passenger who is participating in the demonstration must, in accordance with the ditching procedures, don a life-jacket.

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## 14.10 Demonstrations of ditching procedures only

- (1) This section applies if:
  - (a) CASA requires the operator of the aeroplane to conduct a demonstration of ditching procedures under subsection 14.06(3); and
  - (b) the demonstration of the ditching procedures will be conducted separately to other evacuation procedures.
- (2) The demonstration:
  - (a) despite paragraph 14.09(1)(a), may be conducted under daylight conditions; and
  - (b) is subject to each other applicable requirement mentioned in subsection 14.09(1); and
  - (c) is subject to the requirements in subsection 14.09(2); and
  - (d) may be conducted either using an aeroplane or a cabin training device.
- (3) If a cabin training device is used, it must:
  - (a) be a life-size mock-up of the interior of the aeroplane; and
  - (b) include adequate seats for the use of participants in the demonstration; and
  - (c) include emergency exits that replicate the emergency exits on the aeroplane.