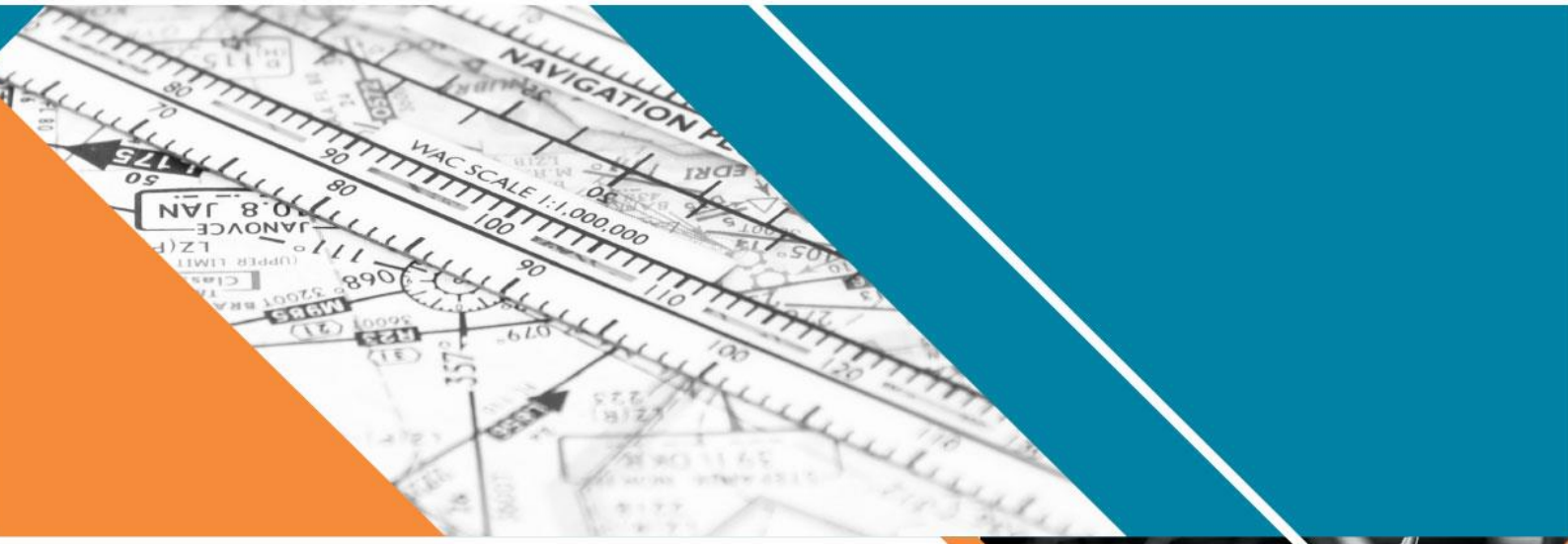
Australian Government
Civil Aviation Safety Authority

ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL



Australian air transport operations—larger aeroplanes

Part 121 of CASR

Date	December 2023
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An Acceptable Means of Compliance (AMC) explains how one or more requirements of the Civil Aviation Safety Regulations 1998 (CASR) for the issue of a certificate, licence, approval or other authorisation, can be met by an individual or organisation applying to the Civil Aviation Safety Authority (CASA) for the authorisation.

AMC are non-binding standards issued by CASA which may be used by persons and organisations to demonstrate compliance with CASR.

Applicants are not required to utilise an AMC to comply with a legislative requirement but if they do, CASA will issue the authorisation to which the AMC relates.

AMC do not articulate the only way compliance can be achieved. Individuals and operators may, on their own initiative, propose other ways of meeting the requirements of CASR; however, any such proposal will be subject to separate assessment by CASA to determine whether the proposed methods are likely to produce the required legislative outcome.

Guidance material (GM) is non-binding material issued by CASA which helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of CASR. It provides explanations and amplification of the policy intention underpinning the applicable provision of CASR, rather than a means of complying with it. GM should be read in conjunction with the applicable provision of CASR and AMC. GM is identified by grey shaded text.

Contents

Status

This version of the AMC and GM is approved by the Branch Manager, Flight Standards.

Note: Changes made in the current version are annotated with change bars.

Version	Date	Details
v2.3	December 2023	Notable information in this update includes: • added information regarding approvals mentioned in CASA exemptions and directions instruments and how these relate to the significant change approval rules • added content regarding the legal instruments which determine that training and checking events completed prior to the commencement of Parts 119 and 121 are taken to have met certain new training and checking requirements • new content added to AMC 121.205 and GM 121.205 regarding the 121.010 approval in that regulation • minor changes to GM 121.220 • re-wrote GM 121.320, 121.325 and 121.330 on exposition procedures for first-aid kits, universal precaution kits and emergency medical kits (including moving kit content guidance to GM 121.460) • added content to GM 121.390 regarding use of third-party performance calculation devices and non-OEM performance data • added considerable information about the take-off and landing performance regulations in GM 121.395 and GM 121.420 • added content to GM 121.540 regarding flight crew recency requirements • added new AMC 121.570 and AMC 121.600 content • added more information in GM 121.600 and GM 121.610 in relation to theoretical knowledge content.
v2.2	December 2021	Added references to additional exemptions incorporated into EX83/21 by EX148/21, and into EX87/21 by EX145/21. Added reference to the exemption and transitional approvals arising from CASA EX161/21. Added additional guidance material to the References section. Amended GM 121.055 to account for the newly issued v2.0 of AC 91-22 relating to aircraft checklists. Added new AMC 121.250 related to operators that elect not to carry restricted persons. Added information relating to the use of part-time check pilots, and relating to the validity of flight examiner ratings, to GM 121.580.
v2.1	December 2021	Added references to exemptions and directions relating to Part 121 operators, and landing on wet runways guidance from CAAP 235-5 (the CAAP is being withdrawn on 2 December 2021).

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AMC/GM are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Version	Date	Details
v2.0	September 2021	Addition of new guidance material, clarification of policy matters and editorial changes.
v1.0	December 2020	Initial AMC and GM.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AMC/GM are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AMC and GM are listed in the table below.

Acronym	Description
AFM	aircraft flight manual
AIP	aeronautical information publication
AMC	acceptable means of compliance
AMSA	Australian Maritime Safety Authority
AOC	air operator's certificate
APU	auxiliary power unit
ATC	air traffic control
ATSB	Australian Transport Safety Bureau
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
CofA	Certificate of Airworthiness
DAMP	drug and alcohol management plan
EASA	European Aviation Safety Agency
EDTO	extended diversion time operations
EFB	electronic flight bag
ERSA	En Route Supplement Australia
EVS	enhanced vision system
FAR	federal aviation regulation (USA)
FBW	fly by wire
FCM	flight crew member
FIR	flight information region
GM	guidance material
HOFO	head of flying operations
HUD	head-up display
ICAO	International Civil Aviation Organization
IFR	instrument flight rules
IMC	instrument meteorological conditions
MAPT	missed approach point
MDA	minimum descent altitude

Acronym	Description
MEL	minimum equipment list
MLW	maximum landing weight
MOPSC	maximum operational passenger seat configuration
MOS	Manual of Standards
MOU	memorandum of understanding
MTOW	maximum take-off weight
OEI	one engine inoperative
PAL	pilot activated lighting
PAPI	precision approach path indicator
PED	personal electronic device
PF	pilot flying
PIC	pilot-in-command
PM	pilot monitoring
PRM	passengers with reduced mobility
RPIC	relief pilot in command
RTOW	regulated take-off weight
SMS	safety management system
SOP	standard operating procedures
SVS	synthetic vision system
TAWS	terrain awareness and warning system
TSO	technical standards order
VASIS	visual approach slope indicator system
VFR	visual flight rules
VMC	visual meteorological conditions

1.2 Definitions

Terms that have specific meaning within this AMC and GM are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by ‘grey shading’. Should there be a discrepancy between a definition given in this AMC and GM and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
air transport operation	A passenger transport operation, a cargo transport operation, or a medical transport operation, that is conducted for hire or reward, or is prescribed by an instrument issued under regulation 201.025 .
passenger transport	An operation of an aircraft that involves the carriage of passengers, whether

Term	Definition
operation	or not cargo is also carried on the aircraft, but does not include the following: 1. an operation of an aircraft with a special certificate of airworthiness 2. a cost-sharing flight 3. a medical transport operation.
Cargo transport operation	An operation of an aircraft that involves the carriage of cargo and crew only, but does not include the following: an operation conducted for the carriage of the possessions of the operator or the pilot in command (PIC) for the purpose of business or trade ii. a medical transport operation.
Medical transport operation	An operation the primary purpose of which is to transport one or more of the following: 1. medical patients 2. medical personnel 3. blood, tissue or organs for transfusion, grafting or transplantation.
Visual approach slope indicator system	A visual approach slope indicator system is defined in the MOS for Part 139 to include the following: 1. a T visual approach slope indicator system (T-VASIS); 2. an abbreviated T visual approach slope indicator system (AT-VASIS); 3. a precision approach path indicator system (PAPI); 4. a double-sided PAPI.

1.3 References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Document	Title
Civil Aviation Act	*Civil Aviation Act 1988*
Civil Aviation Regulations	*Civil Aviation Regulations 1988* (CAR)
Civil Aviation Safety Regulations	*Civil Aviation Safety Regulations 1998* (CASR)
Part 11 of CASR	Regulatory administrative procedures
Part 21 of CASR	Certification and airworthiness requirements for aircraft and parts
Part 23 of CASR	Airworthiness standards for aeroplanes in the normal, utility, acrobatic or commuter category
Part 25 of CASR	Airworthiness standards for aeroplanes in the transport category
Subpart 42.C of CASR	Continuing airworthiness management – requirements for person responsible for continuing airworthiness for aircraft
Regulation 61.340 of CASR	Production of licencing documents, medical certificates and identification
Part 91 of CASR	General operating and flight rules

Document	Title
Part 91 MOS	Part 91 (General operating and flight rules) Manual of Standards 2020
Part 92 of CASR	Consignment and carriage of dangerous goods by air
Regulation 92.025 of CASR	Compliance with technical Instructions – operators
Part 119 of CASR	Australian air transport operators — certification and management
Part 121 of CASR	Australian air transport operations — larger aeroplanes
Part 121 MOS	Part 121 (Australian Air Transport Operations—Larger Aeroplanes) Manual of Standards 2020
Part 133 of CASR	Australian air transport operations—rotorcraft
Part 135 of CASR	Australian air transport operations—smaller aeroplanes
Part 135 MOS	Part 135 (Australian air transport operations—smaller aeroplanes) Manual of Standards 2020
CASR Dictionary	Part 1, Part 2, Part 3 of the CASR Dictionary
	Radiocommunications Act 1992
	Transport Safety Investigation Act 2003
CAO 48.1	Instrument 2019 (flight crew member fatigue requirements)
CAO 100.7	Instrument 2015 (Weight requirements for aircraft)
CASA 90/21	Training and Checking (CASR Part 119) Determination 2021
CASA 91/21	Training and Checking (CASR Part 121) Determination 2021
CASA 152/12	Direction – Personal Electronic Devices used as Electronic Flight Bags or provided as In Flight Entertainment devices
CASA EX81/20	Implementation of Drug and Alcohol Management Plans (Micro-businesses and DAMP Organisations) Exemption 2020
CASA EX81/21	Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2021
CASA EX82/21	Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2021
CASA EX83/21	Part 121 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2021
CASA EX85/21	Part 135, Subpart 121.Z and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2021
CASA EX87/21	Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2021
CASA EX97/22	Part 121 – Single Pilot Aeroplane (MOPSC 10-13) Operations – Exemptions Repeal, Remake, and Direction Instrument 2022
CASA EX161/21	Miscellaneous Flight Operations Exemptions and Approvals (Transitional) Instrument 2021

Advisory material

CASA's advisory materials are available at https://www.casa.gov.au/publications-and-resources/guidance-materials

Document	Title
AC 1-01	Understanding the legislative framework
AC 1-02	Guide to the preparation of expositions and operations manuals
AC 1-03	Transitioning to the flight operations regulations
AC 11-03	Electronically formatted certifications, records and management systems
AC 11-04	Approvals under CASR Parts 91, 103, 119, 121, 129, 131, 132, 133, 135, 138 and 149 (including MOS)
AC 60-02	Flight simulator approvals
AC 91-03	Carriage of assistance animals
AC 91-07	Cabin electronic flight bags
AC 91-11	Approval to conduct low visibility operations
AC 91-12	Conduct of practice autoland operations
AC 91-15	Guidelines for aircraft fuel requirements
AC 91-17	Electronic flight bags
AC 91-18	Restraint of infants and children
AC 91-19, 121-04, 133-10, 135-12 and 138-10	Passenger safety information
AC 91-22	Aircraft checklists
AC 91-25	Fuel and oil safety
AC 91-28	Crew safety during turbulence
Multi-Part AC 91-30, 121-12, 133-03 and 135-14	Emergency locator transmitters
AC 92A-01	The consignment and carriage of dangerous goods on all aircraft in Australian territory and on Australian aircraft overseas: An overview of the legislative framework and procedures
AC 92-01	Dangerous goods training for employees
AC 92-03	Dangerous goods training courses and instructors
AC 92-05	Use of Compressed Oxygen: Carriage and Consignment of Live Aquatic Animals for Transport by Air
AC 119-11	Training and checking systems
AC 119-12	Human factors principles and non-technical skills training and assessment for air transport operations
AC 121-03	Upset prevention and recovery training (UPRT)
AC 121-05, 133-04 and 135-08	Passengers, crew and baggage weights
AC 121-08, 133-08 and 135-06	Carry-on baggage
AC 121-09, 133-06 and	Carriage of special categories of passenger

Document	Title
135-10	
AC 121-10, 133-07 and 135-11	Passengers seated in emergency exit row seats
AWB 02-064	Preventing Carbon Monoxide Poisoning in Piston Engine Aircraft
CAAP 37-1	Minimum equipment lists (MEL)
CAAP 48-01	Fatigue management for flight crew members
Part 91 AMC/GM	Acceptable means of compliance and guidance material – General operating and flight rules
Part 119 AMC/GM	Acceptable means of compliance and guidance material – Australian air transport operators—certification and management

Other material

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Document	Title
ICAO Doc 9976	Flight Planning and Fuel Management Manual
ICAO Doc 10064	Aeroplane Performance Manual
ICAO Doc 10085	Extended Diversion Time Operations (EDTO) Manual
ICAO Annex 2	Rules of the Air
ICAO Annex 8	Airworthiness of Aircraft
JAR/FAR-23	Airworthiness standards – normal category aeroplanes
JAR/FAR-25	Airworthiness standards – transport category aeroplanes
FAA Advisory Circular (AC) 120-53B	Guidance for conducting and use of Flight Standardization Board Evaluations
EASA OSD	Common Procedure Document available on the EASA website
FAA AC 120-01	Part 121 Air Carrier Operational Control

Note: Guidance for specific aeroplane types or variants can be found in evaluation reports prepared by the Flight Standardisation Boards of the FAA and of Transport Canada, and in the reports by the Operational Suitability Data on the EASA website.

1.4 Forms

CASA's forms are available at http://www.casa.gov.au/forms

Form number	Title
	Application – Air operator's certificate / Associated approvals (CASR Part 119) **Note:** This form is available as a single form or multiple forms of each constituent part. See the CASA website.
	Notification – Non-significant changes (CASR Parts 119, 131 and 138)

2 Subpart 121.A – Preliminary

There is an exemption in force that where a law of a foreign country is more restrictive that a Part 121 rule – the foreign country law must be followed. It is recommended that operators review section 5 of CASA EX83/21.

There is a Part 11 direction in force in relation to crew members carrying out audits, checks, examinations etc. Operators and pilots are advised to review section 9 of CASA EX81/21.

AMC 121.005 Application of Part 121

Reserved

GM 121.005 – Application of Part 121

The following CASR Dictionary definitions are fundamental to Part 121:

- Australian air transport operation
- maximum operational passenger seat configuration (MOPSC)
- maximum take-off weight (MTOW).

The applicability of Parts 121 and 135 are partially defined in relation to MOPSC instead of certificated seating capacity. Using MOPSC as a key element of the applicability provides flexibility for operators using aircraft close to this boundary to modify their aircraft by physically removing the passenger seats that would otherwise mandate operations in accordance with Part 121. Any such modification would need to be done in accordance with other elements of the regulations, such as the applicable maintenance certifications.

Relationship with Part 91

Part 91 prescribes the regulatory requirements that apply, by default, to all operations. Part 121 regulations generally differ from Part 91 for two main reasons. Firstly, to ensure that, where necessary, a higher standard has been required of an air transport operation. Secondly, to enable an air transport operator to take advantage of their greater control and supervision of operations to provide an alleviation or alternative method of compliance with certain rules.

Provisions in Part 121 are such that they impose requirements over and above the standards in Part 91, but if the table within regulation 91.035 does not state that a Part 121 regulation applies in place of a Part 91 regulation, then the relevant Part 91 regulations apply.

Where an air transport operation is not being conducted, an operator may elect to comply with their normal air transport procedures or may, if the Part 121 regulation imposes a higher requirement, elect to operate to the Part 91 rule for a non-air transport operation flight. For example, after conducting a passenger transport operation the aeroplane needs to be flown (with crew only) to another aerodrome to be refuelled. That flight to the refuel location is not an air transport operation and therefore is not required to comply with Part 121 regulations.

Applicability to multi-engine aeroplanes and single-engine aeroplanes

This regulation specifies that Part 121, except Subpart 121.Z, is applicable to *air transport operations* in a multi-engine aeroplane if either/both of the following apply:

- the aeroplane has a MOPSC of more than 9
- the aeroplane has a MTOW of more than 8 618 kg.

This regulation specifies that only Subpart 121.Z applies to the operation of certain single-engine aeroplanes. These aeroplanes are those where both of the following apply:

- the aeroplane has a MOPSC of more than 9
- the aeroplane has a MTOW of not more than 8 618 kg.

Applicability to aeroplanes with a MTOW of 8,618kg or less and a MOPSC of between 10 and 13

There is an exemption available that enables multi-engine and single-engine aeroplanes with a MTOW <= 8,618kg and a MOPSC between 10-13 seats to be operated under the Part 135 rules if certain additional requirements are satisfied.

It is recommended existing operators, or those planning to operate aeroplanes with a MOPSC of between 10-13, review CASA EX97/22.

Note: Use of the exemption is not required for operations in aeroplanes with a MOPSC of 9 when carrying infants and/or two children in one seat. For these operations the MOPSC remains 9 but the total passengers carried (including infants and children) must not exceed any maximum passenger number that might be contained in the aeroplane's type certificate, foreign type certificate, supplemental type certificate or foreign supplemental type certificate.

It is recommended that operators review Division 20.2 of the Part 91 MOS – Restraint of infants and children.

AMC 121.010 Approvals by CASA for Part 121

Reserved

GM 121.010 Approvals by CASA for Part 121

General guidance on approvals under the flight operations regulations, which includes Part 138, is available in AC 11-04 Approvals under Parts 91, 103, 119, 121, 129, 131, 132, 133, 135, 138 and 149 of CASR (including MOS).

Where a provision of Part 121 or the Part 121 MOS makes explicit reference to a CASA approval issued under regulation 121.010, this regulation authorises CASA to issue that approval. All approvals granted by CASA under Part 121 are subject to the procedural requirements of Part 11. The regulation specifies that an approval shall only be granted if it preserves a level of aviation safety that is at least acceptable[1].

For the purposes of paragraphs 11.030(1)(a) and (aa) of CASR, all applications for regulation 121.010 approvals are to be made using the form titled *Air Operator's Certificate / Associated Approvals*, which is available from CASA's website. Section E3 of the form lists the specific information required to be provided for each regulation 121.010 approval. Approval applicants are advised that under regulation 11.040 CASA may request additional information or documents as part of assessing an application. Additionally, when evaluating approval

[1] Subregulation 11.055 (1B) of CASR.

applications, CASA will appropriately consider the matters mentioned in regulations 11.050 and 11.055 of CASR

In addition to approvals of significant changes under regulation 119.095, there are multiple specific CASA approvals available under regulation 121.010. These approvals are also considered to be a significant change as stated in paragraph 119.020 (c). An exception applies in relation to the reissue or replacement of an instrument previously issued by CASA in which the conditions or other substantive content of the instrument are unchanged. If operators are unsure whether the substantive content of an instrument is unchanged, contact CASA for advice.

Since a regulation .121.010 approval is taken to constitute a significant change under Part 119 of CASR due to paragraph 119.020(c), in accordance with paragraph 119.090(3)(c), an application for a regulation121.010 approval will need to be accompanied by a copy of the part of the operator's exposition affected by the regulation 121.010 approval (i.e. the significant change), clearly identifying the change.

AMC 121.015 Issue of Manual of Standards for Part 121

Reserved

GM 121.015 Issue of Manual of Standards for Part 121

This provision provides the authority for CASA to issue a Manual of Standards (MOS) for Part 121.

A MOS is a document that supports CASR by providing detailed technical material, such as technical specifications or standards.

MOSs are legislative instruments and are subject to registration and disallowance under the *Legislation Act 2003*. Part 11 sets out procedural requirements for the issue, amendment, or revocation of a MOS, including consultation requirements.

3 Subpart 121.C – General

3.1 Division 121.C.1—General flight limitations

AMC 121.020 Permitted categories of aeroplanes

Reserved

GM 121.020 Permitted categories of aeroplanes

Aircraft certification is the whole process of assessing an aircraft type against its type design and the aircraft's condition for safe operation, which culminates in issue of a Certificate of Airworthiness (CofA) for an individual aircraft. Type Certification is a part-process of aircraft certification which leads to issue of a Type Certificate or equivalent document.

The obligation for Contracting States of the International Civil Aviation Organisation (ICAO), of which Australia is a member, to issue CofAs, is expressed in Part II, Section 3 of ICAO Annex 8, "Airworthiness of Aircraft".

Aircraft are categorised in two discrete areas — operational and airworthiness.

Operational categories refer to the manner in which the aircraft is to be operated, i.e. Air Transport, Aerial Work or Flying Training.

An aircraft airworthiness category is essentially a homogeneous grouping of aircraft types and models of generally similar characteristics, based on the proposed or intended use of the aircraft, and their operating limitations.

Standard CofA may be issued in the following categories:

- Transport
- Normal
- Utility
- Acrobatic
- Commuter
- Manned free balloons
- Special class

The regulation provides that Part 121 operations may only be conducted in an aeroplane that is type certificated in the following categories:

- transport
- commuter
- normal (within the meaning of Special Federal Aviation Regulation 41 of the United States of America, as in force on 12 September 1983.

Additional information on aircraft categories is available in AC 21.1(1): Aircraft airworthiness certification categories and designations explained.

AMC 121.025 Aeroplane to be flown under the IFR

Reserved

GM 121.025 Aeroplane to be flown under the IFR

Part 121 operations must be planned and operated under the instrument flight rules (IFR). If clarification is required on the definition of IFR vs VFR reference should be made to Division 91.D.4 and the associated Part 91 MOS.

AMC 121.030 Flights further than the 60 minute distance

Reserved

GM 121.030 Flights further than the 60 minute distance

This regulation sets out the requirements for flights operating more than 60 minutes but not more than the threshold distance from an adequate aerodrome. For further guidance material refer to ICAO Doc 10085 - Extended Diversion Time Operations (EDTO) Manual.

AMC 121.035 Flights further than the threshold distance

Reserved

GM 121.035 Flights further than the threshold distance

Refer to Chapter 2 of the Part 121 MOS.

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required by this regulation to conduct EDTO to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

This regulation sets out the requirements for a flight to hold an approval for extended diversion time operations (EDTO). These are flights beyond the threshold times mentioned in regulation 121.030. For further guidance material refer to ICAO Doc 10085 - Extended Diversion Time Operations (EDTO) Manual.

AMC 121.040 Flight distance limitation over water

Reserved

GM 121.040 Flight distance limitation over water

If an aeroplane does not meet the ditching criteria of the relevant airworthiness standards and has a MOPSC of more than 30, then this regulation limits the permissible distance from land to the lessor of 2 hours at normal cruising speed or 400 Nm. An aeroplane is considered

against the relevant airworthiness standard when undergoing type certification. Operators should refer to the Type Certificate Data Sheet for any specific limitations.

AMC 121.045 Simulation of emergency or abnormal situations, or IMC

Reserved

GM 121.045 Simulation of emergency or abnormal situations, or IMC

This regulation prohibits the simulation of emergency situations, abnormal situations, or IMC (simulated IMC is defined in regulation 61.010). It is not intended to prevent crew from having general technical and scenario-based discussions including reference to aircraft checklists and publications. Examples of activities that would be considered a simulation of emergency or abnormal situations would include:

- manipulation/selection of switches or systems associated with emergency or abnormal checklists/actions

  or
- simulated pilot incapacitation or reduction to single pilot operations.

AMC 121.050 Ferrying an aeroplane with one engine inoperative

Reserved

GM 121.050 Ferrying an aeroplane with one engine inoperative

The regulation mitigates against adverse effects on the safety on air navigation by ensuring that an aeroplane for an air transport operation does not commence a flight with one engine inoperative. For aeroplanes that are permitted by the respective regulatory and certification material to conduct a one engine inoperative ferry flight this capability remains, however this type of flight cannot be conducted as a Part 121 operation.

The concept of a ferry flight is generally understood to be a positioning flight. A ferry flight will carry crew but will not be a passenger, cargo, or medical transport operation.

Operators proposing to conduct an engine-out ferry flight should refer to Part 91 to confirm the permissibility of such an operation.

Certain multi-engine aircraft such as the British Aerospace 146 are permitted (with specific conditions) by the flight manual to conduct a one engine inoperative flight. This regulation does not prohibit the conduct of such a flight, but it does prohibit the conduct of an air transport operation with one engine inoperative.

3.2 Division 121.C.2 — Operational documents

AMC 121.055 Compliance with flight manual

Reserved

GM 121.055 Compliance with flight manual

There is a Part 11 direction in force in relation to this regulation. The specific wording of this regulation mistakenly limits flight manual compliance to 'during a flight' (see the definition of flight in the *Civil Aviation Act 1988*), even though multiple flight manual requirements apply before a flight technically begins and after a flight ends. It is recommended that operators review section 25 of CASA EX83/21.

Transitional regulation 202.416A, item 20 of the table (which can be found here - Civil Aviation Legislation Amendment (Flight Operations—Consequential Amendments and Transitional Provisions) Regulations 2021), contains a provision that deems an existing CAR 232 flight check approval to be an exemption, where necessary, from the requirements of this regulation. CASA recommends operators read this regulation to determine its applicability to their operation.

The operator is required to ensure that the aeroplane is operated in accordance with all the requirements and limitations set out in the *aircraft flight manual instructions* that relate to the operation of the aeroplane. This regulation does not provide CASA the ability to give any concession to a limitation or procedure that is set out in the flight manual.

The definition of *aircraft flight manual instructions* is:

> ***aircraft flight manual instructions***, for an aircraft, means the following documents and information provided by the aircraft's manufacturer or issued in accordance with a Part 21 approval:
>
> (a) the aircraft's flight manual;
> (b) checklists of normal, abnormal and emergency procedures for the aircraft;
> (c) any operating limitation, instructions, markings and placards relating to the aircraft.

Reference to a flight manual includes reference to an aircraft flight manual, a flight crew operation manual, a pilot operations handbook, or another document that contains operating limits and requirements for safe operation of the aeroplane[2].

Aircraft flight manuals are required, under aircraft type certification rules (for example FAR Parts 23, 25, 27 and 29 and equivalent EASA rules), to contain a differing mixture of mandatory requirements and non-mandatory (advisory) elements. The balance in a flight manual between the mandatory and advisory material is dependent on which type certification rule applies to the aircraft.

Section 2.3 of AC 21-34 *Aircraft Flight Manuals* describes these different kinds of flight manual requirements as either "approved", as in required to be approved by the national aviation authority (NAA) that provides the initial certification of a new aircraft type, or

[2] See the definition of the phrase *flight manual* in the CASR Dictionary.

"unapproved", as in advisory content from the manufacturer that is not required to be approved by the NAA.

The wording of regulation 121.055 only requires compliance with mandatory flight manual elements. This is due to the use of the phrase 'requirement or limitation'.

AC 91-22 - Aircraft checklists contains information on aircraft checklists in the context of this regulation and similar regulations in Parts 91, 133, 135 and 138.

AMC 121.060 Operator to have minimum equipment list for certain flights

Reserved

GM 121.060 Operator to have minimum equipment list for certain flights

An exemption currently exists for some operators in relation to this regulation. It is recommended that operators review section 6 of CASA EX83/21. The approval mentioned in the exemption is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

This regulation requires the operator of an aeroplane to have a minimum equipment list (MEL) or equivalent document for the aeroplane before commencing a flight. Regulation 121.085 and the associated MOS division require the MEL to be carried on every flight.

The MEL should consider all items specified by the aeroplane manufacturer and include all operational requirements relevant to the AOC holder's operations.

Note: This regulation does not prescribe matters pertaining to the content or development of the MEL. Subpart 91.Y prescribes requirements for the development, approval, and variation of a minimum equipment list.

AMC 121.065 Duty statement to be available to crew

Reserved

GM 121.065 Duty statement to be available to crew

The intent is that all crew members are fully aware of their duties and responsibilities in relation to a flight.

In most cases this material will be found by referring directly to the operator's exposition. In some cases, an operator may prefer to create a specific document titled "Duty Statement" (or similar) covering each crew member classification.

This document continues to be part of the exposition; however, it would likely contain just the applicable material for the nominated position. For example, a cargo transport operator may consider this an appropriate method to provide information to an animal handler for transporting animals as part of a cargo transport operation. This would be considered sufficient, provided the crew member is aware of the applicable content.

AMC 121.070 Availability of checklists

Reserved

GM 121.070 Availability of checklists

Operators are required to make checklists available to each crew member before they begin to carry out any duties for a flight.

To meet the requirement, an operator must have processes and instructions published in the exposition for establishing, using, and maintaining checklists[3].

Establishing checklists

The requirement under this regulation is a corollary of regulation 121.055 which provides that an aeroplane must be operated in accordance with the requirements and limitations set out in the aircraft flight manual instructions[4]. The requirement is basic to flight safety, as the certification of aircraft airworthiness is conditional on aircraft being operated in accordance with flight manual requirements and limitations. Accordingly, checklists should include without deviation, the procedural steps of the normal, abnormal, and emergency procedures of the flight manual.

Checklists may be externally sourced, such as those produced by aircraft manufacturers, alternatively the checklists may be produced by the operator. In all cases, the operator is responsible for ensuring the checklists meet the requirement of regulation 121.055, and should include in the exposition, a process for verifying checklist conformity with the flight manual procedures.

Many modern aircraft are delivered with electronic checklists integrated with the flight management system. Whether electronic or otherwise, aircraft checklists should be a list of procedural checks devoid of other content such as amplifying notes. These checklists are known as ‘aircraft checklists’ or ‘abbreviated checklists’. Producing aircraft checklists by directly copying pages from a flight manual is generally unsuitable due to amplifying content or formatting.

The full procedures published in the flight manual including amplifying content, are sometimes referred to as ‘expanded checklists’ and should be available to crew for reference and study, by inclusion in a FCOM or exposition.

An exposition should also include procedures for ensuring the aircraft checklists are durable, accessible, and usable in all flight conditions including night, turbulence and emergencies.

Usage

Instructions for the use of checklists, published in the exposition, should describe how, when and by whom each checklist is to be carried out. Many of these matters are at the discretion of the operator; for example, work methodology (procedural actions followed by checklist, or the checklist determining procedural action and check), standard phraseology, limitations for commencement or completion of a checklist.

[3] See paragraph 119.205(1)(h) of CASR.
[4] The phrase *aircraft flight manual instructions* is defined in the CASR Dictionary.

In a multi-crew environment, the use of an interactive 'challenge and response' procedure is preferable and will assist in crew situational awareness. Precise instructions for use in all circumstances should be described, including dealing with contingencies such as interrupted checks or erroneous responses.

Knowledge and competency in correct checklist usage should be part of crew training and checking.

Maintenance

The integrity of the checklist system is maintained through document control, amendment and distribution processes described in the exposition. For document control, each checklist should be identified with version control markings, such as version number and/or date.

A checklist is considered to be part of the operators' exposition and accordingly any changes/amendments are required to use the change management process required by Subpart 119.C. To ensure implementation of flight manual procedural changes, an operator should have arrangements for receipt of these amendments.

Distribution to aircraft and crew of original and subsequent checklists should be controlled and recorded. Periodic checks should be conducted of the condition and functionality of the aircraft checklists.

For more information, refer to AC 91-22 - Aircraft checklists. Other related guidance documents on the use of EFBs are AC 91-07 - Cabin electronic flight bags and AC 91-17 - Electronic flight bags.

3.3 Division 121.C.3 — Flight related documents

There is an exemption in force in relation to Division 121.C.3 and Division 91.C.3 of CASR that effectively permits operators to use the Part 121 flight documents rules to replace the Part 91 flight document rules during a private operation conducted by the operator. It is recommended that operators review section 15 of CASA EX83/21.

AMC 121.075 Electronic documents

Reserved

GM 121.075 Electronic documents

General guidance on electronic certifications, record keeping and management systems is available in AC 11-03 Electronically formatted certifications, records and management systems. Specific guidance on the use of electronic flight bags is available AC 91-17 Electronic flight bags and AC 91-07 Cabin electronic flight bags.

This regulation confirms that the requirement to carry a document may be satisfied using an electronic format. Where electronic documents are stored and/or downloaded from a 'document cloud' or any other source, the operator and the pilot in command (PIC) must ensure that a copy of the current electronic document is stored on the applicable device such that the material is accessible when the device is in 'flight mode'.

If international operations are conducted, the operator will also need to consider whether electronic documents are suitable in the country of operation.

AMC 121.080 Availability of parts of exposition

Reserved

GM 121.080 Availability of parts of exposition

This regulation requires that relevant sections of the exposition be available to crew members before a flight. The exposition includes any defined subsidiary manuals, such as a company operations manual, ground operations manual, cargo handling manuals, dangerous goods manual etc.

Full exposition requirements are detailed in Subpart 119.H of CASR.

AMC 121.085 Carriage of documents

Reserved

GM 121.085 Carriage of documents

Subregulation 121.085 (1) requires both the operator and the PIC to ensure that all of the required documents listed in Division 1 of Chapter 3 of the Part 121 MOS are carried on the aeroplane for a flight. The list in the Part 121 MOS only considers regulations in Part 121; therefore, in determining the complete list of required documents the operator and the PIC should also consider the requirements of other applicable Parts of the regulations.

Subregulations 121.085 (2) and (3) place responsibility on the operator as well as the flight crew member to ensure that flight crew members carry their flight crew medical certificate and licence.

Paragraphs 121.085 (2) (b) and (3) (b) remove the associated offence provision from both the operator and the flight crew member, provided that notification is provided to CASA as per the regulation.

AMC 121.090 Accessibility of documents

Reserved

GM 121.090 Accessibility of documents

Reserved.

AMC 121.095 Carriage of documents—flights that begin or end outside Australian territory

Reserved

GM 121.095 Carriage of documents—flights that begin or end outside Australian territory

Refer to Division 1 of Chapter 3 of the Part 121 MOS.

Reserved

AMC 121.100 Keeping and updating documents etc.

Reserved

GM 121.100 Keeping and updating documents etc.

The intent of this regulation is for operators to ensure that the document(s) prescribed in section 3.03 of the Part 121 MOS are accessible to a person on the ground for the duration of a flight. Currently the only document specified in the Part 121 MOS is a passenger list when conducting passenger transport operations.

It is acknowledged that aircraft crew may conduct a series of flights away from the company administrative base involving changes in the passengers who are aboard. In these situations, the exposition should contain procedures to ensure that updated information continues to be recorded and accessible to the nominated person on the ground. The method by which this is achieved is determined by the operator and could be by physical completion/transmittal of a form or by other suitable electronic means such as email/radio/datalink etc.

For paragraph 121.100 (b) the exposition needs to contain procedures (refer paragraph 119.205 (1) (h)) about how this information will be updated.

Although this information is part of the normal record keeping requirements detailed in Part 119, this requirement also ensures that the most recent information is available for purposes such as search and rescue.

AMC 121.105 Journey logs

Reserved

GM 121.105 Journey logs

An amendment to this regulation was publicly consulted as part of the Part 121 MOS Tranche 1 public consultation which occurred between 20 June and 20 July 2020.

Prior to the regulation being amended, operators should refer to the exemptions contained in sections 7 and 8 of CASA EX83/21.

The operator is required to have procedures that provide guidance for when the PIC must have completed the journey log for the flight and the methods by which this may be

achieved. The journey log must be completed as soon as practicable after the end of the flight, but in all cases prior to the next flight of the aeroplane.

Subregulations 121.105 (3) and (5) require that the following information be recorded:

- aeroplane registration mark or flight number
- the date of the flight
- each crew member's name and their assigned duties
- the place and time of departure
- the quantity of fuel added during refuelling
- the total fuel on board the aeroplane at departure
- the place and time of arrival
- total flight time
- quantity of fuel remaining after the flight
- any incidents or observations relevant to the flight.

Note: This regulation does not require a separate document specifically named "'journey log" to be produced, however the operator must be able to demonstrate how the information is recorded and accessible when needed.

AMC 121.110 Passenger lists

Reserved

GM 121.110 Passenger lists

When conducting either a passenger transport operation or a medical transport operation, the regulation prescribes that the following information must be recorded by the operator:

- aeroplane registration mark or flight number
- the name of each passenger
- the places of departure and destination for each passenger
- the number of infants carried
- the date and estimated time of departure of the flight.

The operator may prepare a specific passenger list document or may choose to record the information by other means, including as part of other operational documents. The operator must be able to demonstrate how the information is recorded and accessible when needed.

AMC 121.115 Flight preparation forms for flights that begin or end outside Australian territory

Reserved

GM 121.115 Flight preparation forms for flights that begin or end outside Australian territory

This regulation applies to the flight of an aeroplane that will begin or end at an aerodrome outside Australian territory and is applicable to both the operator and the PIC.

A flight preparation form must be completed and signed by the PIC. The form should be detailed in the operator's exposition as per the requirements of paragraph 119.205 (1) (h).

The form provides a checklist of essential requirements and its completion is used to demonstrate that the regulatory requirements for the flight are being met. The flight preparation form may be reviewed by other aviation regulators during the conduct of international ramp check activities.

3.4 Division 121.C.4 — Reporting and recording defects and incidents etc.

AMC 121.120 Procedures for reporting and recording defects etc.

It is an acceptable means of compliance with this regulation if the operator's procedures in their exposition:

- requires all reporting of defects and incidents to be recorded in the aeroplane flight technical log or maintenance release (as applicable) by flight crew
- provides a list of the matters requiring entry in their exposition.

Note: The matters requiring an entry are listed in the regulation and the operator may choose (or not) to require other matters to be reported.

GM 121.120 Procedures for reporting and recording defects etc.

The regulation requires operators to have procedures in their exposition for a crew member to fulfil their responsibilities regarding the recording of the matters referred to in the regulation. The provision is not a substitute for any defect reporting requirements in Part 42 or Part 4A of CAR. Defects are to be recorded in the rotorcraft flight technical log or maintenance release, whichever is in use.

The requirements of this regulation also apply to any item of operational or emergency equipment fitted to the aeroplane, regardless of whether it is required by the approved design for the aeroplane or the regulations for the flight.

AMC 121.125 Procedures for reporting and recording incidents

Reserved

GM 121.125 Procedures for reporting and recording incidents

The operator's exposition must include procedures for reporting and recording incidents which may be, or have the potential to become, a hazard to the safety of the aircraft, people, or property. A core element of an operator's Safety Management System (SMS) includes feedback of incidents that pose a threat to safety. The operator should provide guidance in the exposition as to what matters should be reported and recorded and how this is to be done.

Note: Regulation 91.675 also requires the PIC to report hazards to air navigation.

This regulation does not replace any reporting requirements imposed by other authorities, such as Airservices Australia, ATSB, Australian Border Force, AMSA or other agencies as applicable to the particular activity.

3.5 Division 121.C.5 — Search and rescue services and emergency and survival equipment

AMC 121.130 Information about search and rescue services

Reserved

GM 121.130 Information about search and rescue services

This regulation places the responsibility on the operator to provide flight crew members with information about search and rescue services relevant to the proposed flight.

The ERSA is the primary source of this information in the Australian FIR. Outside the Australian FIR, the equivalent document of the relevant national aviation or airspace authority is suitable. For remote locations, there may be specific information relating to available services in the locality, such as boats, populated locations, functional unregistered airstrips, manned radio frequencies etc. The details of these services should be documented by the operator and presented in a fit for purpose manner to the flight crew.

These documents are considered to form part of the operator's exposition.
Regulation 121.080 also considers availability of the exposition.

AMC 121.135 Information about emergency and survival equipment

Reserved

GM 121.135 Information about emergency and survival equipment

This rule places requirements on the operator to have, at minimum, information about the items listed in section 3.04 of the Part 121 MOS available for communication to a rescue coordination centre.

Contact telephone numbers for the rescue coordination centre can be found in AIP-GEN Search and Rescue. It is recommended that the information be held at a designated place, familiar to relevant staff, until the completion of the flight. Additional Part 121 requirements for the carriage and use of life jackets, life rafts and first-aid kits are set out under Subpart 121.K.

For the entry in the Part 121 MOS that requires the operator to hold information on the type of each portable emergency locator transmitter (ELT), it is recommended that operators describe each type in relation to the ICAO Annex 6 Part I definitions of types of portable ELTs. These definitions are repeated below:

- Automatic portable ELT (ELT(AP)): An automatically-activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.
- Automatic deployable ELT (ELT(AD)): An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.
- Survival ELT (ELT(S)): An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

3.6 Division 121.C.6 — Miscellaneous requirements

AMC 121.140 Crew activities necessary for safe operation

Reserved

GM 121.140 Crew activities necessary for safe operation

The regulation prohibits an operator from requiring a crew member to perform an unnecessary activity during specific phases of a flight and prohibits the crew member from performing it. This is known as the “sterile flight compartment” rule but the applicability extends to all crew members. The underlying principle is for flight crew to focus on the task of flying the aeroplane, specifically in critical and high workload phases of flight.

It is not intended that this regulation prohibit the operator from determining what duties are necessary to be conducted during these phases of flight. The operator's policy, procedures and any limitations for this shall be detailed in the exposition[5].

A typical limitation would be the prohibition of any non-standard communication between the flight crew during these periods.

In determining the criteria for “necessary activities” (where both the criteria and the activities are included in the operator’s exposition), consideration should be given to the following:

- Identification of the activity that commences a particular sterile phase, such as closing the final door on the ground (departure) or making the arrival Public Address (“Cabin Crew prepare for landing” (arrival).

[5] paragraph 119.205(1)(h)

- Identification of the activity that would indicate to all crew that a particular sterile period has ended, such as turning off the seat belt signs (departure) or engine shutdown (arrival).
- An explanation of the activities that are deemed necessary (or conversely, examples of activities that would clearly violate the requirement in subregulation 121.140 (2)).

The regulation does not prescribe any altitude limits for when the initial climb phase of a flight would end or when the approach phase of a flight would begin. This is left to the operator to determine and requires the operator to consider the particular nature of their operations (the details will vary between different operators and aeroplane types).

Typical altitude examples of the selected sterile flight compartment phase are:

- For an aeroplane that cruises above the transition level - the sterile phase is normally in place for any operations below the transition level.
- For an aeroplane that cruises below 10,000 ft - the sterile phase is normally in place for any operations that are below the cruise altitude.
- For all aircraft - during instrument departure and approach operations.

During the sterile flight compartment phase, the following should be observed:

- flight crew should restrict activities to essential operational matters only
- non-ATC radio communications should not be conducted unless operationally necessary
- conversations unrelated to flight operations should not occur
- if fitted, flight crew must make use of headsets and boom microphones for the purpose of all radio communication
- cabin/other crew are not to contact the flight crew unless it is for an operational or safety-related item.

Situations requiring contact with flight crew during the sterile phase may include:

- signs of fire
- a burning smell, or the presence of smoke inside or outside
- fuel or fluid leakage
- malfunctions of emergency exit doors
- extreme cabin temperature changes
- evidence of airframe icing
- equipment or furniture malfunction/breakage which poses a hazard to the occupants
- any suspicious objects
- disruptive passengers
- security threats
- abnormal vibration or noise
- medical emergency
- deployment of oxygen masks (if fitted)
- any other condition deemed significant a cabin/other technical crew member.

All crew members should be trained in the sterile flight compartment procedures established by the operator, as appropriate to their duties.

For operations where interactions between flight crew and passengers are likely the passenger safety brief should include guidance on these matters, i.e. when communications with flight crew would be considered inappropriate and distracting.

AMC 121.145 Competence of ground support personnel

Reserved

GM 121.145 Competence of ground support personnel

There are three exemptions in force in relation to this regulation, as follows:

- There is an exemption in force in relation to this regulation and ground support personnel who are not direct employees of the operator. It is recommended that operators review section 14A of CASA EX83/21.
- There is an exemption in force in relation to this regulation and ground support personnel who are under training and are direct employees of the operator. It is recommended that operators review section 14C of CASA EX83/21.
- There is an exemption in force in relation to subregulation 119.170(4) and its application to operational safety critical personnel who are not flight crew members, cabin crew members or other crew members assigned duties on board an aircraft for the flying or safety of the aircraft. It is recommended that operators review sections 14 and 15 of CASA EX82/21.

The term ‘ground support personnel’ is not itself defined in CASR, but instead relies on the common understanding of the phrase ‘ground support’ combined with the CASR definition of the word ‘personnel’. Paragraph (a) of the definition of *personnel* in the CASR Dictionary applies to Australian air transport operators and states:

> ***personnel***:
> (a) for an Australian air transport operator or an aerial work operator, includes any of the following persons who have duties or responsibilities that relate to the safe conduct of the operator’s Australian air transport operations or aerial work operations:
> (i) an employee of the operator;
> (ii) a person engaged by the operator (whether by contract or other arrangement) to provide services to the operator;
> (iii) an employee of a person mentioned in subparagraph (ii); or

Typical ground support duties would include, but are not limited to, the following:

- aeroplane fuelling
- anti-icing and de-icing of the aeroplane
- preparation of aeroplane weight and balance documentation
- flight planning

- aeroplane receipt and dispatch
- passenger acceptance and boarding (where this relates to the safe conduct of the Australian air transport operation)
- passenger transport to and from the aeroplane (where this relates to the safety of the Australian air transport operation – as an example, this might not include an airport operator's bus that transports passengers from the terminal to the aeroplane)
- operation of passenger loading devices
- preparing baggage and cargo for flight
- loading and unloading the aeroplane
- the operation of ground support equipment.

Australian air transport operators subject to subregulation 119.170(5) must ensure their training and checking system includes the matters mentioned in subregulation 119.170(4) in relation to operational safety-critical personnel (this term is defined in the CASR Dictionary) who are not flight crew or cabin crew. In almost all cases, a person classified as ground support personnel would be operational safety-critical personnel, and therefore the requirements of subregulation 119.170(4) would overlap with the requirements of this regulation. Regulations 119.175 and 119.185 would also overlap with this regulation.

Additional information on regulation 119.170 and training and checking systems is in GM 119.170 and AC 119-11 - Training and checking systems. Additional information on regulation 119.175 and training programs for human factors principles and non-technical skills is available in GM 119.175 and AC 119-12 - Human factors principles and non-technical skills training and assessment for air transport operations.

Solely in relation to regulation 121.145, compliance is related to the operator satisfying themselves that the ground support personnel have successfully completed their training and been assessed as competent to perform their assigned ground support duties.

Note that this regulation neither requires the operator to perform the training and assessment themselves, nor limits who may conduct the training and assessment activities. If the training and assessment of ground support personnel is performed by another organisation, the method by which the operator satisfies itself as to the training and competence of ground support personnel must be included in the operator's exposition[6].

Some examples of how an operator could satisfy itself regarding the successful completion of training and assessment of competency could include:

- auditing the systems/training in those areas of a service and/or support that a contractor should be providing to the operator; or
- verifying the certification of the contractor by a *recognised foreign State* (the countries included in this list are as per the definition of this term in regulation 61.010); or
- verifying the certification of the contractor by an internationally recognised industry standard such as that provided by the International Business Aviation Council

[6] paragraph 119.205(1)(h)

(IBAC) (information relating to this certification is available at IS-BAH, International Standard for Business Aircraft Handling | IBAC).

From the perspective of this regulation, it is recommended that operators regularly conduct due diligence checks of either a contractor's training and assessment processes or ongoing certification status.

It should also be noted that Subpart 119.J contains requirements relating to training and checking records.

AMC 121.150 Duty statement to be available to ground support personnel

Reserved

GM 121.150 Duty statement to be available to ground support personnel

There is an exemption in force in relation to this regulation and ground support personnel who are not direct employees of the operator. It is recommended that operators review section 14B of CASA EX83/21.

For a description of the legal definition that underpins the term 'ground support personnel', and a description of the kinds of persons who might constitute ground support personnel, refer to GM 121.145.

The intent is that all ground support personnel are fully aware of their duties and responsibilities in relation to a flight.

In most cases this material will be found by referring directly to the operator's exposition. In some cases, an operator may prefer to create a specific document titled "Duty Statement" (or similar) covering each personnel classification.

This document continues to be part of the exposition; however it would likely contain just the applicable material for the nominated position. For example, a cargo transport operator may consider this an appropriate method to provide information to an aircraft loader responsible for the loading of pallets as part of a cargo transport operation. This would be considered sufficient, provided that the ground support person is aware of the applicable content.

AMC 121.155 Cockpit authorisation and briefing

Reserved

GM 121.155 Cockpit authorisation and briefing

There is an exemption in force in relation to this regulation and the persons permitted to enter the cockpit. It is recommended that operators review section 14D of CASA EX83/21.

This regulation sets out the persons who are permitted entry to the cockpit during the flight. Those persons permitted to enter the flight deck must be briefed as soon as possible after entry on the relevant safety procedures.

The briefing must be conducted by the PIC or the co-pilot. The briefing should include the requirements relating to sterile cockpit procedures developed by the operator to comply with regulation 121.140.

In considering the compliance matters for this regulation, cross reference will also be needed with regulation 4.67 of the *Aviation Transport Security Regulations 2005*.

4 Subpart 121.D — Operational procedures

4.1 Division 121.D.1 — Operational control

AMC 121.160 Operational control

Reserved

GM 121.160 Operational control

Operational control is defined as the exercise of authority over the initiation, continuation, diversion or termination of a flight in the interests of safety of the aircraft and the regularity and efficiency of the flight. Some examples of areas that fall under operational control are:

- risk assessment
- fuel management
- selection of alternate aerodromes
- in-flight diversions
- criteria for acceptance or non-acceptance of a flight
- criteria for rejecting the carriage of a passenger or cargo.

This regulation requires the operator to include, in the exposition, a description of how operational control is exercised on behalf of the operator. The exposition must also include a description of the responsibilities of each person who is to exercise operational control.

This regulation does not alter or replace regulation 91.215 regarding the authority and responsibilities of the PIC, nor regulation 121.490 regarding the assignment to duty as PIC, nor regulation 121.180 regarding availability of flight planning information. Therefore, from the beginning to the end of a flight, the PIC is, under almost all circumstances, generally the person exercising operational control.

Unlike some overseas jurisdictions, in Australia there is no formal licensing scheme for flight operations officers / flight dispatchers. Therefore, it is rarer for these persons to be formally delegated operational control even for pre- or post-flight matters. More routinely, if an operator does have an operations officer, that person provides information and advice to the PIC for the PIC to make the final decision.

The intent of this regulation is to ensure that if an operator does determine that a person other than the PIC has responsibility for certain matters that fall within the definition of operational control, that the operator clearly specifies these matters in their exposition.

In the simplest case, the operational control responsibility for a flight may rest solely with the PIC. It is not the intent of the regulation to mandate any more resources or processes in excess of those needed to fulfil the requirement.

In the case of a larger operator, it would be unlikely that individual flight crew could carry out all of the functions mentioned in the definition effectively, and still be able to operate the aircraft on the service. For example, a person on the ground other than the PIC may have far easier access to the information regarding non-weather factors that means they are best placed to make a decision to divert a flight to another aerodrome, or to terminate a flight and

instruct that it return to home base. In all these cases, the PIC at all times retains a 'reserve power' to undertake the actions necessary to ensure the safety of the flight.

In these kinds of circumstances, the operator may elect to assign operational control duties to other trained personnel if the approved method of control and supervision of flight operations assistance requires the use of such a person. It is up to the operator which part or how much of the operational control assistance capability is assigned and to whom. Naming conventions for such persons, such as flight operations officer/flight dispatcher, are not mandated by CASA.

Some duties associated with operational control that may be given to trained personnel are:

- scheduling of departure and arrival times
- crew assignment and flight and duty time management
- risk assessment of routes and ports
- flight preparation including the completion of operational and ATS flight plans
- load and passenger control
- liaison with the air traffic control
- meteorological and communication services monitoring and the provision to the PIC during flight of information necessary for the safe and efficient conduct of the flight
- monitoring the progress of each flight under their jurisdiction
- parking position assignments
- aircraft utilisation tracking
- advising the PIC of company requirements for cancellation, re-routing or re-planning, should it not be possible to operate as originally planned.

The following list contains some example scenarios where the conduct of operational control tasks could be delegated to a person other than the PIC, subject to the final acceptance by the PIC:

A medical transport operation may receive its tasking from an air ambulance tasking coordination centre direct to the operator's operations room.

This room is manned by an operations officer who coordinates aircraft preparations with the crew, or coordinates with the ambulance service to make preparations for the aircraft landing at a destination car accident site.

After the departure of the flight, an operations officer may become aware, via information from ground crews at the medical transport pickup location, of critical information such as hazards at the aerodrome. The operations officer passes this information onto the crew so that the crew can conduct an in-flight operational risk assessment for go/no-go decision-making processes.

An operator conducting international passenger transport operations maintains a flight dispatch centre that manages:

- route planning for the purpose of dropping off and picking up passengers and cargo
- allocation of resources (aircraft and crew)
- the redirection of aircraft due to any changes.

Additional information is also available in FAA AC 120-101 Part 121 Air Carrier Operational Control

4.2 Division 121.D.2 — Flight preparation

AMC 121.165 General flight preparation requirements

Reserved

GM 121.165 General flight preparation requirements

An operator's exposition must include procedures to ensure that the flight of an aeroplane is compliant with the flight preparation requirements for both weather and alternates.

The Part 91 MOS sets out the requirements for weather.

The Part 121 MOS set out the requirements for alternate aerodromes for a Part 121 operation, including take-off, en route and destination alternate requirements.

AMC 121.170 Flight preparation (Part 121 alternate aerodromes) requirements

Reserved

GM 121.170 Flight preparation (Part 121 alternate aerodromes) requirements

Refer to Chapter 4 of the Part 121 MOS.

There is an exemption in force, for transitional purposes only, in relation to this regulation where an old CAR 240 permission was in force. It is recommended that operators review section 4 of CASA EX161/21.

There is an exemption in force in relation to regulation 121.170 and regulation 91.235 that effectively permits operators to use the Part 121 alternate aerodrome rules instead of the Part 91 alternate aerodrome rules during a private operation conducted by the operator. It is recommended that operators review section 16 of CASA EX83/21.

Further guidance is provided in AC 121-11[7].

[7] At the time of publishing v2.1 of this AMC/GM, this AC is yet to be published.

4.3 Division 121.D.3 — Flight planning

AMC 121.175 Operational flight plans

It is an acceptable means of compliance with this regulation if the operator uses the Airservices Australia flight notification form in combination with an operator-provided form that addresses the requirements of this regulation not included in the Airservices form.

GM 121.175 Operational flight plans

Chapter 5 of the Part 121 MOS prescribes the minimum information to be included in an operational flight plan (OFP).

ICAO states that an operational flight plan is the operator's plan for the safe conduct of the flight based on considerations of helicopter performance, other operating limitations, and following relevant expected conditions on the route and at the aerodromes concerned.

An operator may elect to construct a single document that meets multiple regulatory requirements including items such as the operational flight plan, management of fuel requirements, and the journey log.

Alternatively, the operator may keep these as single purpose documents. Regardless of the format selected, the operator remains responsible for ensuring that the selected document format satisfies the requirements of the regulations.

The operator must have procedures[8] that specify when the PIC must have completed the operational flight plan for the flight, and the methods by which this may be done.

Waypoints should be selected at regular intervals to provide the flight crew with an accurate assessment of the progress of the flight in relation to time and fuel burn. Where practical, the waypoints should not be more than one hour apart (e.g., oceanic flights may have waypoints further apart etc.).

The operator’s exposition should contain specific instructions for personnel applicable to the review of information and any computational procedures associated with the required flight planning information[9]. For example, the operator’s computer flight planning software may provide completed fuel summaries, including trip fuel, contingency, final fuel and alternate destination fuel figures. The exposition material should provide sufficient information on how these figures constructed such that the flight crew are able to check the accuracy of the calculations. This is particularly important when conditions may change necessitating a recalculation after the crew has left the point where they may access a revised computer-generated plan.

[8] paragraph 119.205(1)(h)
[9] paragraph 119.205(1)(h)

AMC 121.180 Availability of flight planning information

Reserved

GM 121.180 Availability of flight planning information

An operator must ensure that the PIC and any person with responsibilities for flight planning, inflight replanning or operational control has access to the required flight planning information.

This may include access to a dedicated flight planning facility, or make use of suitable “deployable” electronic equipment such as laptops, tablets, EFBs etc.

The operator’s exposition should contain specific procedures for personnel on accessing and using flight planning information when flight planning at:

- the operator's base of operations
- all satellite locations
- ad-hoc facilities.

If international operations are conducted, then these procedures must include how flight planning information is accessed when operating at international locations.

For all personnel (PIC, flight planning staff, external providers) involved in flight planning activities, the operator's procedures must describe how this process is accessed and how the relevant information is distributed to the applicable personnel such as the PIC, operational support areas etc.

4.4 Division 121.D.4 — Flight rules

AMC 121.185 Take-off and landing minima for aerodromes

Reserved

GM 121.185 Take-off and landing minima for aerodromes

The operator’s exposition shall contain procedures for personnel to determine the take-off and landing minima applicable to company operations.

The basic concept is that operators may choose to apply more conservative minima than those prescribed by regulations, but never less limiting ((see paragraph 121.185 (2) (a) and subregulation 121.185 (3)).

The general take-off and landing minima are prescribed in the Part 91 MOS.

The operator selected take-off minima must consider the ability of the PIC to conduct either a continued or discontinued take-off safely while allowing for abnormal circumstances, such as an engine failure.

In constructing exposition procedures, it is recommended that the operator consider:

- the type, performance and handling characteristics of the aeroplane and any conditions or limitations stated in the flight manual
- the composition of the flight crew, their competence and experience
- the dimensions and characteristics of the runways which may be selected for use
- the adequacy and performance of the available visual and non-visual ground aids
- the equipment available on the aeroplane for the purpose of navigation, acquisition of visual references and/or control of the flight path during the approach, landing and the missed approach
- the obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures
- the means used to determine and report meteorological conditions
- the obstacles in the climb-out areas and necessary clearance margins
- any conditions prescribed in the operations specifications
- any minima that may be promulgated by the State of the Aerodrome.

Operators might choose to assess these factors using a risk assessment.

If international operations are conducted in countries where the local regulations specify different criteria for the take-off and landing minima, then the operator's exposition should detail how the criteria used to establish the operator's minima vary from those in use locally.

AMC 121.190 Establishing lowest safe altitudes etc.

Reserved

GM 121.190 Establishing lowest safe altitudes etc.

This regulation requires operators to identify (establish) whether or not there is a published lowest safe altitude for a route or route segment. If there is not a published lowest safe altitude, the operator is required to determine a lowest safe altitude'

'Lowest safe altitude' is a defined term in the CASR dictionary. The definition permits an operator to outline a method of calculating a lowest safe altitude in their exposition that differs from that specified in the Part 173 MOS (which is replicated in the AIP). Operators should be aware that CASA would normally only accept the use of such a method when it is intended to be used outside Australian territory.

The following matters should be considered when calculating a lowest safe altitude for a route:

- the accuracy and reliability with which the position of the aeroplane can be determined
- inaccuracies in the indications of the altimeters used
- the characteristics of the terrain (e.g., sudden changes in the elevation)
- the probability of encountering unfavourable meteorological conditions (e.g., severe turbulence and descending air currents)
- possible inaccuracies in aeronautical charts

- airspace restrictions.

AMC 121.195 Exposition requirements for low-visibility operations

Reserved

GM 121.195 Exposition requirements for low-visibility operations

The regulation requires inclusion of a list of requirements in an operator exposition if low-visibility operations are intended. A low-visibility operation is defined in the Part 91 MOS and includes:

- a low visibility take-off (LVTO)
- an approach using minima less than the CAT I minima published in the AIP for the runway in use.

If low-visibility operations are not conducted, then this should be clearly stated in the exposition.

Specific rules for IFR take-off and landing minima are contained in Chapter 15 of the Part 91 MOS.

Guidance on low visibility operations is contained in AC 91-11 - Approval to conduct low visibility operations and AC 91-12 - Conduct of practice of autoland operations.

AMC 121.200 Stabilised approach requirements

Reserved

GM 121.200 Stabilised approach requirements

The regulation requires the exposition to include procedures concerning stabilised approaches. A stabilised approach is one during which several key flight parameters are controlled within specified ranges during an approach. Although most frequently thought of as only involving the latter part of an approach, stabilising an aircraft begins much earlier and operator procedures are recommended to consider earlier staged stabilised approach procedures depending on the operational circumstances (weather, type of approach being conducted etc). Conformance with established stabilised approach criteria is important for all flights.

The parameters include:

- aeroplane configuration
- flight path trajectory
- attitude
- rate of descent
- airspeed
- engine thrust or power setting.

In considering the numerical values of the parameters, operators should consult the flight manual and manufacturer sources in the first instance, considering areas such as what tolerances are provided in the calculation data. For example, some flight manuals state that the landing distance calculations are dependent on the aircraft being flown in a specific speed range, and this range varies between types. If no flight manual or manufacturer guidance is available, then operators may consider the parameters specified in the Part 61 MOS, Schedule 8 Table 2: *Aeroplane general flight tolerances – professional level*.

A stabilised approach has the effect of reducing pilot workload, allowing a greater focus on flight path and airspeed, and establishes the aeroplane at the optimal speed, position, and attitude for the landing flare.

Conversely, pilot workload increases when the above parameters are not stable, allowing less time to focus on flight path and airspeed, potentially leading to difficulties achieving the desired touchdown point and larger changes of attitude during the flare.

Some situations that reduce the likelihood of a stabilised approach include:

- circling approaches
- discontinuing an approach before the minima/MAPT to continue in VMC
- instrument approaches flown with “step-down” segments instead of a continuous descent
- low level circuits.

These circumstances should be avoided when they are not operationally necessary, or where other more suitable procedures exist.

For many operators, the exposition procedures for a stabilised approach would require that:

- the aeroplane is in its planned landing configuration
- all normal briefings and checklists have been completed
- the aeroplane is on the correct flight path (both laterally and vertically within the most conservative of the parameters required by the operator or the procedure being conducted)
- the aeroplane is maintaining the appropriate final approach speed (including any allowances for turbulent air conditions, crosswind or windshear)
- the maximum descent rate is not exceeded
- the power setting is appropriate to the aeroplane configuration.

The exposition should clearly define the heights at which the aircraft must meet the stabilised approach criteria. If applicable, the operator may elect to list more than one height when considering both IMC and VMC operations, for example:

- In instrument meteorological conditions (IMC), all flights would be stabilised by no lower than 1 000 ft above the aerodrome elevation.
- In visual meteorological conditions (VMC), all flights would be stabilised by no lower than 500 ft above the aerodrome elevation.

For lower performance aeroplanes, the GM 135.175 entry in the Part 135 AMC/GM

document has further guidance.

Go-Around Policy

Standard operating procedures should include the operator's policy on the criteria for a mandatory go-around. This policy will normally require that if an approach is not stabilised or has become destabilised at any subsequent point after the minimum height during an approach, a go-around is required. Operators should reinforce this policy through training.

4.5 Division 121.D.5 – Aerodromes

There is a direction in force in relation to the use of military aerodromes. Pilots and operators are recommended to review section 11 of CASA EX81/21.

AMC 121.205 Aerodrome requirements

Aerodrome lighting

This AMC applies to:

- paragraph 121.205(2)(a), i.e. that the aerodrome from which an aeroplane takes off, or the aerodrome at which an aeroplane lands, must be suitable for the aeroplane to take-off and land; and
- paragraph 4.08(7)(a) of the Part 121 MOS, i.e. that where the estimated time of use of an aerodrome includes a period which is night, the aerodrome lighting must include the lighting necessary to ensure safe operations is available and used by the flight.

Minimum lighting

When conducting operations at night, or by day when the visibility is not sufficient to safely taxi, take-off or land without runway, taxiway or obstacle lighting, it is an acceptable means of compliance with the regulatory provisions above if the pilot in command or operator ensure that the following minimum kinds of lighting are available and used for the flight:

- **All operations**:
  - runway edge lighting
  - threshold lighting
  - illuminated wind direction indicator (not required if wind velocity information can be obtained from an authorised weather report)
  - obstacle lighting (when specified in local procedures);
- **Aeroplanes with a maximum certificated passenger seating capacity > 19 seats** – all lighting must be electric and include all of the above lighting plus:
  - taxiway lighting
  - apron floodlighting.

Lighting availability time periods

When conducting operations at night, or by day when the visibility is not sufficient to safely taxi, take-off or land without runway, taxiway or obstacle lighting, and PAL is not being used, it is an acceptable means of compliance with the regulatory provision above if the pilot in command or operator ensure that arrangements have been made for the lighting to be operating during the

estimated time of use of the aerodrome, or, for the departure aerodrome, from at least 10 minutes before departure to at least 30 minutes after take-off.

A pilot or operator that has an arrangement with an external party for aerodrome lighting (whether ATC or the aerodrome operator) must notify any change in requirements. Confirmation must be obtained that requests for lighting will be satisfied.

Notes:

1. Aerodrome lighting at an aerodrome where a control tower is operating will be activated by ATC as necessary. Pilots requiring aerodrome lighting outside the ATC published hours should use PAL, if available, or make appropriate arrangements with ATC.
2. Aerodrome lighting at non-controlled aerodromes (including aerodromes where ATC has already ceased duty) should be arranged with the aerodrome operator, or by using PAL facilities, if available.
3. The AIP-ERSA identifies locations where selected runway lighting is routinely left switched on during hours of darkness.

Exposition procedures for no-slope approaches

For the purposes of subparagraph 121.205(4)(b)(ii) of CASR, in relation to conducting an approach and landing on a runway with an approved visual approach slope indicator system that has been inoperative for no more than 7 days, it is an acceptable means of compliance if the procedures for these activities in the operator's exposition include at least the following:

- A description of the circumstances where the procedure must be applied.
- A list of any aerodrome/runway combinations where the procedure is not permitted to be used.
- The specific method to be used for glidepath and aimpoint assessment and maintenance including at least the following:
  - distance reference source (e.g. GNSS threshold waypoint or DME source)
  - altitude/distance profile to flare and landing (not less than 1nm increments)
  - permissible altitude deviation values
  - maximum permissible rate of descent for regaining the desired vertical profile.
- Flight crew procedures and responsibilities in addition to normal (slope-guided) approaches including:
  - PM callouts in relation to glideslope and aimpoint maintenance and deviation including at least the following:
    - on-slope or glideslope deviation values at not less than 1nm increments (e.g. "passing 3 miles to touchdown, 60 feet high")
    - glideslope trend information as applicable (e.g. "maintaining" or "regaining from above")
    - aimpoint information and trend (e.g. "aiming short").
  - PF required control input responses and verbal readbacks, and
  - Criteria for discontinuing the approach.

Aeroplane approach slope indicator systems

For the purposes of paragraph 121.205(4)(c) of CASR, it is an acceptable means of compliance if any of the approach slope indicator systems listed below are mentioned in the operator's exposition, provided that the conditions relevant to each kind of system are satisfied:

- ILS and/or GLS: on the condition that this system provides information that enables the pilot to maintain approach slope control from the IAP minima to the commencement of the flare and landing for the runway.

  Note: Basic ILS and/or GLS fitment are satisfactory.
- Other 3D IAP that may include LNAV/VNAV, or RNP-AR on the condition that the system provides information that enables the pilot to maintain approach slope control from IAP minima to the commencement of the flare and landing for the runway.

  Note: LNAV+V IAP, or equivalent IAP or aeroplane VNAV path or vertical profile information, is advisory information only and is not taken to satisfy paragraph 121.205(4)(c).
- Heads up display (HUD), Head-Up Guidance System (HGS), or equivalent (HUD) display: on the condition that the system provides actual, calculated or predicted flight path vector or velocity vector, or flight path angle (FPA), presentation that provides approach slope information that enables the pilot to maintain approach slope control to the commencement of the flare and landing for the runway.
- Other vision systems, displays or instrumentation: on the condition that the system provides information in relation to approach slope that enables the pilot to maintain approach slope control to the commencement of the flare and landing, for the runway.

  Note: These systems might include Enhanced Vision Systems (EVS), Synthetic Vision Systems (SVS) or Combined Vision Systems (CVS).

GM 121.205 Aerodrome requirements

There is a direction in force in relation to the use of military aerodromes. This information is included in this GM section because, even though the direction does not specifically relate to this regulation, it relates to the general topic of aerodrome usage. Pilots and operators are recommended to review section 11 of CASA EX81/21.

An exemption in relation to slope indicator systems at aerodromes in foreign countries is in force. It is recommended that operators review section 9 of CASA EX83/21.

An exemption in relation to water aerodromes is in force. It is recommended that operators review section 10 of CASA EX83/21.

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required by this regulation to conduct operations without a visual slope indicator to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

The operator and the PIC must ensure that any aerodrome to be used is suitable for operating the aeroplane and, for aerodromes that are not certified, that the information and procedures (mentioned in regulation 121.210) about the aerodrome are readily available in the operator's exposition and to the PIC.

In considering the suitability of an aerodrome, an operator should reference the minimum width for the type of aircraft. Any operations to a narrow runway will necessitate the operator ensuring that their operation remains compliant with the requirements of regulation 121.220.

Note: Minimum runway width details are available in the AIP and the Part 139 MOS and these are in accordance with the ICAO aerodrome reference codes (ARC).

Use of non-certified aerodromes

If the aerodrome being used by an operator is not a certified aerodrome, the operator's obligations in determining whether the aerodrome is suitable for use become significantly more challenging. When an aerodrome is not certified, the aerodrome operator is not subject to the Part 139 mandatory reporting requirements for the aerodrome operator to report information about the aerodrome itself or about any obstacles infringing the obstacle limitation surface extending around the runways.

The air operator will need to establish alternative mechanisms to determine this critical information about an aerodrome, and, in order to meet the obligation on the operator to ensure an aerodrome is suitable for use, will need to have very robust methods of ensuring the suitability of the aerodrome, and its surrounding area, for every flight to and from the aerodrome. A reliance by the operator on historical data, depending on how recently it has been provided, might not meet the operator's obligations.

In these circumstances, the operator will need to establish, either in concert with the aerodrome operator or via another means[12] a reporting system that provides the data necessary to ensure that the operator, and its crew members, are notified of any changes to the aerodrome serviceability status, and the obstacles in the relevant surrounding airspace, before embarking on a flight to or from such an aerodrome.

For unsealed landing areas, the suitability of a runway is often affected by rain. An operator would need to establish reliable methods of ensuring the suitability of an unsealed runway during or after wet weather prior to a take-off or a landing being conducted.

At more rudimentary aerodromes, operators will also need to satisfy themselves that adequate precautions are in place to ensure that persons, objects and animals are kept off, or are clear of, runways, taxiways and parking areas during take-offs, landings and ground operations with engines running. Regulation 121.215 of CASR already requires the air operator to include procedures in their exposition that ensure the safety of persons in the vicinity of an aeroplane and these procedures will need to be more robust for operations at uncertified aerodromes due to the absence of the Part 139 protective framework.

Approach slope indicator systems fitted to aeroplanes

Subregulation 121.205(3) of CASR requires landings at planned destination aerodromes by certain aeroplanes to be supported by slope indication systems, with a limited number of exceptions. Subregulation 121.205(4) of CASR specifies the 4 methods of compliance. Operators should note that the methods mentioned in paragraphs 121.205(4)(c) and (d) of CASR are specific to the runway being used. If an operator intends to have their means of compliance include multiple runways at a single aerodrome, or multiple runways at multiple aerodromes, the operator will need to include within their exposition the relevant runway characteristics intended to be encompassed by their exposition content.

[12] Such as an agent at the aerodrome whose duty it is to provide the operator, whenever any conditions exist at or near the aerodrome that may affect the safety of an aeroplane attempting to take-off or land at the aerodrome, with information regarding those conditions.

1st method compliance – Aerodrome approach slope indicator systems

The f1st method of compliance is for the runway to be equipped with an *approved visual approach slope indicator system in accordance with Part 139*. The Part 139 approved systems include:

- T visual approach slope indicator systems (T-VASIS)
- an abbreviated T visual approach slope indicator systems (AT-VASIS)
- precision approach path indicator systems (PAPI).

Note: Part 139 approved systems do not include an abbreviated PAPI (APAPI or AP).

For destination aerodromes in a foreign country, section 9 of *CASA EX83/21 – Part 121 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2021*, requires that the aerodrome runway visual approach slope indicator system at the planned destination aerodrome be an operative T-VASIS, AT-VASIS or PAPI visual approach slope indicator system in accordance with the relevant standards in Annex 14 to the Chicago Convention. Abbreviated PAPI (APAPI or AP) are not included. The exemption does not preclude the use of 1 of the other 3 available methods at a foreign aerodrome runway that is a planned destination aerodrome.

Note: See the displaced threshold section of this GM for information about aerodrome runway approach slope indicator systems where a displaced threshold is in operation.

2nd method of compliance – when aerodrome approach slope indicator system inoperative for no more than 7 days

The 2nd method of compliance applies to when the aerodrome approach slope indicator system mentioned above is inoperative for no more than 7 days. For an operator to become compliant in this circumstance, the operator's exposition must include procedures for conducting an approach and landing on a runway with such a system inoperative.

AMC 121.205 includes an acceptable means of compliance in relation to the operator's exposition procedures for conducting an approach and landing on a runway with such a system inoperative.

3rd method of compliance – Aeroplane approach slope indicator systems

The 3rd method of compliance is for the aeroplane to be equipped or fitted with an approach slope indicator system mentioned in the operator's exposition that is suitable for use for the runway.

For clarity, in the context of subregulation 121.205(4), an approach slope indicator system is primarily referring to general aeroplane flight path slope information in the approach to landing phase of a flight. This phrase does not just mean ‘instrument approach procedure slope’.

In accordance with paragraph 121.205(4)© of CASR, the operator's exposition is required to mention the equipment fitment that is deemed suitable for the purpose and the runway.

AMC 121.205 includes an acceptable means of compliance in relation to the equipment that would be suitable for use on a runway.

Note: See the displaced threshold section of this GM for information about certain aeroplane approach slope indicator systems where a displaced threshold is in operation.

4th method of compliance – approval of an aeroplane and runway combination

The 4th method of compliance is for the aeroplane operator to be granted an approval for the aeroplane and the runway. The circumstances relevant to applying for an approval are where there is no aerodrome visual approach slope guidance (including unserviceable aerodrome equipment for more than 7 days) and where no aeroplane approach slope indicator system is fitted.

Persons applying for this approval are advised that CASA's general issuance of any approval is likely to include the following conditions (it should be noted that CASA will always examine each application for approval on its merits – this list is intended as general advice only):

- Specific weather minima, which in most instances will likely be circling approach minima.
- A requirement for the aeroplane TAWS to be operative, and that the operator must not use the TAWS exception in section 11.25 of the Part 121 MOS.

Operators are advised that under regulation 11.040, CASA may request additional information or documents as part of assessing an application. Therefore, to avoid delays in processing applications, operators are advised to include information related to the following matters in their exposition content:

- whether limitations will be applied by the operator on the use of the approval in relation to specifying that the approval may only be used where certain AOC holder key personnel have approved the use of the approval
- whether the operator will only use the approval when the forecast weather minima is at or above certain criteria
- how the operator ensures an appropriate level of flight crew member competency in relation to the use of the approval

  Notes:

  1. Multiple provisions of the civil aviation legislation, such as regulations 61.385, paragraphs 119.170(2)(c) & (d) and subregulation 121.485(1), effectively necessitate that the flight crew members must have demonstrated competency in conducting an approach and landing without approach slope guidance, under the supervision of an appropriately specified person and within a time period specified in the training and checking system, for the purpose.
  2. The operator might consider whether competency needs to be demonstrated at night and/or in the roles of pilot flying (PF) and pilot monitoring (PM), depending on the time periods in which the approval is planned to be used.
- whether the flight crew members will be required to review the terrain and obstacles in the vicinity of the aerodrome and applicable runway.

Additional matters that operators are recommended to consider in relation to the operations conducted under this approval include:

- Necessity for use of the approval
  - There may be circumstances or conditions in addition to the legislative requirements that an operator may choose to specify in their exposition that

constrain the use of the approval. This applies particularly only using the approval when essential and specifying the criteria that constitute essential.

- Other matters
  - The operator may choose to specify a hierarchy of approach techniques to be used in the circumstances where the approval is permitted to used.
  - This may extend to specifying that the flight crew should conduct straight-in 2D IAPs using CDFA techniques, followed by the use of runway aligned straight-in visual approaches with advisory VNAV path, etc.

Displaced threshold matters

Where a runway has a temporary displaced threshold, the extent of the displacement will influence whether the approved visual approach slope indicator system for the runway or the 3D IAP for the runway are permitted to be used.

In the circumstances where those systems are available (operating), but do not coincide with an aimpoint that is within the runway touchdown zone of the displaced threshold runway, those systems cannot be taken to satisfy paragraph 121.205(4)(a), or the relevant aspects of paragraph 121.205(4)(c). Additionally, a published 3D IAP that is modified by the flight crew to adjust to a displaced threshold is no longer a 3D IAP and should not be taken to satisfy paragraph 121.205(4)(c).

AMC 121.210 Procedures to determine information about aerodromes

Reserved

GM 121.210 Procedures to determine information about aerodromes

Water aerodromes

The reference in paragraph 121.210(2)(a) to “surface types” is not intended to be interpreted as relating to the surface conditions of a water aerodrome. The condition of this surface impacts the suitability of a water aerodrome for take-off or landing and is therefore a safety issue for the operator and pilot in command to assess.

Contact person

Paragraph 121.210(2)(i) describes the requirement for an operator’s exposition to include details of a contact person capable of providing information about the condition of an aerodrome. Informed assessment of the condition of suitable aerodromes (departure, planned destination or alternates) by the operator and the pilot in command, is fundamental to the safe conduct of an operation.

Maintenance and currency of data regarding uncertified aerodromes

See GM 121.205 for information regarding the challenges of operating at uncertified aerodromes, and the expectations on operators regarding these operations.

AMC 121.215 Procedures for safety at aerodromes

Reserved

GM 121.215 Procedures for safety at aerodromes

An operator must ensure that all personnel whose duties include working in the vicinity of an aeroplane are appropriately trained to perform their duties safely. Further training must be provided for those personnel who are also responsible for the movement of persons not employed by the operator, i.e., passengers.[13]

The safety of passengers is paramount. It must be remembered that even regular travellers may be unfamiliar with the airport environment, the differences between various boarding gates, airports and the hazards associated with these differences, and they must be provided with clear and easy-to-follow directions. All passengers should be marshalled and supervised while airside. Many foreign visitors will not recognise local signs or markings unless they are clear and unambiguous. Operators should also consider the requirements of the Aviation Transport Security Regulations 2005.

To ensure airside passenger movements are properly controlled, procedures for the escort of passengers on the aerodrome apron should be included in an operator's exposition. The operator should also develop procedures to ensure aircraft are parked in a place that avoids exposing passengers to hazardous conditions.

Hazardous conditions that may need to be considered include:

- the distance to be covered by passengers and the amount of time on the apron
- other aircraft movements in close proximity
- ground service or fuelling vehicles
- excessive noise associated with operating engines or machinery
- spark hazards around fuelling operations (including fuelling of other aircraft)
- trip and fall hazards
- weather conditions, and
- line of sight for marshallers of all passenger movements where it is possible to deviate from the path to the aircraft.

Night operations at remote aerodromes without adequate apron lighting may also present hazards that should be considered.

For operators of aircraft permitted to refuel with passengers on board, the exposition should detail the method of supervision of the passengers while the aircraft is being refuelled.

Operations at larger airports are typically associated with numerous other aircraft. Jet blast, propeller wash, rotor wash, noise, fuelling of other aircraft, airside servicing equipment, and the implications of passengers moving to the aircraft require consideration.

Passengers transiting to or from an aircraft can be distracted by mobile phone or other PED use. This reduces situational awareness, increases unsafe behaviour, and puts the passengers at greater risk of accidents.

[13] Regulation 121.145

Operators should include procedures, facilities or safety devices for the guidance and protection of passengers using PEDs while transiting to and from the aircraft. In circumstances where the operator is not confident of the level of protection provided by procedures, facilities and safety devices, they should consider restricting the use of PEDs.

At uncertified aerodromes, the exposition procedures required by this regulation will need to be more robust due to the absence of the Part 139 certified aerodromes protective framework.

AMC 121.220 Taking off from and landing on narrow runways

Reserved

GM 121.220 Taking off from and landing on narrow runways

Chapter 6 of the Part 121 MOS prescribes the manner of working out the minimum width of a runway for an aeroplane.

The regulations place the responsibility on the operator and the PIC to confirm the suitability of an aerodrome for the conduct of air transport operations. The regulation and the MOS outline the criteria for when a runway is considered to be narrow.

Subsection 6.02(1) defines *outer main gear wheel span* (OMGWS) for the purpose of determining the aeroplane *code letter*. Many aeroplane flight manuals depict the span of main gear to the centre of the undercarriage leg. This distance is NOT the distance to be used to calculate the OMGWS. Appropriate allowance for the tire width and axel spread must be applied to determine the outside edge distance of the main gear wheels, to comply with this definition.

For example, a DHC-8 Q400 aeroplane flight manual and airport planning manuals both depict the main gear span to centre of the main undercarriage legs as 8.8 m. The tire offset and tire width also described in the airport planning manual and maintenance manual add 76 cm, resulting in an OMGWS for the aeroplane of 9.56 m, subsequently rendering the aeroplane as a *code letter* D, based on 6.02(3)(c), rather than *code letter* C for less than 9 m.

In considering a narrow runway aerodrome for use, it is appropriate to consider all applicable aerodrome facilities as part of the assessment. For example, in certain aircraft the flight manual may approve the aircraft to land on a 45 m wide runway as a narrow runway approval, however that same aircraft may have a 180º turning circle that exceeds 45 m. In this case it would be necessary to ensure that the aerodrome has suitable runway entry and exit points for the aeroplane operation. In considering aerodrome facilities it may be necessary to consider the following:

- runway turning area
- runway bearing strength
- runway shoulders
- objects on runway strips
- taxiways
- holding bays

- aprons
- jet blast
- taxiway markings
- apron markings
- movement area guidance signs
- apron floodlighting
- appropriate consideration of the aerodrome emergency plan, taking into consideration the higher capacity aeroplane
- appropriate rescue and firefighting facilities for the intended operation.

In constructing exposition requirements applicable to narrow runway training, operators should conduct an analysis of their route network and the characteristics of the applicable aerodromes.

Flight crew training requirements

Subregulation 121.220(4) of CASR requires an aeroplane operator's exposition to include the training required for flight crew to conduct a take-off from, or a landing on, a narrow runway. Flight crew must complete this training prior to conducting narrow runway operations.

Where possible, simulators should be used for the conduct of initial narrow runway training and this should also be included in the recurrent simulator training syllabus. Dependent on the operator training needs analysis and the simulator fidelity level, some operators will need to conduct training and checking in the aircraft before commencing operations into and out of destination aerodromes with narrow runways.

The extent of the training and checking will be dependent on the:

- type of operation involved
- characteristics of the aerodromes with narrow runways in the operator's route network
- operator's particular operational environment.

The narrow runway training and checking can be amalgamated within the normal cycle of training and checking. In constructing the narrow runway training and checking requirements, operators should consider the following for inclusion:

a. reference to the specific narrow runway limitations in the flight manual for the aircraft and the relevant narrow runway sections of the exposition
a. reference to the specific narrow runway limitations in the flight manual for the aircraft and the relevant narrow runway sections of the exposition
b. acknowledgement of the hazards associated with narrow runway operations (i.e., consideration of foreign object damage)
c. aeroplane system knowledge applicable for narrow runway operations, e.g., some turbo-prop aeroplanes have limitations on the use of reverse when one engine is inoperative, which has a significant impact on rejected take-off and OEI landing
d. actions to be taken following malfunctions
e. V_{MCG} general knowledge, including:
    i. effect of directional control

ii. effect of crosswind

f. V_{1MIN} general knowledge, including:
   i. effect on take-off speed schedules
   ii. effect on wet runway capability and performance (if operations from wet narrow runways are scheduled)
g. in accordance with the flight manual for the aircraft, the requirement for smooth symmetric take-off power application prior to, and throughout, the thrust setting portion of the take-off roll
h. engine failure on take-off:
   i. accurate line up with runway centreline without excessive use of runway length
   ii. awareness of accurate centre line tracking in reduced visibility, with reference to available guidance such as HUD (if fitted), runway centreline marking and/or lighting
   iii. control requirements at engine failure speeds approaching V_{MCG}
   iv. considerations at or below V_{1MIN}
   v. awareness of rapid response required in the case of engine failure during the take-off roll
   vi. awareness and increased vigilance of braking requirements and directional control required during rejected take-off, taking into consideration crosswind and runway surface conditions (i.e., presence of water, type of surface)
   vii. effects of different combinations of aeroplane weight and centre of gravity on aeroplane handling characteristics and performance
   viii. effects of crosswind and differential cornering friction during the application of retardation devices such as thrust reversers, propeller feathering and braking
   ix. continued take-off considerations, including directional control, taking into account crosswind and runway surface conditions
i. increased awareness of stabilised approach criteria
j. increased vigilance to accurately control final approach and landing flight path following the VASIS guidance (if available)
k. awareness of the possible requirement to conduct 180° turns on the runway depending on runway width and taxiway locations
l. tailwind considerations for narrow runway operations, effect on V1/VR ratio and directional control
m. limitations in conditions of adverse weather during:
   i. take-off
   ii. approach/landing
n. MEL applicability
o. human factor aspects associated with narrow runway operations (i.e., visual illusions that occur during approach and landings, particularly at night with the tendency for late landing flare which can result in hard landings).

Narrow runway simulator training

Simulator training should be conducted on a representative narrow runway.

A narrow runway simulator training syllabus should ideally include, as a minimum, the following:

- engine failure immediately prior to V_{EF} on a dry runway

- engine failure at or after V_1 on a wet runway with the maximum split between V_1 and V_R
- OEI landing.

The take-off exercises should be carried out with maximum available take-off power/thrust at the maximum narrow runway crosswind limit permitted by the flight manual for narrow runway operations. The take-off configuration must be as stated in the flight manual.

The OEI landing exercise is to be carried out at the maximum narrow runway landing crosswind limit.

If the operator permits circling approaches, then a landing from a circling approach should be carried out.

Note: The circling approach exercise is not for the purposes of an instrument proficiency check. The circling manoeuvre in this case is to demonstrate the pilot's ability to handle the aeroplane in maximum crosswind conditions onto a narrow runway.

As part of the normal scheduled simulator training and checking cycle the flight crew should carry out a check, including narrow runway operations as part of the check scenario.

Line training

Ideally flight crew should carry out a line training flight under supervision into a company destination with a narrow runway prior to unsupervised operations from and into aerodromes with narrow runways as PIC.

4.6 Division 121.D.6 – Fuel requirements

AMC 121.225 Fuel procedures

Reserved

GM 121.225 Fuel procedures

Reserved

AMC 121.230 Oil requirements

Reserved

GM 121.230 Oil requirements

This regulation requires the operator and PIC to ensure that sufficient oil is carried for the planned flight. In determining the quantity required, consideration should include items such as:

- length of the intended flight
- type of flight, including EDTO requirements if applicable
- historical oil consumption data for all aircraft equipment, including engines and APU

- the method of recording both the oil consumption and the last level checked (this would normally be recorded in the aircraft logbook).

AMC 121.235 Fuel requirements

Reserved

GM 121.235 Fuel requirements

There is an exemption in force in relation to regulation 121.235 and regulation 91.455 that effectively permits operators to use the Part 121 fuel rules instead of the Part 91 fuel rules during a private operation conducted by the operator. It is recommended that operators review section 17 of CASA EX83/21.

This regulation requires the operator and the PIC to comply with the fuel requirements in Chapter 7 of the Part 121 MOS.

Further guidance on operational fuel requirements can be found in AC 91-15 - Guidelines for aircraft fuel requirements.

Operators that were using an operational variation prior to the commencement of Part 121 on 2 December 2021, under the auspices of section 8 of *CASA 29/18 — Civil Aviation (Fuel Requirements) Instrument 2018*, and that intend to continue using the same operational variation after 2 December 2021, do not need to submit any additional documentation to CASA. The operator is taken to have already submitted the required documentation to CASA required under subsection 7.09(3) of the Part 121 MOS.

AMC 121.240 Fuelling safety procedures

Paragraph 121.240 (b) of CASR – procedures relating to the safety of passengers

It is an acceptable means of compliance for paragraph 121.240 (b) if the procedures in the operator's exposition relating to fuelling when passengers are embarking, disembarking, or on board an aircraft cover the matters described below.

When fuelling with passengers on board, ground servicing activities and work inside the aircraft, such as catering or cleaning, must be conducted in such a manner that they do not create a hazard and do not obstruct the aisles and exits such that an emergency evacuation can be conducted if required.

The deployment of integral aircraft stairs or the opening of emergency exits, as a prerequisite to fuelling, is not necessarily required.

Operational procedures must specify that at least the following precautions are taken:

- One qualified person must remain at a specified location during fuelling operations with passengers on board. This qualified person should be capable of handling emergency procedures concerning fire protection and firefighting, communications, and initiating and directing an evacuation.
- Two-way communication, using the aeroplane's inter-communication system or other suitable means, must be established and remain available between the ground crew

supervising the refuelling and the qualified personnel on board the aeroplane. The involved personnel must remain within easy reach of the communication system.

- Crew, personnel, and passengers must be advised that fuelling is taking place.
- Seat belt signs must be off.
- No smoking signs must be on, together with interior lighting to enable emergency exits to be identified.
- Passengers must be instructed to unfasten their seat belts and refrain from smoking.
- The minimum required number of cabin crew must be on board and be prepared for an immediate emergency evacuation.
- If the presence of fuel vapour is detected inside the aeroplane, or any other hazard arises during fuelling, fuelling must be stopped immediately.
- The ground area beneath the exits intended for emergency evacuation and slide deployment areas must be kept clear at doors where stairs are not in position for use.
- Provision is made for a safe and rapid evacuation.

GM 121.240 Fuelling safety procedures

Regulation 121.240 takes precedence over regulation 91.510 during a Part 121 operation.

There is an exemption in force in relation to regulation 121.240 and regulation 91.510 that effectively permits operators to comply with regulation 121.240 instead of regulation 91.510 during a private operation conducted by the operator. It is recommended that operators review section 18 of CASA EX83/21.

There is also a Part 11 direction in force in relation to this regulation. It is recommended that operators review section 26 of CASA EX83/21.

Fuelling means both refuelling and de-fuelling.

This regulation provides that an operator's exposition must include procedures to ensure that fuelling operations are safe. The procedures are specifically required to cover situations where passengers embark, disembark or remain onboard the aeroplane during fuelling, and where low-risk electronic devices are permitted to be used in the aeroplane cabin during fuelling.

The operator's procedures should require cabin crew members to conduct a briefing when the aircraft is being refuelled with passengers on board or embarking/disembarking (refer to AC 121-04 - Passenger safety information).

The operator's procedures should also outline any safety requirements for ground personnel working around an aircraft during fuelling. Consideration should be given to the inclusion of safe distances from fuelling equipment, including bonding cables and fuelling vent zones, and procedures for fuel spills. Furthermore, these procedures should detail what actions should be undertaken by ground personnel in an emergency situation, including an emergency evacuation of an aircraft.

4.7 Division 121.D.7 — Passenger transport and medical transport

AMC 121.245 Application of Division 121.D.7

Reserved

GM 121.245 Application of Division 121.D.7

The regulation specifies that Division 121.D.7 is applicable to:

- a passenger transport operation
- a medical transport operation.

In considering medical transport operations, the operator should be aware of a difference that exists between Part 121 and Part 135. Part 135 requires that operators qualify and confirm competency of applicable medical transport specialists. There are several differences in the nature of operations and crew compliment between the respective parts. Part 121 operations will always require that two FCM's are present, whereas Part 135 can in many cases operate with a single FCM. Accordingly, the need for the training and checking system to cater for medical transport specialists was identified for Part 135 but not Part 121 operations.

Where a Part 135 aircraft operator elects to conduct operations under Part 121 (in accordance with regulation 135.010) then operators will need to be aware that this will still require compliance with Division 135.P.3, as there is no corresponding Part 121 division.

AMC 121.250 Carriage of restricted persons

It is an acceptable means of compliance with this regulation, for the circumstance where an operator elects to never carry restricted persons during their Part 121 operations, if the operator's exposition includes the following statement:

Restricted persons are not to be carried on a flight that is a Part 121 operation.

GM 121.250 Carriage of restricted persons

The regulation requires that an operator must include in the exposition procedures applicable to the carriage of a restricted person on a flight. If restricted persons are contemplated to be carried by the operator, the procedures should explain how the PIC will be informed of the circumstance and describe all applicable cabin crew and ground staff procedures.

In developing exposition procedures, operators will also need to be cognisant of the requirements of Division 4.5 of the *Aviation Transport Security Regulations 2005*.

Additional information is available in AC 121-04 - Passenger safety information and AC 121-09 - Carriage of special categories of passenger.

AMC 121.255 Carry-on baggage

Reserved

GM 121.255 Carry-on baggage

There is an exemption in force in relation to regulations 121.585 and 121.265, and regulations 91.590 and 91.595, that effectively permits operators to comply with regulations 121.255 and 121.265 instead of regulations 91.590 and 91.595 during a private operation conducted by the operator. It is recommended that operators review section 20 of CASA EX83/21.

The regulation requires that an operator include in their exposition procedures applicable to the carriage of passenger and crew baggage in the aircraft cabin for a flight. Such procedures shall be in accordance with applicable regulations and as a minimum shall address the amount, size, and weight permissible per passenger. The exposition should also detail the training requirements for the organisation's personnel.

The procedures should ensure that only carry-on baggage that can be adequately and securely stowed is taken into the passenger cabin. Carry-on baggage shall only be placed into stowage locations determined suitable by the operator, such as:

- under a passenger seat, where the stowage compartment has a means of preventing solid articles from shifting forwards
- in an overhead locker in accordance with the design weight limitation of the locker
- in any other locker which has been designed to contain solid articles in flight.

When detailing the procedures for the safe stowage of carry-on baggage, the operator should consider the following:

- the requirements of Part 92 (carriage of dangerous goods) must be met
- the identification and management of excess carry-on baggage
- checks should be made to ensure adherence to the requirements, including regulation 121.260.

Operators should consider the risks associated with excessive amounts of carry-on baggage and establish procedures for how this should be managed by the operator's personnel.

The weight of carry-on baggage must be accounted for in the weight and balance of an aircraft, as required under regulation 121.440. This should include procedures for the recording of baggage taken from a passenger and placed into the aircraft hold, oversize items (as outlined below) and the recording of any excess baggage outside that already accounted for within the weight and balance of the aircraft, such as increased allowances that may be purchased by passengers or permitted by the class of travel.

Oversized or odd-sized items

When incorporating the procedures for the carriage of oversized or odd-sized items, the operator should consider the safety of the flight and passengers in general and whether the carriage has an impact on safety in the cabin.

It is recommended that all items of cabin baggage be stowed in an overhead locker or other closed compartment. Where this is not possible due to the item's size, value or fragility, an operator may choose to transport special items of cabin baggage secured in passenger seats.

Information on the operator's requirements for the carriage of these items should be provided to passengers at the time of booking.

The operator must have a process for ensuring that the weight of carry-on baggage is captured within the weight and balance system for the aircraft. For oversized or odd-sized items, this should include recording the actual weight and loading position for use in the final weight and balance calculations.

The operator should ensure appropriate training is provided to all relevant personnel including airport staff (baggage check in staff and gate staff) and crew members in the handling of oversized or odd-sized items.

Refer to AC 121-08 – Carry-on baggage for further guidance.

AMC 121.260 Aisles to remain unobstructed

Reserved

GM 121.260 Aisles to remain unobstructed

The applicability of this regulation is determined when considering regulation 121.630. If regulation 121.630 does not require the carriage of cabin crew, then regulation 121.260 does not apply.

The regulation requires that aisles of an aeroplane be free from obstruction, except for the use of cabin service equipment during the provision of cabin service to passengers.

GM 121.265 Stowage of passenger service equipment etc.

There is an exemption in force in relation to regulations 121.585 and 121.265, and regulations 91.590 and 91.595, that effectively permits operators to comply with regulations 121.255 and 121.265 instead of regulations 91.590 and 91.595 during a private operation conducted by the operator. It is recommended that operators review section 20 of CASA EX83/21.

This regulation requires that any passenger service equipment which would interfere with the evacuation of an aeroplane shall be stowed during taxi, take-off, and landing.

Items typically in this category include:

- entertainment screens
- food and beverage carts
- service trays (dependent on size).

In an emergency situation requiring evacuation, items remaining from food or drink service of any kind can be hazardous.

In some cases, operators may wish to provide limited beverage and food service to passengers when the aircraft is on the ground. In such cases, an operator should have specific procedures for cabin crew to follow, including coordination and communication between the flight deck and the passenger cabin(s), to ensure these requirements are met before aircraft movement on the aerodrome, and that any item used will not interfere with the evacuation of an aeroplane. Any food item or container that the passenger carries on board the aircraft is considered to be carry-on baggage and must be stowed in accordance with the requirements of carry-on baggage.

If there is any uncertainty regarding the stowage of a particular item, and it must be stowed for take-off and landing, then that item must also be stowed for movement on the aerodrome.

AMC 121.270 Passengers in emergency exit row seats

It is an acceptable means of compliance with this regulation if the operator establishes procedures as outlined in this section.

The procedures for assigning passengers into emergency exit row seats must be such that:

- in the event that an emergency evacuation is required, passengers are seated where they are able to assist and not hinder evacuation of the aircraft
- a passenger occupies an exit row seat on each side (not staffed by a cabin crew member) during taxiing, take-off and landing unless this would be impracticable due to a low number of passengers or it might negatively impact the mass and balance limitations
- a crew member confirms that the passengers who are allocated emergency exit row seats appear to be reasonably fit, strong, and are able and willing to assist with the rapid evacuation of the aircraft in an emergency.
- passengers who, because of their condition, might hinder other passengers during an evacuation or might impede the crew in carrying out their duties, are not allocated emergency exit row seats
- if procedures cannot be reasonably implemented at the time of passenger check-in, there are alternative procedures established to ensure that appropriate seat allocations are made on board.

The following categories of passengers are among those who are not considered suitable persons to be assigned, or occupy, an emergency exit row seat:

- passengers suffering from obvious physical or mental disability to the extent that they would have difficulty in moving quickly if asked to do so
- passengers who are either substantially blind or substantially deaf to the extent that they might not readily assimilate printed or verbal instructions given
- passengers who because of age or sickness are so frail that they have difficulty in moving quickly
- passengers who are so obese that they would have difficulty in moving quickly or reaching and passing through the adjacent emergency exit
- children (whether accompanied or not) and infants
- restricted persons

- passengers with animals.

GM 121.270 Passengers in emergency exit row seats

There is a Part 11 direction in force in relation to this regulation that applies to aeroplanes with a maximum certificated passenger seating capacity of 19 or less. It is recommended that operators review section 27 of CASA EX83/21.

Subsection 98 (6B) of the Civil Aviation Act 1988 states that the regulations may contain provisions that are inconsistent with the *Disability Discrimination Act 1992* if that inconsistency is necessary for the safety of air navigation. The restriction of emergency exit row seating to suitable persons is necessary for the safety of air navigation.

An *emergency exit row seat* means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.

When allocating emergency exit row seats, the operator should consider utilising, as far as practicable, cabin crew members that are additional to the minimum required cabin crew complement, or positioning crew members if available on board.

The operator's procedures for the allocation of emergency exit row seats should include criteria for determining which passengers qualify as suitable persons.

Consideration should be given to the provision of a separate card at the exit row seats that contains information on the suitability criteria for passengers to be eligible to occupy an exit seat. This would allow passengers to self-identify if they cannot meet the selection criteria and allow reseating to occur.

For further guidance, refer to AC 121-10 - Passengers in emergency exit row seats.

AMC 121.275 Carriage of passengers with reduced mobility

Subregulation 121.275 (1)

It is an acceptable means of compliance with subregulation 121.275(1) if the operator's exposition includes procedures that take into account the following:

- General:
  - the aircraft type and cabin configuration
  - the total number of passengers carried on board
  - the number and categories of passengers with reduced mobility (PRM) which should not exceed the number of passengers capable of assisting them in case of an emergency
  - any other factor(s) or circumstances that may impact on the application of emergency procedures by the operating crew members
  - how and when the PIC and required cabin crew members are made aware that a PRM is being carried on the flight.
- Seat allocation:
  - if the PRM travels with an accompanying passenger, the accompanying passenger should be seated next to the PRM

  - if the PRM is unable to negotiate stairs within the cabin unaided, they should not be seated on the upper deck of a multi-deck aircraft if the exits are not certified for emergency evacuation on both land and water
  - a disability and/or restraint aid that is required to be secured around the back of the seat should not be used if there is a person seated behind, unless the seating configuration is approved for the use of such devices. This is to avoid the changed dynamic seat reactions with the disability and/or restraint aid, which may lead to head injury of the passenger seated behind. If the seat design or installation would prevent head contact of the person seated behind, then no further consideration is necessary.
- Provision of safety information:
  - when and how safety information is to be provided to PRM.

GM 121.275 Carriage of passengers with reduced mobility

Passengers with reduced mobility includes any person who is likely to require special conditions and assistance to find and use an exit on board an aircraft in an emergency because the person's mobility is impaired, or the person has another impairment.

The extent to which passengers may require special assistance will vary considerably according to the individual's needs, as well as the aircraft type and configuration.

Where practicable, consideration should be given to pre-boarding passengers with reduced mobility and their assistant if they are accompanied by one. Pre-boarding will allow the passenger with reduced mobility to settle into their seat, stow carry-on baggage and receive a safety briefing. Whilst this practice is generally beneficial to people who need extra assistance, it may not be appropriate for all passengers, especially if boarding is not immediate and passengers are left waiting in unfamiliar surroundings such as on an aerobridge. These passengers should also be offered the opportunity to disembark separately, i.e., after all other passengers.

During an emergency evacuation, the cabin crew is responsible for the overall evacuation of all passengers including those with reduced mobility that are not able to reach an emergency exit without assistance in a reasonable time. Passengers requiring assistance to reach an emergency exit and who are escorted by an assistant should be evacuated by their assistant. Depending on the situation, cabin crew may assist.

A passenger capable of assisting in the case of an emergency means a passenger who is not a PRM and who has no other role or private responsibility that would prevent them from assisting the PRM. For example, an adult travelling alone has no other role or private responsibility, unlike a family travelling together with younger children.

In an emergency situation, if time permits, passengers identified by the cabin crew as capable of assisting a PRM should be briefed on the assistance they can provide.

Seat allocation

In addition to the requirement not to seat a PRM in an emergency exit row, these passengers need to be seated in a manner that will not hinder or obstruct access to emergency exits or

equipment generally for all other passengers and crew. This requirement becomes particularly relevant in narrow-body aircraft.

Any decision by an operator to seat a passenger outboard (window or middle seat) of a person with a sickness, injury or disability seated inboard (aisle adjacent) needs to take into consideration the abilities and/or limitations of all passengers in that row. It is important to ensure that passengers seated in the same row as a PRM do not have their ability to exit impeded by the PRM.

The operator should review and consider their seating policy for passengers with reduced mobility to ensure that it complies with the requirements and, where applicable, ensure the policy is communicated and suitable training provided to the appropriate personnel.

For further guidance on the carriage of PRM, refer to AC 121-09 - Carriage of special categories of passenger.

Provision of safety information

While a general safety briefing is given to all passengers prior to departure during which crew point out the location of the emergency exits and provide information on the brace position and the use of life jackets and oxygen masks, it may be appropriate to provide an individual briefing to the PRM and their assistant (dependent on the needs of the passenger).

When determining the content of an individual briefing to be provided to a PRM, the operator should consider informing the PRM that cabin crew can only provide assistance to the PRM after the cabin has been evacuated.

In considering the requirements of this regulation, reference should be made to regulation 121.285 and section 8.03 of the Part 121 MOS.

For additional information, refer to AC 121-04 - Passenger safety information.

GM 121.280 Safety briefing cards

Refer to Division 1 of Chapter 8 of the Part 121 MOS for the information that must be included in a safety briefing card.

Safety briefing cards must be specific to the type and model of aircraft and cannot include information specific to other types or models of aircraft. However, if multiple types/models of aircraft have identical information, then the card may cover all of these aircraft.

Operators must ensure that a safety briefing card is available to each passenger.

The safety briefing card provides information on exit locations and the use and location of emergency equipment. Information is presented in a visual and pictorial format which assists passengers in responding to emergency situations as quickly and effectively as possible.

The safety briefing card is designed to supplement the passenger safety briefing and can also be used to individually brief passengers during normal and non-normal procedures.

For flights of a longer duration, it is recommended that passengers be reminded to review the safety briefing card before landing.

For further guidance, refer to AC 121-04 - Passenger safety information.

GM 121.285 Safety briefings, instructions and demonstrations

There is an exemption in force in relation to regulation 121.285 and regulation 91.565 that effectively permits operators to comply with regulation 121.285 instead of regulation 91.565 during a private operation conducted by the operator. It is recommended that operators review section 19 of CASA EX83/21.

The requirements for safety briefings, instructions or demonstrations given to a passenger for a flight of an aeroplane are contained in Division 2 of Chapter 8 of the Part 121 MOS.

The intention of this regulation is to ensure that all safety briefings and demonstrations are provided and that they are clear and unambiguous to the passengers.

This regulation does not preclude an operator from making public announcements of a commercial nature once the safety briefing is completed.

For further guidance, refer to AC 121-04 - Passenger safety information.

GM 121.290 Additional safety briefing for passengers in emergency exit rows

The emergency exits referred to in this regulation are those which passengers would be required to operate in an emergency, i.e., unstaffed or self-help exits. It is not intended to include exits where cabin crew are located, where the crew hold primary responsibility for opening the exit.

Unstaffed exits may be floor-level or window exits, such as those located at the over-wing. As passengers are expected to operate unstaffed exits in the event of an evacuation, specific unstaffed exit row briefings should be included as part of the operator's procedures to provide the necessary information to passengers on the operation of exits and the responsibilities of passengers seated in an emergency exit row. These briefings lead to increased passenger awareness, improved performance in an evacuation, and a higher level of safety.

Prior to the commencement of each flight, cabin crew should confirm that passengers in unstaffed emergency exit rows meet exit row seating requirements and are briefed on the following items:

- the importance of the role of passengers seated in an exit row in the event of an emergency
- the signal/command that would instruct the passengers to open exits
- how to open the exit, including specific aspects of the operation such as:
  - the need to check for hazards (such as fire, high water, or obstruction) before opening
  - what to do with the exit hatch if removable
  - passenger movement that leads to an exit, routes of escape after leaving the aircraft
- confirmation of understanding instructions
- confirmation of agreement to assist the crew members with the evacuation of the aeroplane in an emergency.

Consideration should be given to provision of a separate card at the exit row seats that

identifies the emergency commands to initiate an evacuation and supplemented pictograms demonstrating the operation of the exit corresponding with each side of the aircraft.

Unstaffed exit instructions should illustrate the correct method of exiting the aircraft as well as the evacuation route for any passengers, for example exiting via the wing.

For further guidance, refer to AC 121-04 - Passenger safety information.

GM 121.295 Safety briefing in the event of an emergency

Regulation 121.285 requires the delivery of certain safety briefings, instructions or demonstrations to passengers. Regulation 121.295 requires an operator's exposition to include procedures for briefing passengers on what to do if an emergency occurs during a flight of an aeroplane.

In developing their procedures, operators should focus on ensuring that specific and accurate safety information and instructions are able to be conveyed to passengers in a variety of ways to facilitate understanding. These methods include verbal briefings and visual safety information such as safety briefing cards, audio visual presentations, signs, placards, emergency lighting systems and physical demonstrations provided by crew members.

Emergency situations might include the following:

- fire, smoke, or fumes
- cabin pressurisation problems and decompression
- anticipated and unanticipated emergency landing or ditching
- evacuation on land or water
- crew member incapacitation.

Standard information and instructions specific to each of these situations should be included in the exposition, e.g., cabin crew checklists for preparing the cabin for an emergency landing.

In some cases, whilst this regulation does not specifically require the exposition to include procedures relating to abnormal situations (as opposed to normal or emergency situations), the inclusion of procedures related to abnormal situations would still be reasonably required under the outcome-based provisions of regulation 119.205. In particular, abnormal situations that may escalate to emergency situations, such as the need to conduct a cabin preparation in case of a future emergency, should require the operator to have procedures for the appropriate briefing of the passengers.

For further guidance, refer to AC 121-04 - Passenger safety information.

4.8 Division 121.D.8 — Instruments, indicators, equipment and systems

GM 121.300 Airborne weather radar equipment

While most modern aircraft weather radar manuals are quite detailed in the use of the equipment, this is not always the case and operators should ensure that the exposition contains specific procedures for their flight crew to follow when manipulating the weather radar.

In formulating the exposition material, the operator should consider applicable state rules for both domestic and international operations (i.e., the relevant aeronautical information product).

The regulation specifies that the exposition must include procedures applicable to the conduct of flight without airborne weather radar. These procedures should as a minimum consider:

- dispatch of an aircraft with a failed radar system
- in-flight failure scenario of a weather radar.

The weather radar failure scenario should consider:

- the forecast weather for the flight, including the probability of thunderstorms or cloud formations associated with severe weather and turbulence conditions
- the light conditions for the flight, i.e., while it is possible for a flight in daylight to be able to see cloud formations and apply a 'see and avoid' technique, it would be difficult to legitimately apply a similar technique to many night transit situations
- relevant MEL guidance from the aircraft manufacturer.

Guidance should also be provided on the policy of the operator on severe weather avoidance and any other operator policies applicable to weather avoidance for flight crew.

GM 121.305 Head-up displays, enhanced vision systems and synthetic vision systems

Irrespective of whether an operator has gained operational credit for the use of head-up displays (HUDs), enhanced vision systems (EVS) or synthetic vision systems (SVS), the regulation requires an operator to have procedures in place for this equipment (if fitted) to describe its use.

These procedures will mitigate the risk of untrained flight crew using these systems, especially during component failure scenarios.

GM 121.310 Crew protective breathing equipment

In documenting procedures for protective breathing equipment (PBE), operators should consider including the following:

- general description
- uses
- location(s) on the aircraft

- pre-flight serviceability checks
- removal from stowage
- how to operate
- conditions for operation
- operational limitations
- operation under adverse conditions
- precautions in use
- actions after use.

GM 121.315 Hand-held fire extinguishers

In documenting procedures for hand-held fire extinguishers, operators should consider including the following:

- general description
- the extinguishing agent in each extinguisher and what type of fire it can be used on
- location(s) on the aircraft
- pre-flight serviceability checks
- removal from stowage
- how to operate
- conditions for operation
- operational limitations
- operation under adverse conditions
- precautions in use
- actions after use.

GM 121.320 Procedures relating to first-aid kits

Mandatory requirements relating to first-aid kit equipment are contained in section 11.53 of the Part 121 MOS. The requirements include the number of required first-aid kits in different circumstances, and broad outcome-based requirements that must be met by all first-aid kits.

Regulation 121.320 has some duplication with the requirements in section 11.53 but has unique requirements for the operator's exposition to include procedures for:

- ensuring that the first-aid kits:
  - contain sufficient supplies for the number of persons to be carried on a flight of the aeroplane
  - are readily recognisable as first-aid kits
  - are readily accessible by each crew member for a flight when the aeroplane is on the ground or water and not in operation
- inspecting first-aid kits
- replacing items within the kits.

Regulation 121.330 of CASR also requires the exposition to include a list of the minimum contents of each first aid kit for an aeroplane. As the content of the first-aid kits are not defined in the regulations, the minimum contents of a first-aid kit required for a flight is at the

discretion of the operator.

The exposition procedures for this regulation are recommended to address the following:

- For inspecting the kits:
  - frequency of the inspection
  - general description of the contents
  - location(s) on board
  - pre-flight checks
  - removal from stowage
  - use of the MEL
- For replacing items in the kits:
  - the kit must be kept up-to-date, including:
    - replenishment at regular intervals in accordance with instructions on their labels
    - replenishment as circumstances warrant
    - whether the aeroplane carries additional contents on board to replenish the first-aid kits
  - removal from stowage
  - whether the aeroplane carries additional contents on board to replenish the emergency medical kit and if so, the replenishment of the kit after in-flight use
  - use of the MEL.

More generically under the exposition content requirement of 119.205(1)(h) of CASR, operator procedures for the use of first-aid kits are recommended to consider the following:

- precautions for the use of the contents
- use of the contents
- conditions for the use of the contents
- actions after use of the contents
- detailing different minimum contents of a first-aid kit for distinctive operating circumstances i.e. departure from locations where kits can be replenished, and departure from locations where no facility exists to do this.

Note: An MEL cannot allow for the equipment to be inoperative or not present unless permitted by the legislation (i.e. section 11.53 of the 121 MOS in this case), and therefore cannot be used to manage a situation where the entire contents of a first-aid kit have been used and no relief is provided by the MOS.

Guidance for first-aid kit content can be found in the GM 121.460 entry in this document.

GM 121.325 Procedures relating to universal precaution kits

Mandatory requirements relating to universal precaution kit equipment are contained in section 11.55 of the Part 121 MOS. The requirements relate to the number of required universal precaution kits in different circumstances.

Regulation 121.325 requires the operator's exposition to include:

- procedures for:
  - inspecting universal precaution kits

  - replacing items within the kits
- a list of the minimum contents of each universal precaution kit for an aeroplane.

Note: As the content of the universal precaution kits are not defined in the regulations, the minimum contents required for a flight is at the discretion of the operator.

The exposition procedures for this regulation are recommended to address the following:

- For inspecting the kits:
  - frequency of the inspection
  - general description of the contents
  - location(s) on board
  - pre-flight checks
  - removal from stowage
  - use of the MEL.
- For replacing items in the kits:
  - the kit must be kept up-to-date, including:
    - replenishment at regular intervals in accordance with instructions on their labels
    - replenishment as circumstances warrant
    - whether the aeroplane carries additional contents on board to replenish the universal precaution kit.
  - removal from stowage
  - whether the aeroplane carries additional contents on board to replenish the emergency medical kit and if so, the replenishment of the kit after in-flight use
  - use of the MEL.

More generically under the exposition content requirement of CASR 119.205(2)(h), operator procedures for the use of universal precaution kits are recommended to consider the following:

- precautions for the use of the contents
- use of the contents
- conditions for the use of the contents
- actions after use of the contents
- detailing different minimum contents of universal precaution kits for distinctive operating circumstances i.e. departure from locations where kits can be replenished, and departure from locations where no facility exists to do this.

Note: An MEL cannot allow for the equipment to be inoperative or not present unless permitted by the legislation (i.e. section 11.55 of the 121 MOS in this case), and therefore cannot be used to manage a situation where the entire contents of a universal precaution kit has been used and no relief is provided by the MOS.

Guidance for universal precaution kit content can be found in the GM 121.460 entry in this document.

GM 121.330 Procedures relating to emergency medical kits

The circumstance when an emergency medical kit must be carried on an aeroplane is specified in section 11.54 of the Part 121 MOS.

Regulation 121.330 requires the operator's exposition to include:

- procedures for:
  - inspecting emergency medical kits
  - replacing items within the kits
  - administering and supplying the kits
  - ensuring that prescription medicines are administered only under the authority of a medical practitioner
- a list of the minimum contents of the emergency medical kit for an aeroplane.

Notes:

1. As the content of the emergency medical kit is not defined in the regulations, the minimum contents required for a flight is at the discretion of the operator. See GM 121.460 for recommended contents.
2. An MEL cannot allow for the equipment to be inoperative or not present unless permitted by the legislation (i.e. section 11.54 of the 121 MOS in this case), and therefore cannot be used to manage a situation where the entire contents of an emergency medical kit have been used and no relief is provided by the MOS.

The exposition procedures for this regulation are recommended to address the following:

- For inspecting the kits:
  - frequency of the inspection
  - general description of the contents
  - location(s) on board
  - pre-flight checks
  - removal from stowage
  - use of the MEL.
- For replacing items in the kits:
  - the kit must be kept up-to-date, including:
    - replenishment at regular intervals in accordance with instructions on their labels
    - replenishment as circumstances warrant
    - whether the aeroplane carries additional contents on board to replenish the emergency medical kit.
  - removal from, and replacement back in, the stowage location
  - use of the MEL.
- For administering and supplying prescription medicines in the kits, and ensuring that prescription medicines are administered only under the authority of a medical practitioner:
  - general description of the contents
  - precautions for the use of the contents
  - use of the contents
  - conditions for the use of the contents

- actions after use of the contents
- whether the location of the kit will contribute to preventing unauthorised access to the kit (locations commonly used include locked compartments in overhead bins or in unlocked pouches out of the way of passengers such as attached to the bulkhead behind the last row of seats in a compartment).

If the list of minimum contents of the emergency medical kit will vary for different operating circumstances, i.e. departure from locations where the kit cannot be replenished, then the list of the minimum contents will need to identify the minimum contents for the different circumstances.

Other matters operators might optionally consider (these are not required by the civil aviation legislation but are sourced from other globally available guidance) include whether the kit should be:

- located in a secure storage location to minimise the possibility of damage or loss (locations commonly used include locked compartments in overhead bins or in unlocked pouches out of the way of passengers such as attached to the bulkhead behind the last row of seats in a compartment)
- dust and moisture proof to prolong its service life.

Guidance for emergency medical kit content can be found in the GM 121.460 entry in this document.

GM 121.335 Life-saving equipment for life rafts

The following list of life-saving equipment that may be carried for each life raft is provided as a guide only, and operators should select items based on their own operational needs (scope of operation, flight duration, number and demographics of passengers, etc.):

- means of maintaining buoyancy
- a sea anchor
- lifelines and means of attaching one life raft to another
- paddles for life rafts with a capacity of six or less
- means of protecting the occupants from the elements
- a water-resistant torch
- signalling equipment to make the distress signals described in Appendix 1 to ICAO Annex 2, Rules of the Air
- 100 g of glucose tablets for each four, or fraction of four, persons that the life raft is designed to carry
- at least two litres of drinkable water provided in durable containers, or means of making sea water drinkable, or a combination of both
- first-aid equipment.

As far as practicable, items listed above should be contained in a pack.

GM 121.340 Survival equipment procedures

The regulation applies to flight in an area prescribed as a remote area in Division 26.15 of the Part 91 MOS or when a life raft is to be carried. The regulation requires the exposition to include procedures for determining the survival equipment and pyrotechnic signalling devices required for the flight.

The reason that the exposition needs to contain these procedures is that the requirements related to survival equipment within the Part 121 MOS are not specific but are instead outcome based. This provides flexibility for the operator to respond to changing environments and circumstances, however it does also place the onus on the operator to assess the environments, locations and circumstances in which they are operating and decide what survival equipment is appropriate to be carried. The exposition procedures should outline the factors and risks that the operator has taken into account when determining the specific items of survival equipment required to be carried on different kinds of flights, or to different locations, or any other permutation assessed as relevant to the individual operator.

The relevant equipment information is available in Chapter 11 of the Part 121 MOS.

Appendix 1 to ICAO Annex 2, Rules of the Air also contains some valuable information regarding pyrotechnic signalling devices. Certain signals have an internationally standardised meaning, e.g. the following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

- rockets or shells throwing red lights, fired one at a time at short intervals
- a parachute flare showing a red light.

4.9 Division 121.D.9 – Miscellaneous

GM 121.345 Procedures relating to ice

The basic requirements for flight in icing conditions and the responsibilities of the PIC are set out in regulations 91.705 and 91.710. These remain applicable to all Part 121 operations.

This regulation requires that an operator describe in the exposition the procedures to be followed for:

- inspection of the aircraft prior to flight if frost or icing conditions exist
- removal and prevention of ice and frost prior to flight
- the use of aircraft equipment during flight in icing conditions.

If applicable, an operator's exposition must include policy, procedures and training relating to airframe icing that are based on, and consistent with, the relevant aeroplane flight manual. Under no circumstance should the policy, procedures and training in the exposition be less limiting than the limitations and guidance in the flight manual.

In Australia, ground icing is not often experienced, however it is not uncommon for ice (in the form of hoar frost) to affect aeroplanes parked overnight in temperatures below zero degrees.

For operators who do not intend to conduct operations from aerodromes that are regularly exposed to ground icing, the exposition should include a section that gives clear instructions for the operating crew to follow when ground icing conditions do occur. These instructions should as a minimum include:

- a statement that precludes aircraft operations when ground icing is present, e.g. 'Operations must not be conducted during icing conditions that could cause contamination to the external surfaces of an aircraft while the aircraft is on the ground.'
- advice on conditions that will allow operations to commence
- precautions that must be taken prior to operations commencing.

AOC holders with operations in colder climates will need to evaluate and document appropriate company processes applicable to the removal of ice and snow. The successful treatment of ice and snow deposits on aeroplanes on the ground is an absolute necessity to the safety of winter operations.

The PIC has the responsibility[14] for ensuring compliance with the 'Clean Aircraft' concept. The ground de-icing crew are responsible to carry out their duties[15] as detailed in the exposition to provide an aeroplane that complies with the 'Clean Aircraft' concept.

For additional information refer to AC 121-06 - Aircraft ground de-icing and anti-icing operations[16].

GM 121.350 Procedures relating to portable electronic devices

Pilots in command and operators are advised that there is a non-legislative instrument (Instrument Number CASA 152/12) in force that determines certain personal electronic devices to not be aircraft components for CAR 1988.

This regulation requires the operator to have procedures in their exposition for the use of portable electronic devices for both passengers and crew.

Portable electronic device (PED)

The definition of a PED is any lightweight, electrically-powered equipment. These devices are typically consumer electronic devices capable of communication, data processing and/or utility. Examples range from hand-held, lightweight electronic devices such as laptops, tablets, e-readers, and smart phones to small devices such as electronic games.

Note: The definition of PED encompasses both transmitting and non-transmitting PEDs.

PED vs EFB

[14] regulation 91.705
[15] regulation 119.220
[16] At the time of publication of this document, this AC is under development. Once published, it will be available from the CASA website.

All portable EFBs are considered to be PEDs, but the use of the term EFB recognises that the operator has specifically elected to use a PED for a crew-provisioning purpose. Electing to use an EFB for operations still requires consideration of Division 91.C.8, which addresses the carriage and use of PEDs in aircraft.

Additional information on the use of EFBs is available in AC 91-07 - Cabin electronic flight bags and AC 91-17 - Electronic flight bags.

There is a Part 11 direction in force in relation to the use of Electronic Flight Bags (EFB) by Australian air transport operators. It is recommended that operators review section 5 of CASA EX82/21. Operators should note that this direction requires an operator to obtain CASA's approval in writing before using an EFB for the first time. The approval mentioned in the direction is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website. Operators who held an AOC prior to 2 December 2021, and were already compliant with Appendix 9 of CAO 82.0 as in force on 1 December 2021, do not need to obtain this approval since they are taken to already be using EFBs.

PED interference event

A PED interference event can be defined as unusual behaviour of on-board electronic systems and equipment that may be suspected as originating from PED use. This may also be referred to as an electromagnetic interference (EMI) event.

Transmitting portable electronic device (TPED)

A TPED can be defined as a PED that contains an intentional transmitter, where some or all of the device's radio frequency transmitting functions are turned on. Intentional transmitters may include devices enabled with cellular technology, wireless radio frequency network devices, and other wireless-enabled devices such as mobile telephones, tablets, laptop computers, and radio transmitters and receivers. Many TPEDs allow the user to disable the transmitting function (e.g. flight mode, flight safe mode). When disabled, the TPED becomes a non-transmitting device.

Policy

Operators must determine a policy in relation to the use of PEDs (in conjunction with legislative requirements) and develop operational procedures after the conduct of an appropriate risk assessment. The risk assessment should be undertaken in the context of the individual operator's particular type of operations, and may consider a number of areas including:

- types of PEDs that can be used, and at which stages of flight
- limitations on use, including charging of devices during critical stages of flight
- procedures during normal, abnormal and emergency situations, e.g. refuelling, turbulence, PED smoke or fire events
- EMI events
- securing and stowage
- passenger information and education

- passenger non-compliance with PED policy
- staff use of personal and company-issued PEDs.

Operators must ensure the following:

- Large PEDs (such as full-size laptop computers) must be stowed in an approved carry-on stowage location and not present an undue hazard in the event of severe turbulence, crash forces or emergency egress. Large PEDs are those that the operator has determined have a mass more than 1 kg or are of a size that would impede egress.
- Small PEDs must be stowed or secured at all times when seat belts are required to be worn. Passengers who do not wish to stow their PEDs should be encouraged to secure them on their person, such as in a garment pocket. Passengers may also secure small PEDs by placing them in seat pockets or holding them in their hands. A PED should not be left unsecured on an empty seat. Additionally, on larger aircraft, if a passenger cannot locate their PED, they should not move their seat and be encouraged to contact a crew member for assistance. This is to avoid the possibility of the device being crushed and creating a fire hazard.

Seat back pockets are generally designed to hold a maximum of 1.5 kg. The passenger safety information card, magazines, other literature and air sickness bag account for approximately 0.5 kg. When an operator conducts a safety risk assessment to determine an acceptable weight limit for the seat pocket, these items should be taken into account. As a general rule, small PEDs and any other personal items placed in the seat back pocket should not exceed a total mass of 1 kg and should not protrude to the point of impeding egress.

PED cords or accessories must not impede emergency egress.

Documentation

Information relating to PEDs should be included in the applicable sections of the exposition including the following:

- operations manuals
- training material
- internal checklists
- passenger safety information cards
- passenger briefing materials.

Training programs should include:

- management of suspected or confirmed electromagnetic interference
- smoke or fire from a PED or a battery and other similar scenarios
- passenger use of PEDs during emergencies.

Airside considerations in relation to PEDs

Passengers transiting to or from an aircraft can experience cognitive distraction from mobile phone or other PED use. This reduces situational awareness, increases unsafe behaviour and puts the passenger at greater risk of accidents.

Hazardous conditions that may need to be considered include:

- other aircraft movements in close proximity and ground service or fuelling vehicles
- night operations at remote aerodromes without adequate airside lighting may also present hazards that should be considered.

It is recommended that operational procedures do not permit the use of PEDs during this time. If the aircraft is being refuelled, passengers must not be permitted to utilise their device(s) on the tarmac and a staff member that has been appropriately trained should be present to ensure compliance.

GM 121.355 Procedures relating to the carriage of animals

This regulation applies to all animals and is not limited to assistance animals.

Regulation 91.620 places the responsibility on the PIC or the operator for ensuring the safety of the flight when an animal is carried on an aircraft. It also allows the PIC or the operator discretion as to whether to carry an animal; however, for assistance animals, the *Disability Discrimination Act 1992* will apply if there is a refusal to carry an assistance animal for reasons other than aviation safety. Further material is available in the Explanatory Statement for Part 91 (F2018L01783) which provides some clarification on this matter.

Ultimately, responsibility for the safety of an aircraft, its occupants, and people and property on the ground lies with the operator and PIC of the aircraft. Where safety concerns exist, the PIC has the authority to remove a person, animal or thing from the aircraft (refer to regulation 91.105).

In general, carrying an animal is no different to carrying cargo. When giving permission, consideration should be given to:

- the type of animal
- how it is being carried, contained and/or restrained
- its reaction to noise and being out of its natural environment
- nuisance to other passengers
- distraction to flight crew
- how excrement or fluids will be contained.

This regulation requires that an operator documents procedures in the exposition applicable to the carriage of animals, including any limitations or requirements the operator expects personnel to observe. In considering this item, both the operator and PIC should also review the matters detailed in Division 91.D.7.

Animals carried by air generally fall into two categories:

- animals such as livestock, horses, domestic pets and snakes
- an assistance animal in the company of a person with a disability.

The regulations allow the operator and PIC to decide whether an animal may be carried without risking the safety of an aircraft, passengers on board and cargo on board. Before permitting an animal on board a flight, the operator and PIC of the aircraft should consider the following:

- **Containerisation**. Where possible, animals should be carried in individual containers, secured in accordance with regulations pertaining to the carriage of cargo. Containers provide a form of restraint and a means to ensure the containment of excreta.
- **Escape**. The size and nature of some animals means that their escape from a container or handlers could place the safety of the aircraft in jeopardy. Consideration should be given to methods of regaining control of the animal or, if ultimately necessary, of destroying the animal in the most humane way possible.

Note: For the carriage of firearms on board an aircraft, see regulation 91.130.

- **Co-location with sensitive cargo**. Like humans, animals are sensitive to toxic and infectious substances. Furthermore, they could pose a threat to the cleanliness of food intended for human consumption.
- **Adverse reaction to aircraft**. Aircraft noise and vibration may cause distress to an animal. Whenever possible, animals should be restrained, muzzled or located in such a way that any reaction to such conditions does not pose a threat to the safety of the aircraft.
- **Consideration of passengers on board**. Passengers with allergies to, or a phobia of, animals must be taken into account when deciding on the carriage of animals. Excreta containment, restraint and access to emergency exits should also be considered. The fitment of a muzzle should also be considered as applicable to the animal type.
- **Carriage of associated dangerous goods**. The carriage of live fish and other aquatic animals as cargo may require a separate permission from CASA if cylinders of compressed air or oxygen are required. Part 92 regulates the carriage of dangerous goods and AC 92-05 discusses the use of compressed oxygen or air in support of the consignment and carriage of live aquatic animals by air.

Assistance animals

Carriage of assistance animals should be considered a special case due to the reliance placed on them by the accompanying passenger.

For detailed guidance on the carriage of assistance animals in the aircraft cabin, refer to AC 91-03 – Carriage of assistance animals.

GM 121.360 Polar operations

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required by this regulation to conduct polar operations to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

Operations in the polar region cannot be conducted without obtaining a regulation 121.010 approval, and as a minimum the operator's exposition must include procedures which address the requirements of subregulation 121.360 (3). When developing the exposition, the operator should also consider the applicability of the following for inclusion:

- suitability of the weather at the nominated alternate and the ability to:
  - offload the passengers and crew in a safe manner during adverse weather conditions
  - provide for the physiological needs of the passengers and crew for the duration of the stay at the diversion airport until safe evacuation is possible, and
  - safely extract passengers and crew as soon as possible (execution and completion of passenger recovery is expected as soon as possible within 48 hours following diversion).
- **Passenger recovery plan.** How will the operator safely recover the passengers and crew to their nominated destination or departure airfield in the event of diversion and subsequent unserviceability of the original aircraft.
- **Fuel freeze strategy and monitoring.** Considerations for alternate fuel freeze point temperature determination based on actual measurements of uploaded fuel, in lieu of using the standard minimum fuel freeze temperatures for specific types of fuel used. In considering this item, the operator should establish procedures that require coordination between maintenance, dispatch, and assigned flight crew to convey the determined fuel freeze temperature of the fuel load on board the aeroplane.
- **Voice communications.** Review of the required communications facilities (voice/data link) available for all portions of the flight route. Possible options include using high frequency (HF) voice, HF data link, satellite communication (SATCOM) voice or SATCOM data link. Because of the limitations of VHF and satellite-based voice communications, ATC communications will probably require HF voice over portions of these routes. It is recognised that SATCOM may not be available for short periods during flight over the poles. Communication capability with HF radios also may be affected during periods of solar flare activity. The operator should consider predicted solar flare activity and its effect on communications for each flight that is dispatched for operations into these areas.
- **MEL considerations.** The MEL may need to be amended to cater for polar routes, accounting for any applicable EDTO requirements. Specific consideration should be given to:
  - fuel quantity indicating system, including the fuel tank temperature indicating system
  - APU serviceability, including the electrical and pneumatic supply to its designed capability
  - autothrottle system
  - communication systems relied on by the flight crew to satisfy the requirement for communication capability
  - an expanded medical kit to include automated external defibrillators (AED).
- Training for flight crew and operational support staff roles applicable to all parts of the polar operations.

GM 121.365 Cosmic radiation

This regulation requires the exposition to detail processes and procedures for managing crew exposure to cosmic radiation. In complying with the regulation, the operator must ensure that:

- a cosmic radiation exposure limit is specified
- records are maintained of the total cosmic radiation dose received by crew.

When considering cosmic radiation in the aviation environment, the basic principle is that every reasonable effort should be made to minimise exposure to cosmic radiation, staying as far below the dose limits as is practical and consistent with the activity while taking into account:

- the state of technology
- the economics of improvements in relation to the state of technology
- the economics of improvements in relation to benefits to public health and safety
- other societal and socioeconomic considerations.

In aviation, radiation from natural sources is considered to be occupational exposure because of the high levels of galactic cosmic radiation at commercial cruise altitudes. In its 2000 report, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) ranked aircrews as the fourth most exposed group of employees, with an average annual effective dose of 3 millisieverts (mSv).

Less radiation will be received on a lower-latitude flight because of the greater amount of radiation shielding provided by the Earth's magnetic field. This shielding is greatest near the equator and gradually decreases to zero as one goes north or south. Galactic cosmic radiation levels over the polar regions are about twice those over the geomagnetic equator at the same altitudes. Because solar particle peak energies are much lower than galactic particle peak energies, solar cosmic radiation dose rates are negligible near the geomagnetic equator. A map of high-latitude areas of concern is available on the FAA website.

The Solar Radiation Alert System developed by the FAA's Civil Aerospace Medical Institute (CAMI), with data provided by the Space Weather Prediction Center of the National Oceanic and Atmospheric Administration (NOAA), alerts users of the beginning of a disturbance on the Sun that can lead to high dose rates of ionizing radiation in the Earth's atmosphere. Solar radiation alerts are sent worldwide to subscribers to the NOAA Weather Wire Service (NWWS). A message is sent at the beginning and end of an alert, along with status updates during the alert period. A test message is sent daily if no alert is ongoing. Responding to an alert by flying at a lower altitude can significantly reduce radiation exposure in high-latitude areas of concern. The latest space-weather-related NWWS messages are found on the Space Weather Prediction Center website.

The Australian Bureau of Meteorology also provides information on Space Weather advisories and this can be found on the Space Weather Advisories website.

Managing exposure

The internationally accepted recommendation is that the occupational exposure limit for ionizing radiation is a 5-year average effective dose of 20 mSv per year, with no more than 50 mSv in a single year. Radiation exposure as part of a medical or dental procedure is not subject to recommended limits. It is important to note that these limits are not thresholds beyond which the dose is intolerable, but instead are upper limits of acceptability based on the current risk coefficients and the desire to limit doses such that the health risks associated with exposure do not exceed those of what is normally considered a safe industry.

A number of web-based calculators are available for calculating radiation exposure, however there are no programs, websites or applications currently available for estimating the effective dose received from a solar particle event. The dose of ionizing radiation that an individual might receive during a solar particle event cannot be estimated in advance. Research is ongoing on how best to estimate flight doses on the basis of satellite and ground-level measurements made during an event. For analysis purposes, the FAA provides applications CARI-6 and CARI-6M, which can be used to estimate the effective dose of galactic cosmic radiation:

- CARI-6 – This web application calculates the effective dose of galactic cosmic radiation received by an individual (adult) on an aircraft flying a great-circle route between any two airports in the world. The web application takes into account changes in altitude and geographic location during the course of a flight, as derived from the flight profile entered by the user. Based on the date of the flight, appropriate databases are used to account for effects of changes in the Earth's magnetic field and solar activity on galactic radiation levels. The web application also calculates the effective dose rate from galactic cosmic radiation at any location in the atmosphere at altitudes up to 60 000 ft. CARI-6 is found on the FAA website.
- CARI-6M – This web application does not require a great-circle route between origin and destination airports; it allows the user to specify the flight path by entering the altitude and geographic coordinates of waypoints. CARI-6M is found on the FAA website.

Reducing exposure

The amount of galactic cosmic radiation exposure received while flying depends on the amount of time in the air, altitude, latitude, and solar activity. Lowest dose rates at a given altitude are found near the equator and increase as one approaches the poles. For any location at commercial flight altitudes, a higher altitude will incur a higher dose rate. Responding to a solar radiation alert by flying at a lower altitude can significantly reduce radiation exposure in high-latitude areas of concern, particularly if the response is rapid.

GM 121.370 Exceeding cosmic radiation limits

Reserved

GM 121.375 Obstruction of emergency exits

Reserved

GM 121.380 Assignment of cabin crew seats

The phrase ‘cabin crew seats’ means a seat specifically designed by the aircraft manufacturer for the purpose of being a cabin crew seat. In the Australian civil aviation legislation, these design requirements are in Part 90 of CASR and the Part 90 MOS.

This regulation interrelates with regulation 91.555 of CASR and operators should review the GM for that regulation in the Part 91 AMC/GM document.

The allocation of cabin crew seats must take into consideration the emergency evacuation procedures for the aeroplane as well as any other consideration imposed by its type certificate.

This regulation requires that the operator ensures that cabin crew seats located next to or adjacent to an emergency exit, are assigned only to cabin crew members who are part of the crew assigned for that flight.

The regulation permits, in situations where a passenger seat is not available, the operator to assign a cabin crew seat to:

- a person who is a crew member employed by the operator that has not been assigned to the flight by the operator and is identifiable as an employee of the operator

  or
- a person who is an authorised officer carrying out an in–flight passenger cabin inspection.

In both of the above scenarios, the person shall be briefed by a cabin crew member prior to take–off on the following:

- the operation and use of the seat and its restraint system
- the location and use of the oxygen system at the seat (if any)
- the location and use of the life jacket for the seat
- the person’s responsibilities during an emergency.

Emergency or abnormal circumstances

In the event that the PIC declares an emergency or notifies the cabin crew of any abnormal circumstances then a cabin crew member may assign an able-bodied person to occupy a cabin crew seat provided they are briefed by the cabin crew member on their responsibilities while occupying the seat.

Cabin crew seats not located next to or adjacent to an emergency exit may be allocated to other persons mentioned in the operator’s exposition.

Use of passenger seats by cabin crew members under MEL provisions

Some MEL’s may permit a cabin crew member to occupy a passenger seat if a cabin crew seat is inoperative.

This is entirely permissible under regulation 121.380 of CASR, although an operator will need to ensure that their emergency evacuation procedures under regulation 121.755 of

CASR account for a cabin crew member with emergency evacuation duties occupying a passenger seat in place of their ‘normal’ cabin crew seat.

GM 121.385 CASA approvals relating to take-offs and landings

The majority of approaches are flown at glideslope angles of 3°. Angles up to 3½° are considered to be routine and within the capability of any certificated aeroplane. Approach angles greater than 3½°, but less than 4½°, are unlikely to produce significant problems in normal operations, and accordingly there are no specific requirements. Operators using these approach angles should consult the aircraft manufacturer and satisfy themselves that the performance and handling characteristics are acceptable. Approach angles of 4½° or greater are defined as steep approaches. Any approach angle of 4½° or more requires specific approval.

There are several aerodromes in Europe and in other locations around the world where the approach slope may be classified as 'steep'. Examples of airports that require a steep angle approach capability include London City (EGLC) and Lugano (LSZA).

Approvals for steep approach and landing (SAL) operations will normally be for a specifically requested aerodrome.

Airworthiness approval for the conduct of steep approaches will generally appear in the flight manual as a steep approach supplement. This supplement will specify a maximum approach angle and the limitations and operational procedures required to ensure safe approaches up to this approach angle. If no such entry is contained within the flight manual it must be assumed that the aeroplane is not cleared for SAL operations.

Steep approach clearance for a particular type of aeroplane will not automatically permit all individual aircraft of that type to operate to the maximum approved angle. The clearance might require modifications to existing equipment, such as GPWS/TAWS, autopilot and flight director computers. Additionally, there will likely be MEL considerations. The operator is responsible for determining the eligibility of a particular airframe with respect to the flight manual SAL requirements and serviceability.

In preparing any application to conduct SAL operations, the operator should review and address any applicable aerodrome information as some aerodromes have specific requirements related to training and entry qualifications.

The following material should be considered for inclusion in the exposition:

- relevant flight manual excerpts including procedures, limitations and performance data
- the specific aerodromes where SAL operations are to be conducted
- weather minima for SAL operations
- description of relevant obstacles
- description of the glide path reference system and type of runway guidance
- the minimum visual reference required at decision height (DH) and minimum descent altitude (MDA)
- required aircraft and aerodrome equipment
- initial training, qualification and recency requirements applicable to each aerodrome
- missed approach criteria

- specific training and recurrent qualification items.

Obtaining approval for 3D instrument approach operation steep approaches

As per subregulation 121.010(3), subregulation 11.055(1B) applies to the granting of this approval.

Operators are advised that CASA may request additional information or documents as part of assessing an application under regulation 11.040. Therefore, operators are advised to provide evidence that the conditions below are met in relation to the operation, to avoid delays in processing the application whilst this information is requested to be provided:

- that the approach path angle requested to be approved is not greater than the maximum approach path angle specified in the aircraft flight manual; and
- that the aircraft flight manual includes any other limitations, normal, abnormal or emergency procedures for the steep approach, as well as amendments to the landing distance data when using steep approach criteria; and
- for each aerodrome at which steep approach operations are to be conducted:
  - there is an available and suitable glide path reference system comprising at least a visual glide path indicating system;
  - weather minima are specified
  - the following items are taken into consideration:
    - the obstacle situation
    - the type of glide path reference and runway guidance;
    - the minimum visual reference to be required at the landing minima
    - available airborne equipment
    - pilot qualification and special aerodrome familiarisation
    - aircraft flight manual limitations and procedures
    - missed approach criteria, including any maximum allowable descent rate.

Applications for this approval are made using the *Air Operator's Certificate / Associated Approvals* form.

5 Subpart 121.F – Performance

There is an exemption in force in relation to Subpart 121.F and Subpart 91.F that effectively permits operators to use the Part 121 performance requirements instead of the Part 91 performance requirements during a private operation conducted by the operator. It is recommended that operators review section 21 of CASA EX83/21.

GM 121.390 Performance data

For the use of third-party performance data calculation providers, operators are reminded that they must comply with the Part 11 directions contained in section 5 of exemption CASA EX82/21. Operators who previously complied with section 9 of CAO 82.0, as in force before 2 December 2021, are reminded that they must still comply with subsection 5(3) of EX82/21, in relation to the requirement to have certain procedures and processes in their exposition.

Operators should read the GM 121.425 entry later in this document for an indication of CASA's intent regarding performance data calculation devices and their categorisation as electronic flight bags (EFBs).

For the mention of ICAO Annex 8 in paragraph 121.390(1)(a), only the following aeroplanes are encompassed by the ICAO Annex:

- aeroplanes over 5 700 kg for which application for certification was submitted on or after 13 June 1960, but before 2 March 2004
- aeroplanes over 5 700 kg for which application for certification was submitted on or after 2 March 2004
- aeroplanes over 750 kg but not exceeding 5 700 kg for which application for certification was submitted on or after 13 December 2007.

If an aeroplane is not covered by list above (i.e. not covered by ICAO Annex 8) then compliance with subregulation 121.390(1) is not required. Such an aeroplane is still required to comply with subregulation 121.390(2).

Subregulation 121.390(2) requires that a calculation relating to the aeroplane's performance for the flight must use data from either the performance data set out in the aircraft flight manual instructions for the aeroplane, or performance data for which the operator holds an approval under regulation 121.010.

The first option relies on the definition of *aircraft flight manual instructions* which is:

> ***aircraft flight manual instructions***, for an aircraft, means the following documents and information provided by the aircraft's manufacturer or issued in accordance with a Part 21 approval:
>
> (a) the aircraft's flight manual;
> (b) checklists of normal, abnormal and emergency procedures for the aircraft;
> (c) any operating limitation, instructions, markings and placards relating to the aircraft.

For the second option, the intent of the regulation 121.010 approval mentioned in this regulation is that it will be a reserve power, not anticipated to be frequently used, that would enable CASA to approve performance data that is not in accordance with, or different from,

the performance data contained in the aircraft flight manual instructions.

Operators considering applying for this approval are advised that for CASA to determine whether operations conducted under the desired approval would maintain the necessary level of aviation safety (see AC 11-04 for an explanation of the level of safety under this approval), CASA would consider the following matters:

- performance data needs to comply with the applicable aircraft certification standards
- although permitted and possible for operators to use data from sources other than the OEM, CASA expects the data to be formalised through a Part 21 of CASR approval as meeting the applicable airworthiness standards
- operators can engage the services of an approved design organisation, Part 21 authorised person, or CASA to achieve such approvals
- Part 21 of CASR automatically accepts a range of other approvals from recognised countries.

The approval mentioned in the regulation is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

This approval is not needed for an operator's use of third-party performance data calculation programs that use the unvaried and unchanged data that is set out in the aircraft flight manual instructions.

Note: Some performance information presented in AFM or AFM supplements may be advisory information only and should not be used to determine performance in compliance with the provisions of regulations 121.395 and 121.420. Caution should be exercised when using advisory material or when using third-party performance calculations as the results may not be based on the required AFM provided certification data in accordance with ICAO Annex 8 requirements.

GM 121.395 Take-off performance

The take-off performance requirements are contained in Divisions 1 and 1A of Chapter 9 of the Part 121 MOS.

For the purposes of applying the correct take-off performance requirements, where an aeroplane is modified by an STC that increases the MTOW to being greater than 5,700kg, the commuter category take-off performance data supplied and incorporated as part of the STC must be used in all cases irrespective of the actual take-off weight of the aeroplane.

Example

A Model B200, Super King Air (Normal Category), is modified by an STC that increased the MTOW to >5,700kg. The performance data and performance requirements that now apply are those relevant to the increased MTOW.

One element of determining whether the performance requirements can be met is the identification of the obstacle assessment area after take-off. This obstacle assessment area begins at the end of the take-off distance available at the aerodrome or, 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 (see the definition of D in subsection 9.04(5) of the Part 121 MOS).

The width at the beginning of the obstacle assessment area is set by subsection 9.04(2) of the Part 121 MOS, or, if the transitional provision in subsection 9.04(5) of the Part 121 MOS is being used, by subsection 12A of the old CAO 20.7.1B.

This width is not the same as the beginning width of an obstacle limitation surface (OLS) calculated by the operator of a certified aerodrome in accordance with the requirements of Part 139 of CASR. In a case where the OLS width is less than the Part 121 obstacle assessment width, the Part 121 operator and pilot in command are required to determine any obstacles outside the OLS width but within the Part 121 obstacle assessment width. This activity would be conducted in a similar manner to how an operator would determine the presence of obstacles which are relevant to an operation at an uncertified aerodrome.

For code 3 or 4 runways, the minimum OLS width is normally 180m, with some runways grandfathered at 90m. Below are some examples of the initial width of a Part 121 obstacle assessment area for common Part 121 aeroplanes which have a wingspan less than 60m and therefore fit within paragraphs 9.04(2)(b) of the Part 121 MOS.

Examples

A Challenger 604 business jet has a wingspan of 19.61m. Its initial obstacle assessment width would be [(0.5 x 19.61) + 60] x 2 = 139.61m.

An ATR turboprop aircraft has a wingspan of 27.05m. Its initial obstacle assessment width would be [(0.5 x 27.05) + 60] x 2 = 147.05m.

The Dash 8-400 turboprop has a wingspan of 28.4m. Its initial obstacle assessment width would be [(0.5 x 28.4) + 60] x 2 = 148.04m.

The Boeing 737-700/800/900 has a wingspan of 35.8m. Its initial obstacle assessment width would be [(0.5 x 35.8) + 60] x 2 = 155.8m.

Maintenance and currency of data regarding uncertified aerodromes

See GM 121.205 for information regarding the challenges of operating at uncertified aerodromes, and the expectations on operators regarding these operations.

GM 121.420 Landing performance

The landing performance requirements are contained in Division 2 of Chapter 9 of the Part 121 MOS.

For the purposes of applying the correct landing performance requirements, where an aeroplane is modified by an STC that increases the MTOW to being greater than 5,700 kg, the commuter category landing performance data supplied and incorporated as part of the STC must be used in all cases irrespective of the actual take-off weight of the aeroplane.

Example

The landing performance calculations for a commuter category modified aeroplane cannot use the normal category (<5,700kg) performance data or performance rules as the certification basis and resultant data will also have changed.

Subsections 9.10(2) and 9.13(6) of the Part 121 MOS describes certain landing distance requirements in terms of the calculated aeroplane landing distance being not more than a particular percentage of the landing distance available for the runway. Under the pre-2 December 2021 rules, the result of multiplying the calculated aeroplane landing distance by a

safety factor was required to be less than the landing distance available. Although expressed differently, the percentages written in these subsections equate to the old safety factors. For example:

60% is equivalent to 1.67 (i.e. the inverse of 6/10 is 10/6 which is 1.67)
70% is equivalent to 1.43 (i.e. the inverse of 7/10 is 10/7 which is 1.43)

The determination of whether the runway has sufficient landing distance available can be done in either way.

You could ensure that:

AFM landing distance x (1.43 or 1.67 – as applicable) ≤ LDA

or

AFM landing distance ≤ LDA x (0.6 or 0.7 – as applicable).

In-flight monitoring of runway surface conditions (dry, wet or contaminated)

Section 9.13 of the Part 121 MOS requires the PIC to ensure, during the flight and before landing, that the landing performance requirements specified in this MOS section are met for the aerodrome of intended landing. An element of these requirements is determining whether the runway to be used is dry, wet or contaminated.

The determination of the runway surface condition is required to be based on any weather report or forecast, or any combination of weather reports and forecasts. For the avoidance of doubt, the words in the MOS "…during the flight and before landing…" do not indicate that a singular determination can be made once during the flight and relied upon for the entire remainder of the flight. To satisfy their obligations regarding ensuring the safety of the flight under regulation 91.215 of CASR, PICs are expected to check for updated forecasts and reports at regular intervals throughout the flight and base their determination of runway surface condition on these reports and forecasts.

The intent is that landing performance is assured at all times. This can be achieved by the operator evaluating the effect of multiple runway surface conditions for the most limiting aircraft configuration and including appropriate procedures in the exposition. This is particularly recommended where the aircraft landing configuration is restricted due to, abnormal or emergency situations encountered during flight and/or a narrow runway and/or the runway length is minimal.

Actual landing distance

In response to recommendations of the FAA's Take-off and landing performance assessment aviation rule making committee (TALPA ARC), the manufacturers of some jet-engine aeroplanes now supply actual landing distance information to help pilots make more accurate in-flight assessments of the landing distance required in unusual situations. Actual landing distance information takes into account: reported meteorological and runway surface conditions, runway slope, aircraft configuration, planned approach speed, thrust reversers and any other deceleration devices planned to be used for the landing. The FAA's Safety

Alert For Operators (SAFO 19001) contains useful information about the recommendations of the TALPA ARC.

The ICAO Aeroplane Performance Manual (Doc 10064) Chapter 5 - Landing performance, provides an extensive explanation of this concept.

The Part 121 MOS defines actual landing distance for the purposes of implementing a different in-flight (as distinct from pre-flight) landing safety factor. This definition is in subsection 9.13(1) of the Part 121 MOS and states:

> Actual landing distance: means the landing distance required for the actual conditions at an aerodrome using the deceleration devices required to be used for the landing of an aeroplane.

The key points relating to whether an operator's performance data includes ALD, which enables the operator to use the in-flight landing safety factor of 1.15 instead of using 1.67 (note this is the dry safety factor), are:

- Actual landing distance information is intended to show landing performance that can realistically be achieved by flight crews in commercial operations.
- This is distinct from landing performance demonstrated by test pilots during flight tests for aircraft type certification.
- ALD performance data must include data for the use of the deceleration devices required to be used in normal procedures for the aeroplane landing (as prescribed in the AFM normal procedures), which must be more than the certification landing data provided that is determined using wheel-brakes only, for dry-paved runways.
- Under the ICAO Annex 8 standards incorporated by paragraph 121.390(1)(a) of CASR, the provision of ALD data that can be used for subsection 9.13(3) of the Part 121 MOS must be in accordance with the standards prescribed in standard 2.2.7 of Part IIIB of ICAO Annex 8. The specific ALD data for the time of landing is described in subparagraph 2.2.7.1 f). The applicability of Part IIIB of ICAO Annex 8 is such that it applies to aeroplanes over 5700kg and which an application for the issue of a Type Certificate was submitted to the appropriate national authorities on or after 2 March 2004. However, the applicability is also limited to aeroplanes intended for the carriage of passengers or cargo or mail in international air navigation. These are known in some States as transport category aeroplanes. This has resulted in some aeroplanes that are seemingly captured by the requirements of ICAO Annex 8 Part IIIB not having performance data that is required to be in accordance with those requirements and therefore cannot be used to satisfy Part 121 Manual of Standards subsection 9.13(3).
- Where the ALD data is not in accordance with ICAO Annex 8 and Chapter 5 of ICAO Doc 10064 (as explained above), then subsection 9.13(3) (the 1.15 safety factor) of the Part 121 MOS cannot be used and the provisions of subsections 9.13(4) to 9.13(10), as applicable, must be used.

  Example 1

  A Model B300, Super King Air (Commuter Category), Approved December 12, 1989, contains in the AFM performance data, landing data in the form of a chart titled 'normal landing distance – flaps down'. The chart data is only provided for a

dry paved runway and only relies on the use of wheel brakes. It does not provide data for the use of the reverse thrust that is specified as part of normal procedures.

That landing distance data, whilst it is prepared in accordance with Part III of ICAO Annex 8, it is not in accordance with, nor is it required to be provided by, the newer standards prescribed in Part IIIB of ICAO Annex 8 that are necessary to satisfy the definition of actual landing distance in subsection 9.13(1) of the Part 121 MOS.

Therefore, this aircraft cannot use the actual landing distance rule in subsection 9.13(3) of the Part 121 MOS.

Example 2

An Embraer Model EM-505 (Phenom 300) whilst jet-engined and MTOW greater than 5700kg and with the application for certification occurring after 2 March 2004, does not meet the criteria for the AFM performance data to be required to be nor used as ALD as the aeroplane is certified under the 14 CFR Part 23 commuter category by way of exemption to the 14 CFR Part 23 certification requirements.

Therefore, this aircraft cannot use the actual landing distance rule in subsection 9.13(3) of the Part 121 MOS.

Two major manufacturers, Boeing and Airbus, have introduced a new reference for in-flight landing distance performance, catering for both normal and abnormal system operations. The new distances are referred to by Airbus as Operational Landing Distances (OLD) and In-flight Landing Distance (IFLD) whereas Boeing incorporates the actual landing distance in the Performance In-flight section of the Quick Reference Handbook. Both manufacturers have included this data in their respective performance applications. The actual landing distances are a realistic representation of operationally achievable landing performance. The representation of this information is generally “unfactored” unless otherwise stated. The CAO 20.7.1B amendment facilitated the adoption of manufacturers’ performance applications along with the application of the 1.15 safety factor. The FAA and EASA have adopted the in-flight landing distance factoring as policy, along with ICAO.

Landing in very wet conditions

Operators and flight crews should be aware that the landing distance factors mentioned above – whether based on type certification testing or actual landing distance data provided by OEMs separately – may not provide adequate stopping distance in very wet but not yet contaminated runway surface conditions.

Issues that contribute to such incidents include runway conditions such as texture (polished or rubber contaminated surfaces), drainage, puddling in wheel tracks and active precipitation. For un-grooved runways, wheel braking may be degraded when the runway is very wet. Research conducted by the FAA has indicated that 30 to 40 percent of additional stopping distance may be required in certain cases where the runway is very wet, but not yet classified as contaminated.

In order to manage some of the risks associated in operating to very wet runways, it is recommended that operators consider the landing safety factor of 1.15 (which is the difference between 1.67 and 1.92 for type certification data and the value mentioned in the actual landing distance data) to be a minimum value.

If moderate or heavy precipitation is expected at the time of landing, operators and flight crews should consider assuming a braking action of medium or fair, or increasing the landing safety factor used during in-flight landing performance calculations. The FAA's Safety Alert For Operators (SAFO 19003) contains useful information about the recommendations on landing safety factors.

Maintenance and currency of data regarding uncertified aerodromes

See GM 121.205 for information regarding the challenges of operating at uncertified aerodromes, and the expectations on operators regarding these operations.

GM 121.425 Computerised performance data systems not fitted to aeroplanes

Regulation 121.425 will be repealed. There is no MOS content for this regulation.

The deletion of this regulation was publicly consulted as part of the Part 121 MOS Tranche 2 consultation that occurred between 3 July and 3 August 2020 (Tranche 2 - Proposed new Part 121 MOS – Australian Air Transport Operations - Larger Aeroplanes - (CD 2010OS) - Civil Aviation Safety Authority - Citizen Space (casa.gov.au)). CASA may consult with the industry in the future on the addition of specific electronic flight bags (EFB) rules to Part 121.

The safety outcome of this regulation is temporarily achieved through a Part 11 direction to operators in relation to the use of EFB. This direction is contained in section 5 of CASA EX82/21. Operators should note that this direction requires an operator to obtain CASA's approval in writing before using an EFB for the first time. The approval mentioned in the direction is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website. Operators who held an AOC prior to 2 December 2021, and were already compliant with Appendix 9 of CAO 82.0 as in force on 1 December 2021, do not need to obtain this approval since they are taken to already be using EFBs.

GM 121.430 Procedures relating to inoperative engines

Reserved

6 Subpart 121.J — Weight and balance

There is an exemption in force in relation to Subpart 121.J and Subpart 91.J that effectively permits operators to use the Part 121 weight and balance requirements instead of the Part 91 weight and balance requirements during a private operation conducted by the operator. It is recommended that operators review section 22 of CASA EX83/21.

GM 121.435 Loading of aeroplane

This regulation requires the operator and the PIC to ensure the aeroplane is flown within weight and balance limits throughout all stages of a flight.

The default system for weight and balance calculations is the aeroplane flight manual. If the operator chooses to use a different system, such as a computer program or an application on a handheld device, it needs to be approved by a weight control authority.

Section 5 of CAO 100.7 sets out requirements for aircraft load data sheets and loading systems. Aircraft pilots in command must not commence a flight unless they have received evidence and taken the necessary actions to ensure compliance with the loading data.

GM 121.440 Procedures for loading aeroplane etc.

There is an exemption in force in relation to this regulation and the necessity to gain a CASA approval under paragraph 121.440(2)(b) of CASR. It is recommended that operators review section 11 of CASA EX83/21.

This regulation requires that the exposition detail the procedures applicable to loading an aeroplane.

If passenger and crew weights (and the weights of carry-on baggage), are not established by either actual weighing or by the use of the standard weights prescribed in Chapter 10 of the Part 121 MOS, the regulation (but note the exemption mentioned at the beginning of this GM and discussed in the next paragraph) requires weights to be calculated in accordance with a method for which the operator holds an approval under regulation 121.010. This latter approval requirement is contained in paragraph 121.440(2)(b).

During the Part 121 MOS Tranche 1 public consultation (Tranche 1 - Proposed new Part 121 MOS – Australian Air Transport Operations - Larger Aeroplanes - (CD 2007OS) - Civil Aviation Safety Authority - Citizen Space (casa.gov.au)) which occurred between 20 June and 20 July 2020, CASA consulted with the industry on deleting the approval requirement from paragraph 121.440(2)(b) and replacing it with an ability for operators to use a derived method, developed in accordance with an approved weighing survey programme and detailed in the exposition. CASA intends to amend this regulation at the next available regulation change opportunity but until then, the legal ability to utilise a derived method of this kind is temporarily enabled via an exemption contained in section 11 of CASA EX83/21.

Information about establishing an exposition-derived weight is in AC 121-05 - Passenger, crew and baggage weights.

If a standard or exposition-derived weight is used, then the procedures in the exposition must ensure that, if the weight of a passenger or crew member with their carry-on baggage is

clearly greater than the applicable standard or derived weight, a weight that is more representative of the actual weight of the person and their carry-on baggage is used.

The procedures must make clear how the operator calculates the respective weights applicable to crew, passengers, all deadload including baggage and cargo, varying catering configurations, any service weight adjustments, fuel as loaded on the aeroplane, and their influence on the aircraft's centre of gravity.

The procedures must cover all staff associated with the loading process, including those responsible for production of the notification documents provided to the PIC and other parts of the organisation[17].

GM 121.445 Pilot in command must have information about aeroplane's weight and balance

Regulation 121.445 will be repealed at the next available regulation change opportunity. There is no MOS content for this regulation.

The deletion of this regulation was publicly consulted as part of the Part 121 MOS Tranche 1 consultation that occurred between 16 June and 16 July 2020 (Tranche 1 - Proposed new Part 121 MOS – Australian Air Transport Operations - Larger Aeroplanes - (CD 2007OS) - Civil Aviation Safety Authority - Citizen Space (casa.gov.au)).

The safety outcome of this regulation is achieved by the requirements in section 10.02 of the Part 121 MOS, empowered by regulation 121.455.

GM 121.450 Computerised weight and balance systems not fitted to aeroplanes

Regulation 121.450 will be repealed at the next available regulation change opportunity. There is no MOS content for this regulation.

The deletion of this regulation was publicly consulted as part of the Part 121 MOS Tranche 1 consultation that occurred between 16 June and 16 July 2020 (Tranche 1 - Proposed new Part 121 MOS – Australian Air Transport Operations - Larger Aeroplanes - (CD 2007OS) - Civil Aviation Safety Authority - Citizen Space (casa.gov.au)). CASA may consult with the industry in the future on the addition of specific electronic flight bags (EFB) rules to Part 121.

The safety outcome of this regulation is temporarily achieved through a Part 11 direction to operators in relation to the use of EFB. This direction is contained in section 5 of CASA EX82/21. Operators should note that this direction requires an operator to obtain CASA's approval in writing before using an EFB for the first time. The approval mentioned in the direction is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website. Operators who held an AOC prior to 2 December 2021, and were already compliant with Appendix 9 of CAO 82.0 as in force on 1 December 2021, do not need to obtain this approval since they are taken to already be using EFBs.

[17] paragraph 119.205(1)(h)

GM 121.455 Weight and balance documents

The weight and balance documentation requirements are contained in section 10.02 of the Part 121 MOS.

7 Subpart 121.K —Equipment

There is an exemption in force in relation to Subpart 121.K and Subpart 91.K that effectively permits operators to use the Part 121 equipment requirements instead of the Part 91 equipment requirements during a private operation conducted by the operator. It is recommended that operators review section 23 of CASA EX83/21.

AMC 121.460 Requirements relating to equipment

Section 11.05 Additional GM regarding visibility of installed equipment

Cockpits designed specifically for single pilot operations need to be carefully assessed for adequacy of instrument visibly, interpretation and useability when being considered for use in training (including line training) and checking or testing operations, particularly in degraded visual cue operational situations.

Operators who operate aircraft with cockpits configured for single pilot operations should conduct a risk assessment and if necessary, an in-flight assessment of the readability of analogue or EFIS based attitude and performance instrumentation critical for flight path management. This should be completed before considering the use of the aircraft in line supervision, training, checking, or testing operations which require additional flight path monitoring by a second pilot.

In cases were adequate attitude and performance instrument readability from the non-command or training pilot seat is not available or marginal, training, check or PICUS flights may need to be limited to the VFR with the availability of an adequate visual cue environment to avoid the potential for hazardous flight path management issues arising.

Any risk assessment and/or flight assessment must ensure all information presented by the attitude and performance instrument package in the aircraft (including EFIS trend lines or other trend indicators) is able to be utilised by the training or check pilot or flight examiner operating from the non-command or training pilot seat for flight path monitoring.

Refer Part 121 MOS section 11.05 - Visibility and accessibility of equipment.

Section 11.07 of the Part 121 Manual of Standards – accuracy of time measurement

Item 3 of table 11.07 of the Part 121 MOS requires the fitment or carriage of equipment to measure time. The requirement in relation to accuracy is that the equipment must "display accurate time in hours, minutes and seconds".

Multiple legislative requirements rely on the accuracy of the time equipment used for aircraft flights.

It is an acceptable means of compliance with the requirement for time equipment to "display accurate time" if the accuracy of the equipment is to within plus or minus 30 seconds.

Section 11.08 of the Part 121 Manual of Standards – radiocommunication systems

Subsection 11.08(1) of the Part 121 MOS requires the aeroplane radiocommunication systems to be capable of collectively communicating on the frequencies necessary to meet the reporting, broadcast and listening watch requirements under regulations 91.630, 91.635, 91.640 and 91.675 of CASR, from any point on the route of the flight, including in the event of any diversions.

Radiocommunication systems – HF (section 11.08 of the Part 121 MOS)

If an HF radio is fitted to an aeroplane to comply with subsection 11.08(1) of the Part 121 MOS (generally this would be in geographical areas where a VHF radio cannot ensure the required communications), then the radio must, in order to be fitted as an acceptable means of compliance:

- take into account the expected radio propagation conditions during the period of operation
- be capable of delivering a peak envelope power to the antenna transmission line of at least 100 watts and not greater than 400 watts under standard conditions.

Radiocommunication systems – SATCOM (section 11.08 of the Part 121 MOS)

Where 2-way communications cannot be maintained using a VHF radio in the event of emergency and/or abnormal operations en route, it is an acceptable means of compliance to use SATCOM telephone that is fitted to the aeroplane in accordance with Part 21, instead of an HF radio, provided that all of the following conditions are met:

- routes are selected so that the anticipated period beyond VHF coverage, in the event of emergency and/or abnormal operation, does not exceed 30 minutes
- appropriate checks have been incorporated into the pre-flight check list and form part of the company's operating procedures
- the system is equipped with an external antenna and operated via a common VHF headset/microphone
- SATCOM telephone transmissions will be recorded by the Cockpit Voice Recorder
- the system is inter-operable with existing NAV systems
- power can be removed from the system
- defect reports will be issued and dispatched as for other COM systems
- the system has been incorporated in the Minimum Equipment List if there is one for the aircraft.

Note: SATCOM telephone contact procedures are described in AIP ERSA. Additionally, to facilitate ATC initiated calls to the aircraft during contingencies, it is recommended that the phone number of the aircraft be included in Field 18 of the flight plan. Any pre-flight radio check of the SATCOM telephone should not be made to ATS to avoid congesting ATS phone lines.

Section 11.15 of the Part 121 Manual of Standards – independent portable lights

The information in this section outlines acceptable means of compliance regarding what constitutes "an independent portable light" for a flight crew member as required by paragraph 11.15(1)(c) of the Part 121 MOS.

For the purposes of the previously mentioned MOS paragraph, a torch carried onboard by the flight crew member is considered to constitute "an independent portable light" provided that the flight crew member has confirmed on the day of the flight that the torch:

- is serviceable
- has sufficient light output to properly illuminate any control, switch or display within the cockpit that the flight crew member would be required to view, manipulate or action during normal, abnormal or emergency situations.

Division 9 of the Part 121 Manual of Standards – oxygen equipment and oxygen supplies

Note: This acceptable means of compliance continues the previous standards specified in subsection 3 of 108.26 prior to 2 December 2021 when this CAO was repealed.

It is an acceptable means of compliance if a gaseous oxygen system complies with one of the following specifications:

- C.I.G. Gas Code 420 or 430
- RAAF Specification G172
- U.K. Ministry of Defence DEF STAN 68-2 1/1
- U.S. Military Specification MIL-0-272 10.

It is an acceptable means of compliance if oxygen produced through chemical means in an oxygen system complies with one of the following specifications:

- U.S. Military Specification MIL-E-83252
- Scott Engineering Report 1024.

Sections 11.40, 11.41 and 11.43 of the Part 121 Manual of Standards – supplemental oxygen and oxygen dispensing unit requirements

Note: This acceptable means of compliance continues previous standards specified in paragraph 8.2 of CAO 20.4 and subsections 5 and 6, and Appendix II, of 108.26 prior to 2 December 2021 when these CAOs were repealed.

The information in this section outlines acceptable means of compliance regarding the fitment of supplemental oxygen equipment, the means of calculating the supplemental oxygen supply and the dispensing units for supplemental oxygen, including the minimum mass flow requirements, in relation to the requirements of sections 11.40, 11.41 and 11.43 of the Part 121 MOS. None of these requirements override a higher requirement imposed by a design standard (however described) related to the type certification, or supplemental type certification, of the aircraft.

In determining the amount of oxygen required to be carried, the amount is determined on the basis that:

- a cabin pressurisation failure will occur at a point on the planned flight route which is most critical from the standpoint of oxygen need
- after the failure, the aircraft will descend in accordance with the emergency procedures specified in the aircraft's flight manual (without exceeding its normal operating limitations) to a flight altitude or a Flight Level, as the case may be, that will allow the safe termination of the flight.

In relation to the requirements of subsection 11.40(1) and 11.41(1) of the Part 121 MOS that certain aircraft must be "fitted with" supplemental oxygen equipment, it is acceptable that portable oxygen units can be carried to meet this requirement.

Dispensing units must meet the following requirements, in addition to those requirements mentioned in section 11.43 of the MOS:

- An individual dispensing unit must be installed for each occupant for whom supplemental oxygen is to be supplied.
- A unit must be equipped with a suitable means to retain the unit in position on the face.

- A unit:
  - must not, while being used, adversely affect a person's ability to use the crew intercommunications equipment or radiocommunication equipment required to be fitted to the aircraft by the civil aviation legislation

    or
  - must provide alternative communication equipment that can achieve equivalent communication outcomes for the person using the unit.
- The units provided in an aircraft operating at or below flight level 180 must include at least 1 unit designed to cover the nose and mouth for every 15 units provided.
- Every unit provided in an aircraft operating above flight level 180 must be designed to cover the nose and mouth.
- Every unit installed in an unpressurised aircraft must have all of the following information clearly visible on it:
  - a notice prohibiting smoking while the unit is used
  - an illustration showing how to put the unit on
  - a notice describing the dangers of flying with any kind of nasal obstruction or congestion.
- For flight crew members or assisting crew members – they must be provided with oxygen demand equipment with the oxygen dispensing unit connected to an oxygen supply terminal which is immediately available to each of these crew members when seated at their crew station.

The following minimum mass flow requirements must be met:

- If continuous flow equipment is installed for the use by flight crew members, either:
  - the minimum mass flow of supplemental oxygen available for each crew member must not be less than the flow required to maintain, during inspiration, a mean tracheal oxygen partial pressure of 149 mm Hg when breathing 15 litres per minute, body temperature and pressure saturated (BTPS) and with a maximum tidal volume of 700 cc with a constant time interval between respirations

  or
  - the flow rates and mask efficiencies in Figure 1 below may be used instead of the above flow rates.
- If demand equipment is installed for use by flight crew members, the minimum mass flow of supplemental oxygen available for each flight crew member must not be less than the flow required to maintain, during inspiration, a mean tracheal oxygen partial pressure of 122 mm Hg, up to and including a cabin pressure altitude of 35 000 ft and 95 per cent oxygen between cabin pressure altitudes of 35 000 ft and 40 000 ft, when breathing 20 litres per minute BTPS. In addition, there must be means to allow the crew to use undiluted oxygen at their discretion.
- For passengers or cabin crew members using masks, the minimum mass flow of supplemental oxygen available for each person at various cabin pressure altitudes must not be less than the flow required to maintain, during inspiration and while using the oxygen equipment provided, the following mean tracheal oxygen partial pressures:
  - at cabin pressure altitudes above 10 000 ft up to and including 18 500 ft – a mean tracheal oxygen partial pressure of 100 mm Hg when breathing 15 litres per minute,

BTPS, and with a tidal volume of 700 cc with a constant time interval between respirations;

- at cabin pressure altitudes above 18 500 ft up to and including 40 000 ft – a mean tracheal oxygen partial pressure of 83.8mm Hg when breathing 30 litres per minute, BTPS, and with a tidal volume of 1100 cc with a constant time interval between respirations. The flow rates and mask efficiencies specified in Figure 1 below may be used at cabin pressure altitudes up to 25 000 ft instead of the above flow rates.

- For passengers or cabin crew members using nasal cannulas manufactured under the name “Oxymizer”, the minimum flow of supplemental oxygen available for each person at various cabin pressure altitudes must not be less than 0.3 litre per minute at 10 000 ft altitude, increasing by 0.1 litre per minute for every 2 000 ft up to 18 000 ft altitude.

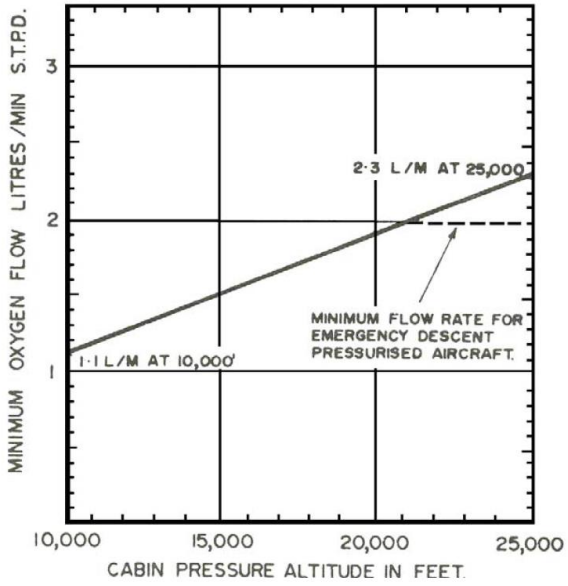

Figure 1: Minimum oxygen flow rates for flight altitudes not exceeding FL250 when using masks with efficiencies equal to, or better than, the A 8 B oronasal mask, the Scott 28302–11 semi-disposable mask or the K–S disposable mask

Sections 11.40 and 11.41 of the Part 121 Manual of Standards – provision of oxygen where an aeroplane only certified at or below 25000ft can descend to 13000ft in 4 minutes or less

It is an acceptable means of compliance with determining whether the aeroplane can descend to below 13000 ft in 4 minutes or less, as required by subsections 11.40(2A) and 11.41(2A), if the maximum altitude up to which an aeroplane can operate without a passenger oxygen system being installed and capable of providing oxygen to each cabin occupant, should be established using an emergency descent profile that takes into account the following conditions:

- 17 seconds’ time delay for pilot’s recognition and reaction, including mask donning, for trouble shooting and configuring the aeroplane for the emergency descent (emergency descent data/charts established by the aeroplane manufacturer and published in the aircraft flight manual (AFM), and/or the AFM should be used to ensure uniform application of the option)
- maximum operational speed (VMO) or the airspeed approved in the AFM for emergency descent, (emergency descent data/charts established by the aeroplane

manufacturer and published in the AFM, and/or AFM should be used to ensure uniform application of the option), whichever is the less.

It is an acceptable means of compliance with determining how oxygen should be supplied to the 10% of persons mentioned in paragraphs 11.40(2A)(b) and 11.41(2A)(b) if the oxygen is supplied by:

- a plug-in or drop-out oxygen system with sufficient outlets and dispensing units uniformly distributed throughout the cabin so as to provide oxygen to each passenger at his/her own discretion when seated on his/her assigned seat

  or
- portable bottles, when a cabin crew member is required on board such flight.

Sections 11.44 and 11.45 of the Part 121 Manual of Standards – protective breathing equipment

Note: This acceptable means of compliance continues previous standards specified in subsection 10 of CAO 20.4 and subsection 7 of 108.26 prior to 2 December 2021 (when these CAOs are expected to be repealed).

The information in this section outlines acceptable means of compliance related to the protective breathing equipment required by sections 11.44 and 11.45 of the Part 121 Manual of Standards (the MOS).

The portable protective breathing equipment required by paragraphs 11.45(3)(b) and (3)(c) of the MOS must comply with (E)TSO-C116 (or any later version).

Except for the portable protective breathing equipment required by paragraph 11.45(3)(a) of the MOS which may, in relation to the 15 minute supply requirement of paragraph 11.45(2)(c) of the MOS, comply with (E)TSO-C116 (or any later version), the 15 minute supply requirement of paragraphs 11.44(2)(c) and 11.45(2)(c) must be calculated in reference to a pressure altitude 0 feet with a respiratory minute volume of 30 litres per minute, body temperature and pressure dry (BTPD) with the acceptable means of compliance being:

- if a demand oxygen system is used, a supply of 300 litres of free oxygen at 20°C and 760 mm Hg pressure is considered to be of 15-minute duration at the prescribed altitude and minute volume
- if a continuous flow protective breathing system is used (including a mask with a standard rebreather bag) a flow rate of 60 litres per minute at 8 000 ft (45 litres per minute at sea level) and a supply of 600 litres of free oxygen at 20°C and 760 mm Hg pressure is considered to be of 15-minute duration at the prescribed attitude and minute volume.

Section 11.52 of the Part 121 Manual of Standards - Hand-held fire extinguishers

Section 11.52 of the Part 121 MOS requires an aeroplane to carry a certain number of hand-held fire extinguishers. The MOS does not specify a fire extinguisher standard that must be met. It is an acceptable means of compliance if the hand-held fire extinguisher meets any of the following standards:

- Civil Aviation Safety Authority Australia, Australian Technical Standard order (ATSO)
- Civil Aviation Safety Authority Australia, Civil Aviation Order CAO 103.16
- Australian Department of Defence Specifications (DEF (Aust))

- Standards Association of Australia Australian Standards (AS)
- United States of America Federal Aviation Administration Technical Standard Order (TSO)
- United States of America, Federal Services Administration Federal Specifications
- United States of America, Air Force-Navy Aeronautical Standards (AN)
- United States of America, Military Standards (MS)
- United States of America, Military Specifications (MIL)
- US Coast Guard
- American Society of Automotive Engineers, Aerospace Material Specifications (AMS)
- Aerospace Industries Association of America, National Aerospace Standards (NAS)
- Underwriters Laboratories
- United Kingdom Ministry of Technology, Aircraft Material Specifications (DTD)
- British Standards Institution Specifications (BSI)
- Society of British Aerospace Companies Standards (AS)
- Society of British Aerospace Companies Aircraft General Standards (AGS).

Section 11.60 of the Part 121 Manual of Standards – Life jacket stowage

Subsections 11.60(2) and (3) of the Part 121 MOS, in combination, require a life jacket to be 'readily accessible' for each person unless, in the case of infants or a second child in a single seat, the operator has procedures that provide for the distribution of life jackets (or flotation devices if the law allows for this) to these persons.

It is an acceptable means of compliance with 'readily accessible' if the relevant life jackets (or flotation devices if the law permits this) are permanently installed within reach of the person responsible for retrieving and fitting the lifejacket.

In relation to the use of operator's procedure to avoid permanent installation within reach of the person responsible, it is an acceptable means of compliance if the operator's procedures for distribution of the life jacket (or flotation device if the law permits) address the following:

Distribution of life jackets before departure:

- when the life jackets are to be distributed
- the briefing to be provided to the person(s) responsible for the infant/child
- acceptable stowage locations that ensure the life jacket remains easily accessible to the responsible person, and retrieval of the life jacket in an unanticipated ditching or inadvertent water contact does not hinder egress

Note: The stowage locations, and method of restraint, of the life jackets and/or flotation devices will need to ensure compliance with regulations 91.585 and 91.600. These items of equipment are encompassed by the definition of cargo for the purposes of these regulations.

- life jackets are returned to their designated stowage at the end of the flight and are checked for damage before re-stowing
- life jackets are checked to ensure they are onboard and available in the required numbers for a given flight.

Distribution of lifejackets when preparing for an anticipated evacuation on water:

- when the life jackets are to be distributed to responsible persons as part of cabin preparation procedures
- the briefing to be provided to the person(s) responsible for the infant/child
- fitment of the lifejackets with briefing and assistance from the cabin crew
- instructions to responsible persons on when to inflate the life jacket.

Distribution of lifejackets in an unanticipated evacuation on water or inadvertent water contact

It is unlikely that cabin crew will have time to distribute life jackets in an unanticipated water contact occurrence, and as a result, responsible persons may not have immediate access to infant or additional life jackets. The operator's procedures must include the means for cabin crew members to distribute infant and additional life jackets in these circumstances.

Subsection 26.69(8) of the Part 91 Manual of Standards – pressure altitude reporting standards

Note: This acceptable means of compliance continues previous standards alluded to in the pre-2 December 2021 CAO 20.18 Appendix XI subsection 5 and Appendix XII subsection 4, and also mentioned in section 3.6.2 of AC 21-45.

For paragraph 26.69(8)(b) of the Part 91 MOS, in relation to other systems approved under Part 21 of CASR that have a level of performance equivalent to a system mentioned in paragraph 26.69(8)(a) (which is a barometric encoder of a type authorised in accordance with (E)TSO-C88a), it is an acceptable means of compliance if the other systems meet a standard specified in paragraph 3.6.2 of AC 21-45 *Airworthiness approval of airborne automatic dependent surveillance broadcast equipment*.

GM 121.460 Requirements relating to equipment

The MOS content for subregulation 121.460(1) is contained in Chapter 11 of the Part 121 MOS. This regulation enables the Part 121 MOS to prescribe requirements relating to fitment and carriage of equipment on an aeroplane.

For equipment required by Subpart 121.K, an approved item of equipment is defined by the relevant airworthiness requirements (refer to regulations 21.305 and 21.305A for additional information).

The prescribed equipment provisions are the minimum required equipment level and do not prevent an operator from fitting or carrying additional items of equipment if they comply with the rule about additional equipment in subsection 11.04(4) of the Part 121 MOS.

TSO and ETSO version references in the MOS (section 1.05 of the Part 121 MOS)

Many equipment rules require equipment to meet certain TSO or ETSO standards. However, in most cases both the specific version of the TSO or ETSO mentioned in the rule AND later version of the TSO or ETSO is acceptable. To avoid significant duplication throughout the MOS of the words "or a later version" or similar, there are rules in section 1.05 of the MOS describing how mentions of TSO or ETSO versions in the MOS are to be treated. The basic rule is that, unless an individual MOS rules states otherwise, any references to a particular

TSO or ETSO version is to be taken as a reference to that TSO or ETSO version or any later versions.

Stabilised heading (section 11.07 of the Part 121 MOS)

A stabilised heading flight instrument is required to be fitted by sections 11.07 of the Part 121 MOS.

Queries have been made to CASA whether the heading displayed in the Garmin GNS 430 equipment satisfies any of these stabilised heading requirements. At the time of publishing, a Garmin GNS 430 is **not approved** under Part 21 CASR (either by CASA or the FAA) as an HSI instrument, i.e. as an approved source of stabilised heading information.

Typical (acceptable) in-cockpit sources of stabilised heading flight information are either:

- an analog (gyroscopic) DI or HSI gauge

  or
- an equivalent electronic HSI display (for example, a Garmin GI 275 HSI, or the HSI component of an integrated EFIS/PFD display).

These instruments have been approved under Part 21 of CASR for the purpose of providing stabilised heading flight information. Such an approval is conveyed in one of several ways:

- stand-alone approval as an HSI instrument, whether OEM-installed or retrofitted, under an appropriate TSO (e.g. TSO-C5f for a non-magnetic HSI)
- approved under the TC (type certificate) of the OEM (which would require a demonstration of performance equivalent to the TSO standard) and is most commonly the case for integrated flight deck systems in larger transport category aircraft
- approved, as a retrofitted instrument, under an STC with an associated AML (approved model list) – for example, for the newer Garmin electronic ‘multi-function’ instruments e.g. the GI 275 in HSI mode); which again would have required a demonstration of compliance (by Garmin to the FAA in this case) to the equivalent HSI performance standard.

For the case of a non-magnetic HSI, the performance standard referenced in TSO-C5f is the following: AS8021 Minimum Performance Standard for Direction Instrument, Non-Magnetic (Gyroscopically Stabilized). There are additional requirements beyond simply the presentation of a heading figure to be an approved stabilised heading instrument. For example, the above standard has requirements for the following matters (this is not a complete list and is just indicative as an example):

- malfunction indication (section 3.6)
- indicating method (section 3.8) [i.e., an appropriate dial presentation and visual cueing by display of rotating dial display or horizontal scale display with moving graduations during the turn]
- dial markings (section 3.10) [requirements for numerically marked graduations]
- course setting input knob (section 3.11).

GNSS displays of heading value do not meet any of these broader requirements, which is

why many are not approved by regulators for this purpose.

Navigation equipment (section 11.09 of the Part 121 MOS)

Subsection 11.09(5) of the Part 121 MOS requires, in part, that the navigation equipment for an aeroplane be such that, in the event of the failure of any navigation equipment at any stage of a flight, sufficient navigation equipment remains to enable the aeroplane to navigate in accordance with the operational flight plan.

The intent of this rule is that appropriate redundancy exists in relation to navigation equipment during an air transport operation. It is a modernised version of the old charter and RPT requirements that were in the AIP before 2 December 2021. Under those old AIP rules, charter and RPT aircraft were required to have duplicative onboard navigation equipment if only 1 navigation aid was available at the destination or alternate aerodromes, or one each of different kinds of navigation equipment if there were multiple navigation aids at the destination or alternate aerodromes. These AIP rules were removed when the new Part 121, 133 and 135 air transport rules were introduced.

Especially for smaller aircraft, modern GNSS units incorporate a VHF navigation aid function within the same physical unit. This kind of singular unit does not qualify as 2 separate items of navigation equipment and there would need to be another separate head unit that could control the VHF navigation aids instead of the GNSS head unit. If a unit required to be fitted or carried fails in flight, the pilot and operator must ensure that the flight is continued in a manner consistent with their obligations to ensure the safety of the flight.

These requirements interlink with the requirements for operational flight plans under regulation 121.175 of CASR. Regulation 121.175 requires the operator and the PIC to ensure that, when a flight begins, the operational flight plan is prepared having regard to the safety of the aircraft and the people on board, the aircraft's performance capabilities, the expected operating limitations and conditions for the flight, and contains the information required by Chapter 5 of the MOS.

Section 5.01 of the MOS outlines the pre-flight content requirements for an operational flight plan and not the in-flight content which is subject to change based on occurrences during a flight. As an example of how this all ties together with the navigation equipment requirements:

> Subparagraph 5.01(2)(f)(i) of the MOS requires the pre-flight operational flight plan (P-OFP) to include the route and route segments of the flight, including waypoints, distances, and tracks.
>
> If your aircraft was fitted with a single (E)TSO-C129 GNSS plus one ADF and one VOR, the pre-flight content of the operational flight plan could contain RNAV waypoints.
>
> However, your P-OFP must also meet the other requirements of subregulation 121.175(2) of CASR which are that it must be prepared having regard to safety, performance and the expected operating limitations and conditions (which would include, for example, meteorological conditions).
>
> As part of the pre-flight planning, the operator and pilot would have to consider what the failure of any one of the single navigation systems would mean to the flight and have appropriate contingency strategies in place for such situations. Pre-flight planning would also need to consider subsection 11.09(6) of the MOS which

may require the provision of a destination alternate aerodrome that has more than one navigation system instrument approach option.

In flight, the content of the operational flight plan is highly malleable and can be amended to reflect any navigation needs that may have arisen due to the failure of any single navigation system, provided that for IFR flights the requirements of section 14.02 of the Part 91 MOS (general IFR navigation methods) and paragraph 11.09(5)(b) and subsection 11.09(6) of the Part 133 MOS can still be met.

Carbon monoxide detectors / warning devices

Crew and passengers in piston engine aircraft have the potential for carbon monoxide (CO) poisoning from cracked exhaust units and unserviceable heat exchange assemblies. This situation can be further exacerbated by unsealed penetration through the firewall and can go unnoticed through the fitment of inadequate or inappropriate CO detection units. The fitment of placards designed to change colour when exposed to CO may not necessarily provide adequate warning to the pilot and passengers of the elevated levels of CO within the cabin. More modern devices which include audible and improved visual warnings are more suited to detect and warn cabin occupants of the elevated levels of CO.

While audible/visual CO detectors are not mandated, they are available and they more effectively communicate the presence of CO.

It is strongly recommended that pilots wear personal CO detectors. As not all aircraft are required to have CO detectors fitted and small electronic personal devices are readily available at affordable prices. These devices allow for continual monitoring of CO levels with audible and visual warnings when escalated CO levels are detected. Examples of small electronic personal devices are shown in Figure 2.

Figure 2: Electronic CO detector devices available for personal use

Aircraft certified and hard-wired products are also available that can be installed by approved maintenance repair organisations. Reliance on only the visual CO indicator placard, that changes colour in the presence of CO, is considered suboptimal. If the aircraft is only fitted with the placard type CO indicator, the operator should ensure the placard is placed in the field of view of the pilot, is regularly checked to ensure that the placard is not time-expired, and that the indicator is not faded from ultraviolet exposure or contamination.

AWB 02-064 Preventing Carbon Monoxide Poisoning in Piston Engine Aircraft also contains useful information on this topic.

Survival equipment - signalling (section 11.13 of the Part 121 MOS)

In determining whether Electronic Visual Distress Signals (EVDS) meet the requirements of paragraph 11.13(2)(b) of the Part 121 Manual of Standards, it is recommended that the operator consider whether:

- using the EVDS would constitute an offence under section 24 of the Civil Aviation Act 1988
- the EVDS meets all relevant safety standards including the requirements within Australian Standard AS 2092-2004 and the International Maritime Organization (IMO) Life Saving Appliance Code
- the light emitted by the EVDS would be recognised and effect an appropriate response in a distress situation, noting that lights of this kind are not internationally approved distress signals
- the use of EVDS is restricted by State and Territory legislation (Australian States and Territories restrict the types of lasers, including laser pointers and other laser signalling devices that can be lawfully used).

Terrain awareness and warning systems (TAWS) (section 11.24 of the Part 121 MOS)

TAWS offer enhanced vertical situational awareness. However, nuisance alerts can be detrimental and distract a pilot. This can lead to a pilot decision to inhibit the system.

Inhibiting warning systems and/or ignoring warnings can lead to CFIT. Operators must ensure pilots are thoroughly trained and familiar with any TAWS fitted to their aircraft, and that pilots and operators carefully consider decisions to inhibit a TAWS.

Operator expositions should include procedures guiding or directing pilots regarding the appropriate use of any TAWS inhibit switch.

Supplemental oxygen – pre-flight considerations

The altitudes at which supplemental oxygen must be carried, as specified in sections 11.40 and 11.41 of the Part 121 MOS, represent the minimum generally acceptable standard of safety for the operations regulated by this rule. However, it is strongly recommended that prior to a flight, operators and pilots carefully consider whether supplemental oxygen should be carried even if not required by the Part 121 MOS. It is recommended that operators and pilots consider the following factors in making this decision:

- The likely causes of hypoxia and their relevance to the planned flight and the persons on board (depressurisation, increased altitude due weather, and the potentially earlier onset of hypoxia for an individual due to either a medical condition, medications, smoking, age, disability, experience in flights at high altitude, altitude of the place of residence or other relevant factor)
- Specific flight characteristics that might affect the onset of hypoxia (altitude, duration of time at that altitude).

It is also recommended that pilots review their knowledge of the following matters:

- Early symptoms of hypoxia (can be subtle and may include diminished mental capacity, rapid breathing, euphoria, slurred speech, headache, drowsiness, nausea or irritability)
- Actions during flight if hypoxia is suspected (use supplemental oxygen and return to a safe altitude).

Regulation 121.285 of CASR requires PICs and operators to ensure passengers are given a safety briefing and instructions in accordance with the requirements of the Part 121 MOS. Under paragraph 8.03(8)(h) of the Part 121 MOS, the passenger safety briefing and instructions must cover the location of supplemental oxygen equipment and how to use it when supplemented oxygen equipment is required to be carried. PICs and operators are recommended to consider whether, depending on the kind of oxygen equipment being carried, part of the passenger briefing needs to include hypoxia symptoms.

Supplemental oxygen – In flight monitoring

The onset of hypoxia can be very insidious, even for pilots that have conducted specific hypoxia symptom awareness training. During flight, it is recommended that the pilots regularly check:

- for early symptoms of hypoxia (subtle changes of crew or passengers in diminishing mental capacity and/or behavioural change including rapid breathing, euphoria, slurred speech, headache, drowsiness, nausea and irritability)
- if in an unpressurized aircraft:
  - pilot oxygen saturation levels by using a finger mounted pulse oximeter or similar device that can measure oxygen saturation levels (typically 100% oxygen saturation is normal at sea level, 95% is considered a minimum and below 90% is where people usually experience hypoxia)
  - the time spent at higher altitudes (For example above 8000 feet – especially if the flight was not originally planned to be flown at higher altitudes but this has ended up happening).
- if in a pressurized aircraft – the cabin pressure altitude to ensure continued proper functioning of the pressurisation system
- if supplemental oxygen is being used – the quantity of oxygen remaining at regular periods of its use.

Figure 3: Electronic oximeter devices available for personal use

Supplemental oxygen – suspected hypoxia

If hypoxia is suspected, the PIC should immediately:

- Lower the cabin altitude (descend and/or adjust pressurisation)
- Use supplemental oxygen, if available.

Lack of oxygen affects people differently and some people are more sensitive to hypoxia. Any delay can lead to an inability to recognise or react to the danger of hypoxia. Act immediately if hypoxia is suspected.

The supplemental oxygen requirements and usage rules in sections 11.40 and 11.41 of the Part 121 MOS do not prevent the use of supplemental oxygen at lower altitudes if hypoxia is suspected.

Section 11.40 of the Part 121 Manual of Standards – Supplemental oxygen information in relation to pressurised aeroplanes

Where there is a requirement for a quantity of oxygen equivalent to 30 minutes, the general purpose of this time period is that it allows for a constant rate of descent from the aeroplane's maximum certified operating altitude to 10 000 ft in 10 minutes followed by 20 minutes at 10 000 ft.

Where there is a requirement for a quantity of oxygen equivalent to 2 hours, the general purpose of this time period is that it allows for a constant rate of descent from the aeroplane's maximum certified operating altitude to 10 000 ft in 10 minutes followed by 110 minutes at 10 000 ft.

Where there is a requirement for a quantity of oxygen for passengers that is equivalent to the period when the cabin pressure altitude is above 15 000 ft, the general purpose of this is to provide for a constant rate of descent from the aeroplane's maximum certified operating altitude to 15 000 ft in 10 minutes followed by 110 minutes at 10 000 ft.

Supplemental oxygen for cabin crew

Supplemental oxygen is provided for cabin crew to help ensure they retain consciousness during an emergency descent following a loss of pressurisation, thus enabling them to provide assistance to passengers (such as the application of first aid oxygen once a safe level is reached and the aeroplane stabilises after the emergency). Operator procedures should consider the different hazards cabin crew are exposed to during an emergency and how different cabin crew actions should be prioritised. Examples of the kinds of actions requiring prioritisation might be securing themselves and other movable items in their immediate vicinity, providing directions to passengers and when to access supplemental oxygen.

Note: It is not envisaged that cabin crew will always be able to provide assistance to passengers during emergency descent procedures which may be required in the event of loss of pressurisation.

Section 11.46 of the Part 121 Manual of Standards – First-aid oxygen

First-aid oxygen is intended for those passengers who still need to breathe oxygen when the amount of supplemental oxygen required under Chapter 11 of the Part 121 MOS has been exhausted. When calculating the amount of first-aid oxygen, the operator should take into

account the fact that, following a cabin depressurisation, supplemental oxygen as calculated in accordance with Chapter 11 of the Part 121 MOS should be sufficient to cope with the potential effects of hypoxia.

The amount of first-aid oxygen should be calculated for the part of the flight after cabin depressurisation and during which the cabin altitude is between 8 000 ft and 15 000 ft, when supplemental oxygen may no longer be available. Normal operational practice following a cabin depressurisation would be to conduct an emergency descent to the lowest altitude compatible with the safety of the flight. Normally this would also involve the aeroplane landing at the earliest opportunity at the first available aerodrome. If an operator has procedures in place similar to these for crew decision making in an emergency, then this may reduce the amount of first-aid oxygen required to be carried.

Emergency locator transmitters (Division 10 of Chapter 11 of the Part 121 MOS)

Emergency locator transmitters (ELT) are an essential tool for emergency situations and are required to be fitted to or carried on Australian aircraft under some circumstances.

The Australian Maritime Safety Authority (AMSA), via JRCC Australia, is responsible for co-ordinating search and rescue within Australian territory and maintaining Australia's national beacon registration system. When a distress beacon is registered, JRCC Australia can quickly investigate critical contact information and determine if assistance is needed. An ELT required to be fitted to or carried on an Australian aircraft must be registered.

Pilots and operators can fit or carry ELTs even when not required under the civil aviation legislation.

The process of registering a distress beacon is relatively simple and is free. It is crucial to keep the registration details up to date, especially whenever contact details or emergency contacts change. Registering the distress beacon helps to ensure a more efficient and effective rescue operation in the event of an emergency.

Ensure the distress beacons are working correctly by following manufacturers and TSO maintenance requirements, specifically battery replacements.

See Multi-Part AC 91-30, 121-12, 133-03 and 135-14 and www.amsa.gov.au/beacons for more details.

Section 11.52 of the Part 121 Manual of Standards – Hand-held fire extinguishers

The MOS requires that "at least" a certain number of extinguishers be fitted, and contains some outcome-based requirements relating to the extinguishing agent type and quantity.

In determining whether additional extinguishers are required, beyond the absolute regulatory minimum, it is recommended that operators consider the following matters:

- the number and size of the passenger compartments
- the location of galleys, cargo or baggage compartments
- whether each extinguisher is located and installed to be readily accessible for use by crew and/or passengers
- whether the location is clearly evident to persons who may be required to use it

- whether the extinguisher is located in an environment, and mounted in an attitude, that complies with the manufacturer's recommendations
- whether an extinguisher is mounted in a position which might lead to accidental discharge or restrict access to other equipment
- whether additional hand-held fire extinguishers may be required for the protection of other compartments accessible to the flight crew in flight.

Note: These considerations may result in a number of hand-held fire extinguishers greater than the minimum required.

Unless a specific location is required by section 11.52 of the Part 121 MOS, hand-held fire extinguishers are not necessarily exclusive to particular locations. If the location of a galley, cargo/baggage compartment or passenger compartment coincides with each other, and have common agent applicability, the various requirements may be considered common.

Where only one hand-held fire extinguisher is carried in the passenger compartments, it is recommended that this extinguisher be located near a cabin crew member's station. Where two or more hand-held fire extinguishers are required in the passenger compartments it is recommended that an extinguisher is located near each end of the cabin with the remainder distributed throughout the cabin as evenly as is practicable.

If a hand-held fire extinguisher is not clearly visible, consideration should be given to a placard or sign with appropriate symbols to indicate the location.

In relation to the types of fire extinguishers carried, it is recommended that:

- where 2 or more extinguishers are required in the passenger compartment, at least 2 contain Halon 1211 (BCF) or a CASA accepted equivalent
- extinguishers located in the pilot compartment are suitable for fighting both flammable fluid and electrical fires
- dry chemical or water-based extinguishers are not used in the pilot compartment or any compartment not separated by a partition from the pilot compartment
- water based extinguishers are not located in the passenger compartment of aircraft which do not carry a cabin crew member.

Additional information is contained in the following Airworthiness bulletin: AWB Airframes 26 - Fire Protection for further information on fire protection.

Section 11.53 of the Part 121 Manual of Standards – first-aid kits

This section specifies how many first-aid kits must be carried, under what circumstances the number of kits could be reduced from the normal requirements, and minimum requirements for the kits.

In relation to the requirement for a first-aid kit to contain sufficient supplies for the number of persons to be carried on a flight, the kit should be equipped with appropriate and sufficient medication and instrumentation and be suitable to the operation. The following list of items that may be included in a first-aid kit is provided only as a guide, and operators should select items based on their own operational needs (scope of operation, flight duration, number and demographics of passengers, etc.):

- bandages (assorted sizes)

- burns dressings
- wound dressings (large and small)
- adhesive dressings (assorted sizes)
- adhesive tape
- adhesive wound closures
- safety pins
- safety scissors
- antiseptic wound cleaner
- resuscitation kit
- disposable gloves
- tweezers (for splinters), and
- thermometers (non-mercury)
- medications:
  - simple analgesic (may include liquid form)
  - antiemetic
  - nasal decongestant
  - gastrointestinal antacid
  - anti-diarrhoeal medication
  - antihistamine.
- other items:
  - a list of contents, this should include information on the effects and side effects of medications carried
  - first-aid handbook.
  - medical incident report form.

Section 11.54 of the Part 121 Manual of Standards – emergency medical kits

This section specifies when an emergency medical kit must be carried.

The following list of items that may be included in an emergency medical kit is provided as a guide only, and operators should select items based on their own operational needs (scope of operation, flight duration, number and demographics of passengers, etc.).

Operators carrying large numbers of passengers on long duration sectors might also consider, on the basis of a risk assessment, whether to carry automated external defibrillators (AED) as these can offer an effective treatment for cardiac fibrillation.

Equipment

- sphygmomanometer (non-mercury)
- stethoscope
- syringes and needles
- intravenous (IV) cannulae (if intravenous fluids are carried in the first-aid kit, a sufficient supply of intravenous cannulae should be stored there as well)
- oropharyngeal airways (three sizes)
- tourniquet

- disposable gloves
- needle disposal box
- one or more urinary catheter(s), appropriate for either sex, and anaesthetic gel
- basic delivery kit
- bag-valve masks (masks in two sizes: one for adults, one for children)
- intubation set
- aspirator
- blood glucose testing equipment
- scalpel.

Instructions

The instructions should contain a list of contents (medications in both trade names and generic names), including information on the effects and side effects of the medications carried. There should also be basic instructions for use of the medications in the kit and advanced cardiac life support (ACLS) cards (summarising and depicting the current algorithm for advanced cardiac life support).

Medications

- coronary vasodilator (e.g., glyceril trinitrate-oral)
- antispasmodic
- epinephrine/adrenaline 1:1,000 (if a cardiac monitor is carried)*
- adrenocorticoid - injectable
- major analgesic
- diuretic - injectable
- antihistamine - oral and injectable
- sedative/anticonvulsant - injectable, rectal and oral sedative
- medication for hypoglycaemia (e.g. hypertonic glucose)
- antiemetic
- atropine - injectable
- bronchial dilator - injectable or inhaled
- IV fluids in appropriate quantity (e.g. sodium chloride 0.9%, minimum 250 ml)
- acetylsalicylic acid 300 mg - oral and/or injectable
- antiarrhythmic - if a cardiac monitor is carried
- antihypertensive medication
- beta-blocker - oral.

* epinephrine/adrenaline 1:10,000 can be a dilution of epinephrine 1:1,000.

Section 11.55 of the Part 121 Manual of Standards – universal precaution kits

This section specifies how many universal precaution kits must be carried and under what circumstances the number of kits could be reduced from the normal requirements.

The following list of items that may be included in a universal precaution kit is provided as a guide only, and operators should select items based on their own operational needs (scope of operation, flight duration, number and demographics of passengers, etc.):

- dry powder that can convert a small liquid spill into a sterile granulated gel
- germicidal disinfectant for surface cleaning
- skin wipes
- face/eye mask (separate or combined)
- gloves (disposable)
- protective apron
- large absorbent towel
- pick-up scoop with scraper
- bio-hazard disposal waste bag
- instructions.

Section 11.60 of the Part 121 Manual of Standards – Life jacket stowage

Regardless of the location of stowed lifejackets or method of distribution, the operator should establish procedures that are practicable and take into consideration the sum of tasks expected of cabin crew members in a ditching. Operators must also ensure the procedures and crew training are appropriate and address the different types of emergencies involving water contact. For example:

- anticipated ditching - a planned event in which flight crew knowingly make an emergency landing on water and cabin crew have some time to prepare the cabin and passengers
- unanticipated ditching - cabin crew may receive a last-minute notification from the flight crew that they will execute a landing on water, but there is insufficient time to prepare the cabin and passengers
- inadvertent water contact – unplanned event in which flight crew do not intentionally make an emergency landing on water e.g., runway excursion or a runway undershoot or overshoot, and there is no opportunity to prepare the cabin and passengers.

Permanent installation

Infant and additional lifejackets may be permanently installed in similar positions to adult/child lifejackets, that are easily accessible to the seated occupant responsible for retrieving and fitting the lifejacket. Operators will need to consider permanent stowage locations and availability of lifejackets when designing their passenger acceptance and seat allocation procedures.

Permanent installation of lifejackets may not be possible where there are significant variations in operational conditions that impact the operator’s ability to have standardised locations for permanently installed infant and additional life jackets across its fleet.

Bulk stowage of lifejackets

Where permanent installation of infant and additional life jackets does not occur within reach of the responsible person (i.e., at or around the seat), operators must establish procedures for the distribution of the lifejackets. In this case, common practice includes the establishment of a bulk life jacket stowage location.

When determining the location(s) for bulk stowage, some factors that operators may wish to consider are:

- Useable/preferred exits when evacuating on water – infant and additional lifejackets stowage being in locations near usable exits or along the egress path passengers and crew members would use to evacuate the aircraft.
- Size of the cabin – depending on the aircraft and cabin configuration, a single centralised location for bulk stowage may not be appropriate and multiple stowage locations, distributed throughout the cabin and on different decks, if applicable, could facilitate better and quicker access by crew members to the lifejackets.
- Number and type of lifejackets stowed together – where multiple bulk stowage locations are assigned, consider whether there are sufficient numbers and type of lifejackets available in each location, commensurate with the number of passenger seats in the vicinity.
- Accessibility – as the lifejackets will need to be distributed by crew members during an emergency, consider ensuring there is unobstructed access to the lifejackets and that the designated stowage location(s) is indicated by a clearly visible placard.

8 Subpart 121.N – Flight crew

There are exemptions in force in relation to the training and checking of flight crew members. These exemptions apply to certain operators. It is recommended that operators review Parts 6, 7 and 7A of CASA EX87/21. The approvals mentioned in the Parts of this exemption are taken to be significant changes due to them activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

There is a Part 11 direction in force in relation to crew members carrying out audits, checks, examinations etc. Operators and pilots are advised to review section 9 of CASA EX81/21.

There are exemptions in force in relation to multiple regulations in this Subpart and the use of a person employed by the foreign equivalent of a Part 142 organisation to conduct Part 121 proficiency checks and Part 121 conversion training. It is recommended that operators review sections 14E and 14F of CASA EX83/21.

8.1 Division 121.N.1 – General

GM Division 121.N.1 - General

Note: The reader should be aware of the use of the terms 'initial training' and 'conversion training' throughout Subpart 121.N and 121.P, and the potential for these terms to generate confusion due to the historical connotations of 'conversion training'.

The following general guidance is provided:

- Initial training is effectively 'induction training' or 'indoctrination training', where a new crew member is introduced to the operator's exposition.
- The minimum requirements for initial training are contained in Division 2 of Chapter 12 of the Part 121 MOS. This training is to provide an insight to the operator's procedures, both normal and abnormal, as well as general survival skills and first aid. This is an ideal opportunity for the operator to expose the new crew member to their operating environment and to instil in the crew member their responsibilities in maintaining a safe and professional work ethic. The initial training ground school should be designed to prepare the flight crew to enter the conversion training program.
- Conversion training (also known as transition training) takes place when a crew member first joins the company or changes aeroplane type. Conversion training will normally follow the initial training, although the two training programs may be integrated into a single program in the operator exposition. For pilots, type rating training must be conducted by an operator holding a Part 141 or Part 142 authorisation. If the Part 121 operator holds a Part 141 or Part 142 authorisation to conduct type rating training, then it is acceptable to integrate the initial and conversion training to be conducted concurrently with the type rating. Conversion training will include safety and emergency equipment, a proficiency check, line flying under supervision and finally a line check. During the training, the crew member should also be exposed to training in the operator's human factors and non-technical skills (HF/NTS).

GM 121.470 Additional application of this Subpart

This regulation allows an operator to nominate non-air transport operation flights that may be conducted for the operator, to be conducted under Subpart 121.N. For example, ferry flights, charitable flights (non-revenue) and other non-revenue flights for the operator.

The intention is that flight crew who meet the requirements of this Subpart will be qualified to perform these other flights for the operator in the type of aeroplane even though the operation may not otherwise be captured by the applicability of Part 121.

This makes it clear that if an operator's training and checking system is approved under Part 61 to substitute for certain Part 61 requirements, then that training and checking system remains valid even when conducting non-Part 121 operations, i.e. flights that are not passenger transport operations, cargo transport operations or medical transport operations.

AMC 121.475 Composition, number, qualifications and training

Subregulation 121.475(4) – requirement to obtain an approval under regulation 121.010 to conduct training or checking involving safety and emergency equipment

GM 121.475 outlines the regulatory provisions that allow CASA to test an applicant for this approval.

The information in this section outlines an acceptable means of compliance regarding the requirements whereby CASA may accept the results of a test conducted by a senior instructor (i.e. a person other than CASA) as being suitable for consideration of issuing an applicant an approval under regulation 121.010 as required by subregulation 121.475(4).

The requirements of this AMC are that:

- the operator's training and checking system must include an additional course of training for persons to become "Senior Safety and Emergency Equipment Instructors" (or similar name)

Note: These senior instructors would be the persons that test an individual seeking the relevant approval. CASA remains responsible for assessing the application and issuing the approval. The presence of the senior instructors, with a defined course of training to develop and qualify these persons, provides assurance to CASA regarding the suitability of the applicant for the approval.

- the operator's processes will clearly track when the senior instructor was last assessed by CASA with a preference to only use instructors who have been observed by CASA in the last 2years.
- any non-significant change to the course of training will be notified to CASA prior to the operator commencing use of the amended course.

Note: A significant change requires approval prior to implementation. For a non-significant change, the operator will receive an acknowledgement that CASA has received the revised material.

GM 121.475 Composition, number, qualifications and training

There are two exemptions in force in relation to this regulation. The first exemption corrects a cross-referencing error where the reference to regulation 121.490 in paragraph 121.475(2)(f) should be a reference to regulation 121.505, and the second exemption puts in place an approval mechanism for operators to use alternative training and checking requirements for some elements of Subpart 121.N and Chapter 12 of the Part 121 MOS. It is recommended that operators review section 12 of CASA EX83/21. The approval mentioned in section 12 is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required by subregulation 121.475(4) in relation to persons approved to conduct training or checking involving safety or emergency equipment to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

This regulation sets out requirements for the crew composition in order to conduct a Part 121 operation.

The operator is required to ensure that:

- as a minimum, the crew consists of two pilots who meet the qualification requirements of the regulations and at least one of whom is qualified to operate as PIC
- the total crew complement meets both the regulatory, manufacturer and company requirements
- they have specifically nominated who is to be the PIC
- all crew meet the requirements for the following:
  - route knowledge
  - recency
  - initial training
  - conversion training
  - recurrent training
  - differences training (if applicable)
- all training has been completed by persons qualified under the regulations for that purpose.

Training or checking involving safety or emergency equipment

Subregulation 121.475 (4) requires a person conducting training or checking involving safety or emergency equipment to hold an approval. The processes associated with the training, nomination and ongoing competency of the approved person in conducting the training and checking functions, will be set out in the operator's exposition.

Operators are reminded that CASA inspectors do not hold this approval and cannot sign off on the competency of crew members conducting this training or checking. CASA staff are

limited to assessing the competency of the person seeking to hold this approval, or persons already holding the approval.

When evaluating an application for approval of a person to conduct training or checking involving safety or emergency equipment, CASA will appropriately consider the matters mentioned in regulations 11.050 and 11.055. As guidance, CASA's consideration is likely to include a review of the following things in relation to the applicant:

- their qualifications and experience, including any existing instructional and assessment competencies
- the training they have undertaken for the role
- their knowledge and understanding of applicable legislation
- their knowledge of the operator's safety and emergency equipment and procedures.

All applicants seeking approval under regulation 121.010 should be aware that regulation 11.035 permits CASA to require the applicant to undertake a test of knowledge, skill or competence. Where this is required, CASA must give written notice to the individual. Such an assessment is likely to include direct observation of the applicant conducting the relevant training or check activity.

Refer to AMC 121.475 for details of where CASA may elect to accept the results of a test conducted by a person other than CASA.

The suitability of an applicant will also depend on the suitability of the operator's training and checking system procedures for how a person is trained and assessed as being competent to perform a training or checking role for the operator. Some matters (but not all) that CASA might consider when reviewing the suitability of the operator's procedures in this area include:

- the organisational structure and methods of identifying the persons responsible for internal training and assessment of trainers and checkers within that structure
- the proficiency of the operator's other trainers and checkers in assessing the competence of persons to conduct training and checking involving safety or emergency equipment
- the operator's process for verifying ongoing competency of persons holding an approval
- the operator's process for ensuring standardisation if multiple training or checking personnel are used.

GM 121.480 Experience

There is an exemption in force in relation to this regulation. It is recommended that operators review sections 28 and 29 of CASA EX83/21. The approval mentioned in section 28 is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

It is important to read this regulation in conjunction with the operation of:

- paragraphs 121.475 (2) (b) and (c); and
- the definition of *kind*, of an aircraft (found in the CASR Dictionary); and

- the definitions of *type*, for an aircraft (found in the CASR Dictionary).

Paragraph 121.475 (2) (b) requires a Part 121 operation to be conducted with a minimum of 2 pilots. Paragraph 121.475 (2) (c) only requires that one flight crew member complies with the requirements of regulation 121.480 (although it does not preclude both from complying).

The definition of *kind* is:

> *kind*, of an aircraft, means:
>
> (a) for an aircraft that is covered by an aircraft type rating—the aircraft type rating; and
> (b) for an aircraft that is not covered by an aircraft type rating—the type of aircraft.

The definition of *type*, with the aspects of the definition that are not relevant to aircraft operations removed, is:

> *type*, for an aircraft, means a design and make of aircraft and, where appropriate, refers to a group of essentially similar aircraft which, although possibly existing in different models, stem from a common basic design.

The intended safety outcome of these 3 rules in combination is to avoid the situation where an entire flight crew, of a particular kind of aeroplane (for Part 121 operations this most often means an aeroplane or a group of aeroplanes under a type rating), are simultaneously ‘inexperienced’ when conducting operations. That is, where not even 1 of the flight crew meets the experience requirements in regulation 121.480.

When considering whether or not a particular flight crew member has met the hours and sector requirements of the regulation (i.e. they are now ‘experienced’), the regulation requires these hours to have been gained during supervised line operations, while undertaking PICUS or when a PIC was previously a First Officer or Cruise Relief First Officer – provided that it was on the same kind of aeroplane (noting that multiple aeroplane types might be of 1 kind since they are under a common type rating) and were gained during ‘line operations’.

The term 'line operations' specifically refers to flight operations conducted under the operator's Part 121 authorisation.

Hours gained during a type rating course do not replicate the line operations environment and are not suitable to be included for the purpose of line operations experience.

The operator should consider any operational restrictions to be placed on an 'inexperienced' crew member after the completion of the conversion training or post command line check. These considerations may include cross wind limits, aerodrome limits and weather minima limits if the operator assesses these limits as suitable for their operation.

Paragraph 121.480 (3) (b) permits an operator to apply for approval under regulation 121.010 for the hours and sector requirements to be varied in determining when a crew member is considered to be experienced. Subregulation 121.480 (4) of CASRstates that CASA may grant the approval mentioned in paragraph 121.480 (3) (b) only if it is satisfied that there are special circumstances in relation to the operator’s operation that justify the grant of the approval. In preparing their application for approval, the operator should explain

how their proposal would maintain a level of aviation safety acceptable in the special circumstances. CASA considers the following to be special circumstances:

- a new operator is commencing operations
- an existing operator introduces a new aeroplane type into service .
- Another example that may be taken to be special circumstances could occur when an operator (A) acquires the aeroplanes and flight crew of operator (B) to continue operator Bs route structure under operator A's AOC. Where the operations are essentially unchanged from the prior operator's procedures, it may be appropriate for the relevant changes to be articulated as the special circumstances to be considered for relief against the requirements of subsection 121.480(3).

In determining whether the proposed experience would maintain an acceptable level of aviation safety in a special circumstance, operators might elect to restriction the operations of the relevant crew members or require relevant crew members to conduct supplementary training in simulators. The matters in the following list are examples, and do not represent suggestions or recommendations:

- restrict flight crew to certain operating ports until they meet the standard experience level required by regulation 121.480
- require the pilots not meeting the normal experience requirements to have substantial experience on a similar type of aeroplane
- require the pilots not meeting the normal experience requirements to have substantial experience on type in operations authorised by a foreign NAA that would be considered similar to Part 121
- implement a simulator-based program with specific focus on Line Orientated Flight Training and Evaluation sequences. This simulator program would then be combined with a lower number of aircraft hours.

All approvals granted by CASA under this regulation are subject to the procedural requirements of Part 11 which allow for additional information to be requested and if required demonstration of how the alternative proposal may operate.

GM 121.485 Competence

Regulation 121.485 provides that an operator must have assessed the crew member as being competent to perform the duties assigned to them. These regulations are not meant to be a one-size-fits-all set of regulations and it is imperative that operators formulate their own specific set of equal or better standards after thorough assessment of their operational characteristics. Appropriate use of Training Needs Analysis with input from the SMS will be crucial in this development. Operations identified by the SMS as having a higher degree of difficulty may require higher training or checking standards than set out in these regulations.

As competence is a combination of related attributes including knowledge and skill, it is important that the operator's system for training and determining competency accounts for both. Knowledge refers to theoretical information acquired about a subject whereas skills refer to practical application of that knowledge. Knowledge can be learned whereas skills require practical exposure i.e., knowing does not make you skilled.

Both knowledge and skills decay over time. The degree of decay varies with time, but some decay could be present as soon as 2-6 weeks after training. The timeframe and extent of decay is influenced by factors such as the type of knowledge/skill, complexity of the subject matter, strategies for slowing decay (e.g., practice) and the effectiveness of the provided training (e.g. delivery method, regularity of assessments).

The regulations provide baseline timeframes for the programming of recurrent and refresher training. Competency-based training should be guided by empirical data to ensure maintenance of skills and knowledge throughout the retention interval. The operator should employ the SMS in this regard to verify the appropriateness of the timeframes implemented in ensuring ongoing competency of their flight crew and adjust as necessary.

Procedures should also be incorporated into the training and checking system for flight crew who fail to maintain an adequate standard of competency in their duties. Regulations cannot prescribe the remedial training required as it will vary on a case-by-case basis but an operator should take reasonable steps to bring the flight crew member back to a suitable level of competency.

AMC 121.490 Assignment to duty as pilot in command

It is an acceptable means of compliance with this regulation if the crew member roster, published crew list and crew declaration forms for the flight clearly identify which member of the crew is assigned as PIC.

GM 121.490 Assignment to duty as pilot in command

The operator's exposition should identify how the assignment of a flight crew member to duty as the PIC is promulgated. Depending on the size scope and complexity of the operation, this may be as simple as a manual tracking tool such as a white board detailing each crew members qualification through to an automated software based rostering system and qualification tracking system that ensures flight crew are qualified for a flight.

When determining whether a manual tracking system is suitable for an operator, CASA will consider the number of flight crew employed and number of different activities conducted by the operator. Generally, 10 flight crew across a simple operation that does not involve multiple would be considered suitable for using a manual tracking tool.

In the case of complex operators with more than 10 flight crew or multiple types there are multiple software programs designed to manage flight crew rostering available. When determining whether an operator's implementation of a program is suitable, CASA will check that the software is:

- tailored to the operators' requirements
- able to flag a flight crew member approaching and or exceeding a defined qualification or a recency requirement
- able to prevent an unqualified flight crew member being rostered for a duty.

GM 121.495 Pilot in command

The regulation requires that for an individual to be qualified as PIC they must have:

- the experience requirements specified in the exposition
- successfully completed a command training course
- an authorisation to act as PIC.

In developing the exposition, the operator must consider all aircraft types that it will operate under Part 121.

This regulation mentions that if an aeroplane is a foreign registered aircraft, then the pilot in command must be authorised to pilot the aeroplane during the flight as pilot in command by the aeroplane's State of registry. In some cases, foreign regulators may permit a pilot licensed by another regulator to fulfil their role in the foreign registered aircraft without needing to hold a licence from the State of registry foreign regulator. Multiple different mechanisms may permit this outcome, ranging from a direct statement in a rule or regulation, to an MOU between two different regulators, to a formal ICAO *83 bis agreement.* It is incumbent on the operator, if contemplating the use of foreign registered aeroplanes, to familiarise themselves with any requirements arising from the foreign State of registry.

GM 121.500 Co-pilots

The regulation requires that for an individual to be qualified as co-pilot they must have:

- completed the supervised line flying requirements applicable to a co-pilot in the operator exposition
- an authorisation that permits conduct of duties as a co-pilot.

In considering the supervised line flying component, ideally this should be conducted over as many of the routes/areas that the co-pilot will be expected to operate on as practicable. It is recognised that in some organisations it will not be possible to cover all routes/areas due to the size/nature of the authorised operations.

If a FCM who normally operates as PIC in the left seat is required to perform duties as a co-pilot in the right-hand seat, then then operators will need to consider the Part 121 MOS proficiency check requirements for 'Pilots who may conduct operations from both pilot seats'.

GM 121.505 Cruise relief co-pilots

The regulation requires that for an individual to be qualified as cruise relief co-pilot they must have:

- completed the supervised line flying requirements applicable to a cruise relief co-pilot in the operator exposition
- an authorisation that permits conduct of duties as a cruise relief co-pilot.

A pilot who is qualified as PIC or co-pilot is also qualified to act as cruise relief co-pilot.

Relief of the co-pilot may be achieved by another flight crew member who is qualified as a: PIC; co-pilot; or, for flight above FL200, the holder of a cruise relief co-pilot type rating.

Cruise relief co-pilots may act as pilot flying (PF) or pilot monitoring (PM). It is essential in all operations that the chain of command is well established regarding relief flight crew, and to ensure that the duties of those crew members are well understood.

GM 121.510 Use of approved simulators for training and checking

The effects of this regulation are dependent on the definitions of *approved flight simulator* and *recognised foreign state*. CASA advises that, currently simulator qualification certificates issued by EASA are **NOT** defined as being issued by a recognised foreign State. These definitions can be found in regulation 61.010. The definition of *approved flight simulator* is repeated below.

> *approved flight simulator*: a flight simulator is an approved flight simulator for a purpose if:
>
> – a Part 141 operator's operations manual, or a Part 142 operator's exposition, states that the simulator may be used for the purpose; or
> – the operator of the simulator holds an approval under regulation 60.055 to use the simulator for the purpose; or
> – the simulator is:
> o qualified (however described) by the national aviation authority of a recognised foreign State; and
> o approved for the purpose by the national aviation authority.

A Part 121 operator intending to use a simulator not qualified by Australia under Part 60 of CASR is advised that this regulation currently requires such a simulator to be both qualified by a recognised foreign State and located in a recognised foreign State.

A Part 121 operator intending to use a simulator qualified under Part 60 of CASR, as opposed to a simulator qualified by a foreign country, are required to apply for an obtain an approval under regulation 60.055 of CASR (referred to as a user approval, which is different to a simulator qualification approval or certificate). Operators are advised to refer to AC 60-02 - Flight simulator approvals for guidance on this approval.

Although an approval equivalent to the regulation 60.055 approval is not specifically required to use a simulator qualified by another country, operators can expect CASA will request information similar to that required to be provided for the regulation 60.055 approval from the operator during an initial AOC application or a later surveillance event.

In considering this regulation, it is worth noting that the requirements are based on the maximum certificated passenger seating capacity as per the relevant type certificate, not the MOPSC.

A number of regulations in the CASR specify requirements for the use of flight simulators:

- Regulation 61.205
  - Requires that an aircraft with a:
    - MTOW > 8618kg or with a maximum type certificated seating capacity > 19 to use a simulator for the training listed below if an approved flight simulator (definition further below) is available anywhere in the world

    - maximum type certificated seating capacity > 9 to use a simulator for the training listed below if an approved flight simulator (definition further below) is available in Australia
  - Listed training:
    - training for the grant of an aircraft class rating or type rating
    - differences training for a variant of an aircraft type in relation to training delivered to the holder of a particular type rating
    - flight training for certain aircraft types within a class rating where those types are specified in an instrument authorised under regulation 61.062.
- Regulation 91.745:
  - for a multi-engine aeroplane that is type certificated to carry 10-19 passengers, an engine failure cannot be simulated (i.e. simplistically put – pulling back the power on the engine) in the aeroplane if there is a flight simulator for the aeroplane in Australia, unless the operator holds an approval from CASA to conduct a simulated engine failure in the aeroplane
  - for a multi-engine aeroplane that is type certificated to carry more than 19 passengers, an engine failure cannot be simulated in the aeroplane if there is a flight simulator for the aeroplane in Australia or approved by a recognised aviation authority in a foreign country for the aeroplane, unless the operator holds an approval from CASA to conduct a simulated engine failure in the aeroplane
- Regulation 121.510:
  - has similar caveats to regulation 91.745 regarding the location of a simulator and passenger seat capacity
  - the use of an approved flight simulator (defined term) is required for training or checking under Subpart 121.N if the training or checking involves a simulated engine or system failure that affects, or is likely to affect, the aeroplane's performance or handling characteristics.

Note: Regulation 121.580 requires the persons assessing the competency of pilots during Part 121 proficiency checks to meet certain requirements. Currently, this regulation would not permit the use of a foreign examiner. CASA intends to issue an exemption putting in place arrangements equivalent to the arrangements for the use of foreign examiners prior to 2 December 2021.

Example - business jet that is type certified for 19 passenger seats

If an approved flight simulator was not available in Australia for a business jet type certified for 19 seats, then regulation 121.510 would not apply. Similarly, regulation 91.745 would also not apply. Assuming regulation 61.205 was not triggered, then there is no legislative requirement, in relation to Subpart 121.N training or checking, for an operator to use a flight simulator. There is no legislative requirement for such an operator to gain the specific permission of CASA to use a specific overseas simulator.

However, it is recommended that operators utilise a simulator if one is available. If an operator elects to use a foreign simulator but is not required to do so by this regulation, the operator would still be required to meet the requirements specified in Division 3 of Chapter 13 of the Part 121 MOS in relation to training facilities or devices. The operator could expect that CASA will seek information regarding the adequacy of the simulator in relation to the training and checking purposes for which the operator proposes to use that device.

Additionally, for Part 121 proficiency checks, section 12.22 of the Part 121 MOS requires a Part 121 proficiency check for a pilot to be conducted in the aeroplane or an approved flight simulator.

However, since the Part 121 operator is the holder of an Australian air transport AOC and therefore required to comply with Part 119, the operator would need to satisfy paragraphs 119.170(2)(a), (d) and (e) of CASR in relation to its training and checking system. The exposition must describe the adequacy of its intended methods for complying with the training and checking requirements of Subpart 121.N. If an operator who held an AOC before 2 December 2021 changes its foreign simulator provider (or similar) after 2 December 2021 (the new rules commencement date), then the operator must apply its change management process and determine whether or not the change is a significant change.

AMC 121.515 Knowledge of routes and aerodromes

Regulation 121.515 requires an operator's exposition to include requirements relating to the knowledge that a pilot in command (PIC) for a particular flight must have of:

- the route of the flight; and
- the departure aerodrome and the planned destination aerodrome for the flight; and
- any alternate aerodrome required for the flight by the Part 121 alternate aerodrome requirements.

<u>AMC 1 - Applicable to all Part 121 operations</u>

Route/Area Competence

Route/Area competence training must include an overview of the following matters applicable to the specific route (including alternative routes between the departure and destination that might be used under variable circumstances [weather, restricted area activations, conflict zones etc]):

- terrain and minimum safe altitudes
- seasonal meteorological conditions
- meteorological, communication and air traffic facilities, services and procedures
- search and rescue procedures
- navigational facilities associated with the route along which the flight is to take place.

Aerodrome competence

All aerodromes to which an operator operates should be categorised in one of three categories. If the least demanding aerodromes are Category A, then Category B and C (however named) would be applied to progressively more demanding aerodromes. The exposition will specify the parameters that qualify an aerodrome to be considered Category A and then provide a list of those aerodromes categorised as B or C. An operator may incorporate SMS risk analysis procedures to assist in the categorisation of these aerodromes and for ongoing monitoring.

Category A Aerodromes

Category A aerodromes are aerodromes that satisfy all of the following requirements:

- an approved instrument approach procedure to more than one runway

- at least one runway with no performance-limited procedure for take-off and/or landing (e.g., due to obstacle clearance requirements etc.)
- where circling manoeuvres are permitted by the operator, published circling minima not higher than 1 000 ft above aerodrome level
- night operations capability.

There are no requirements for qualifications into Category A aerodromes other than general familiarisation.

Category B Aerodromes

A Category B aerodrome is an aerodrome that does not satisfy the Category A requirements or that requires extra considerations such as:

- non-standard approach aids and/or approach patterns
- unusual local weather conditions
- unusual characteristics or performance limitations
- any other relevant considerations including obstructions, physical layout, lighting, departures requiring high angles of bank (more than 15° bank between 200 ft and 400 ft, or more than 20° bank above 400 ft during the take-off) etc.

Prior to operating to or from a Category B aerodrome, the PIC must be briefed, or self-briefed by means of programmed instruction[18], on the Category B aerodrome(s) concerned and must certify that they have been appropriately briefed.

Annual renewal of this qualification may be achieved by the same briefing, operating to the aerodrome as a member of the flight crew or as an observer, or via a simulator exercise involving the aerodrome that uses a database appropriate to the aerodrome.

Category C Aerodromes

Category C aerodromes are aerodromes that require additional considerations to a Category B aerodrome, including aerodromes with steep angle approaches and approaches in high terrain areas.

Prior to operating to or from a Category C aerodrome, the PIC must be briefed by programmed instruction and visit the aerodrome as an observer or operate the aircraft under supervision by a trainer or checker (who holds a valid qualification for the aerodrome) or undertake instruction in an approved flight simulator that uses a database appropriate to the aerodrome.

Annual renewal of this qualification could be achieved by operating to the aerodrome as a member of the flight crew or as an observer, or via simulator exercise involving the aerodrome that uses a database appropriate to the aerodrome. If the 12-month validity period expires, renewal must be achieved by repeating the initial qualification.

<u>AMC 2 – Applicable to aeroplanes with MOPSC of 19 or less – Aerodromes infrequently or not previously visited</u>

For Category A and B aerodromes, this AMC is the same as AMC 1.

[18] Programmed instruction refers to scheduled training events, and excludes ad hoc instruction.

However, for Category C aerodromes it can be unreasonably resource intensive to comply with AMC 1 requirements. It is therefore an acceptable means of compliance if, prior to operating at a Category C aerodrome, the PIC must, as a minimum, be briefed by programmed instruction[18]. The aim of this instruction is to familiarise flight crew members with the approaches, terrain and airport layout. This instruction must include as many of the following methods as are reasonably available to the operator:

- flying the approaches for the aerodrome to a generic airport in a full motion simulator or making use of other CBT, such as Microsoft Flight Simulator; and
- using media such as Google Earth, YouTube, aerodrome and NAA websites; and
- using qualification and familiarisation packages available from data service providers such as Jeppesen; and
- using print media such as topographical maps and the aerodrome diagrams in the authorised aeronautical information.

Annual renewal of this qualification could be achieved by operating to the aerodrome as a member of the flight crew or as an observer, or via simulator exercise involving the aerodrome that uses a database appropriate to the aerodrome, or by completing the initial programmed instruction.

GM 121.515 Knowledge of route and aerodromes

Route and aerodrome knowledge for a flight is recommended to encompass the following matters:

- terrain and minimum safe altitudes
- relevant departure and arrival procedures
- seasonal meteorological conditions
- meteorological, communication and air traffic facilities, services and procedures
- navigational facilities associated with the route along which the flight is to take place
- search and rescue procedures.

Some common methods of obtaining and/or confirming that a pilot in command has the required knowledge are:

- self-briefing by the pilot in command (effectively a reliance on the PIC's ability to conceptualise the route and aerodromes based on that previous training and experience)
- programmed training delivery (pre-developed training that is either self-paced or delivered via some kind of instructor)
- a combination of either of the above with a dedicated determination of competency which could be either theoretical (i.e., a written or oral test of some kind) or practical (i.e. a specific flight test in an aircraft or simulator, or a flight where the PIC is in command under supervision, or a flight where the PIC is accompanied by a pilot experienced in the specific route or aerodrome).

It is up to the operator to determine whether or not the characteristics of a route or an aerodrome necessitate that a pilot in command demonstrate specific competencies for the

route or aerodrome. If a pilot in command was determined by an operator to require specific competencies, then the operator should also consider the following:

- how should the competency be determined
- by whom should the competency be determined
- whether the competency should be the subject of regular re-evaluation.

Within Australia, relevant information applicable to an intended flight might be obtained through the AIP-DAP, AIP-ERC, AIP-ERSA or AIP-WAC. Information could also be gained from services providers, provided the operator is satisfied with the source.

Outside Australian airspace, common methods of obtaining relevant information would be via the foreign equivalent of AIP-ERSA (i.e., the AD section of the foreign AIP) or a commercially provided product such as the Jeppesen Airways Manual or directly from a foreign Air Navigation Services Provider or foreign aerodrome.

A common method of providing the relevant knowledge to the PIC during a flight is the provision by the operator of a route guide for routinely visited destinations or routinely used routes or airspace volumes.

For operators who primarily conduct ad-hoc services to clients, depending on the variance in routes and destinations that are flown, the provision of route guides could be impractical. In these cases, the operator might choose to develop a kind of checklist that identifies the kinds of information a flight crew should acquire during the planning phase of a task to ensure that fundamental safety risks are sufficiently ameliorated.

Operators might also consider including in their exposition a catalogue of aerodromes showing, in diagrammatic form, the items in the list below. Note that operators might decide to include more than what is in this list depending upon their operational circumstances:

- location by co-ordinates or in reference to prominent geographic features or nearest navigation aid (including a general view of the aerodrome and the surrounding terrain)
- communication/navigation/automatic lighting frequencies/facilities
- aerodrome time zone
- elevation above sea level
- direction of runways
- length and width of runways
- nature and slope (if any) of the surfaces
- tarmac or parking area
- hazards in the area (such as physical obstacles, persistent turbulence, known animal or insect activity, visual or radio limitations etc)
- the approach to each runway used by the operator’s aircraft
- the usual method of instrument or visual approach if there are abnormal features or irregularities in that approach
- any restrictions or specific conditions relating to the use of a particular aerodrome and the name, and method, of contacting the owner or controlling authority.

8.2 Division 121.N.2 — Operation of aeroplanes of different type ratings

GM 121.520 Application of Division 121.N.2

The intent of this division is to ensure that when a crew member is flying multiple types of aeroplanes, the operator has measures in place to ensure the crew member maintains their competence to perform their duties.

Additional guidance material of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit can be found in FAA Advisory Circular AC 120-53B and in the EASA OSD ─ Common Procedures Document available on the EASA website. Guidance for specific aeroplane types or variants can be found in evaluation reports prepared by the Flight Standardisation Boards of the FAA, Transport Canada, and in the reports by the Operational Evaluation Board on the EASA website.

GM 121.525 Assignment of flight crew to aeroplanes of different type ratings

Reserved

GM 121.530 Credit for checks, qualifications, training and experience

In considering the requirements of this regulation, an example of this would be in business/corporate jet operations, where the level of technology, operational procedures and handling characteristics could be very similar between two different types of aeroplanes. In some cases, this may also be applied between aircraft from different manufacturers that have similar equipment.

In evaluating any application for an approval under regulation 121.010, CASA may require additional training when giving the credits for two different types. In some circumstances this can be achieved by the conduct of ground-based instruction on any differences for one type when completing a proficiency check on the other type.

Where credits are approved for the relevant types or variant, this must be reflected in the operator's exposition material applicable to the training and checking system.

In some cases, credits may be approved for operator proficiency checks to alternate between types; in this case each operator proficiency check will revalidate the operator proficiency check for the other type(s).

When credits are approved for line checks to alternate between types, each line check will revalidate the line check for the other type.

8.3 Division 121.N.3 — Relief

GM 121.535 Relief of pilot in command

There is an exemption in force in relation to this regulation which has interlinkages to the exemption related to regulation 121.480. It is recommended that operators review section 14G of CASA EX83/21.

The relief pilot in command (RPIC) may be another qualified PIC or, for flight above FL200, a co-pilot with the appropriate experience and training for the role as mentioned in subregulation 121.535 (4). The RPIC will be second in command when more than two pilots are carried.

The RPIC (not command qualified) should be introduced to command principles such as communication, workload management, error prevention and detection, decision making and other human factors and non-technical skills. It should not be assumed a senior co-pilot will have these skills, so it is essential that the operator provide the necessary training and a check of competency in this role. This would normally comprise theory material combined with a simulator check for abnormal and emergency procedures, and a line check in the aircraft.

During the RPIC's recurrent training and checking, drills and procedures that would otherwise be the responsibility of the PIC (if any) should be performed to the appropriate standard to maintain the ongoing competency required for relief command duties. In some cases, aircraft checklists will not specify a drill for just the PIC; however, the command decision making skills in dealing with an emergency and the subsequent operational decisions should be assessed by the operator.

A pilot who only holds a cruise relief co-pilot authorisation cannot perform the duties of RPIC.

8.4 Division 121.N.4 — Recent experience

GM 121.540 Pilot in command and co-pilot—recent experience requirements

Applicability

This regulation requires that the operator does not assign a PIC or a co-pilot to duty for the flight of an aeroplane unless they meet the recent experience requirements in this regulation.

This regulation also requires that a pilot does not operate an aeroplane for a flight as the PIC or as a co-pilot unless they meet the recent experience requirements in this regulation.

The regulation does not apply to the holder of a cruise relief co-pilot type rating that is assigned to duty as a cruise relief co-pilot, see regulation 121.545 of CASR for recent experience requirements for those pilots.

It is worth noting that the recent experience requirements prescribed by this regulation are in addition to the competency and experience requirements relating to exercising the privileges of licences and ratings prescribed inv Part 61 of CASR, as an example regulation 61.395 of CASR. However, an operator with a training and checking system may elect to gain a

regulation 61.040 approval to effectively alter the requirements of subregulation 61.395(1) for their pilots during the conduct of their operations (see section 7 of Multi-Part AC 119-11 and 138-02 for more information on 61.040 approvals and training and checking systems).

Recent experience requirements - prescriptive elements

The prescriptive requirements are essentially a means within Part 121 of CASR to set out what is collectively understood to be the level of recent experience in respect of take-offs and landings that would, in the context of other factors embedded in the Part 121 rules, provide assurance of pilot competence to the minimum acceptable level of safety performance.

The prescriptive elements of this regulation make clear that the baseline recent experience requirements are satisfied when, within the 90 days before the flight, the pilot has carried out, in an aeroplane of that kind, 3 take-offs (up to 500 ft AGL) and 3 landings.

For the purposes of satisfying this regulation, in the context of Part 121 operations being predominately conducted in type-rated aeroplanes, the combination of the CASR Dictionary definitions of *kind* and its nested definition of *'typ'*, means an aeroplane covered by the type-rating.

The baseline prescriptive elements can also be satisfied where, instead of an aeroplane covered by the type-rating, the recent experience is satisfied in an approved flight simulator for the type.

The provisions include the term *controlling'* which should be taken to only be satisfied when the pilot is physically providing control inputs to the aeroplane control systems. This should not be taken to be satisfied by the use of autopilot systems. Other automation that provides guidance or cueing such as flight director systems or heads-up-displays that are part of normal operations should not be disabled or prevented from providing normal assistance. The degree to which auto-thrust, auto-throttle or speed hold type systems are used, again should be representative of their use in normal operations.

There are two additional prescriptive elements that can each be used to satisfy compliance with the recent experience requirements. They, like many other similar provisions are the credit gained by the completion of a flight test for the grant of a pilot licence or a rating in an aeroplane of that type or an approved flight simulator for the aeroplane; or completed a Part 121 proficiency check for the operator and an aeroplane of that type.

It is worth noting that the provisions, other than the Part 121 proficiency check case, do not require that the recent experience requirements are only satisfied when that experience is gained in operations for that specific operator, or in Part 121 operations for that matter.

Recent experience requirements - outcome-based

This regulation also contains an alternative to the prescriptive elements where it can be demonstrated, by either the pilot or the operator, that it was not practicable for the pilot to meet the prescriptive recent experience requirements.

The common use of ''practicable'' in similar legislative provisions is generally taken to mean:

> 'that which can be done should be done unless it is reasonable in the circumstances for the duty-holder to do something less'.

Note: This meaning has been extracted from the Safe Work Australia, Interpretive guideline—model work health and safety act the meaning of 'reasonably practicable'.

The outcome-based provision can be summarised as requiring the following two things to be satisfied:

- prescriptive compliance could not reasonably be achieved in the circumstances
- the alternative recent experience requirements are specified in the operator's exposition.

The legislation does not specifically require that the circumstances which would permit the alternative recent experience be specified in the operator's exposition. However, including this content in an operator's exposition can helpfully identify the context behind what alternative recent experience is assessed by an operator to achieve an acceptable level of safety assurance.

On the other hand, the legislation does require that the alternative recent experience requirements are specified in the operator's exposition. This exposition content is not specifically subject to CASA approval but is subject to review as part of an AOC application or, if the content is added to an exposition after an AOC has been issued, to the operator's change management procedures and CASA surveillance activities.

Particularly for some very large aeroplane types operated under Part 121 of CASR. it may not be reasonable to conduct recency events in an aeroplane under Part 91 of CASR to satisfy the requirements, possibly due to restrictions at aerodromes on circuit training for large jet aeroplanes. But smaller Part 121 aeroplanes may be able to satisfy the requirements during circuit training conducted as a Part 91 operation. Conversely, smaller aeroplane types may not have the same availability of flight simulators when compared to the larger types.

The following paragraphs contain several additional matters recommended to be included in an operator's exposition in relation to recent experience requirements.

Alternative recent experience – values

It must be noted that the wide variation of Part 121 operations means that the information contained in the following paragraphs is specifically not establishing acceptable alternative recent experience values.

CASA recommends operators use a starting point of constraining "how recent" or "what experience". The outer boundary of the prescriptive rule permits a circumstance where a pilot conducted the 3 take-offs and 3 landings 90 days prior to the flight, and then nothing else.

When considering whether a set of specific parameters (values) to use in place of the 3 take-offs and 3 landings in 90 days, operators must ensure that these alternatives truly constitute an acceptable level of safety assurance. One relatively simple concept might be to require 2 take-offs and landings to be done in a specified time period shorter than 90 days, with 1 take-off and 1 landing to be done in a specified time period longer than 90 days.

Alternative recent experience – risk controls

The following non-exhaustive list of points is intended to provide possible matters that operators might consider in the development of risk controls which mitigate the alternative recent experience values permitted in the operator's exposition.

Physical

- Aerodrome configuration:
  - runway length (limiting/not-limiting)
  - runway slope
  - runway width (Narrow runway option)
  - runway surface condition - contamination (ice, snow, dust, rubber deposits)
  - runway lighting
  - approach lighting
  - VASI/PAPI installation
  - aerodrome complexity
- Aerodrome vicinity:
  - terrain
  - populous areas
  - visual illusions
  - traffic
  - other aerodromes
- Aerodrome services:
  - approach procedures options (straight-in 2D/3D, circling)
  - departure procedures
  - surveillance or non-surveillance environment
  - controlled or non-controlled procedures
  - rescue and firefighting services (RFFS).

Technical

- Aeroplane configuration:
  - weight (MTOW / RTOW / MLW etc)
  - fuel criticality
  - EDTO / non-EDTO
  - MEL or any permissible unserviceable items
- Aeroplane systems capability (HUD / EVS / SVS / FBW)
- Aeroplane automation
- Aeroplane and systems integration/complexity.

Temporal

- Time of day (day / night)
- Crew duty and fatigue
- Length of flight (very short / very long).

Environmental

- Weather
  - wind:
    - crosswind
    - tailwind
    - variability and gusts (relative to aeroplane limits)
  - cloud ceiling (proximity to landing minima)
  - visibility
  - other phenomena:
    - thunderstorms
    - smoke
    - haze
    - ice
    - snow
  - extreme cold/heat,
- Day or night.

Skill & Experiential

- Combined crew:
  - recent experience
  - type experience
  - total flight time experience
  - aerodrome familiarity
  - city-pair familiarity
- PIC:
  - recent experience
  - type experience
  - PIC experience
  - total flight time experience
  - aerodrome familiarity
  - city-pair familiarity
- Co-pilot:
  - recent experience
  - type experience
  - total flight time experience
  - aerodrome familiarity
  - city-pair familiarity
- Pilot proficiency generally.

Aerodromes to be considered are recommended to include are the departure aerodrome and the destination aerodrome. Additionally, operators might also consider destination alternate aerodrome(s), en-route alternate aerodrome(s) (EDTO and non-EDTO as applicable) and take-off alternate aerodrome.

GM 121.545 Cruise relief co-pilot—recent experience requirements

This regulation applies to the holder of a cruise relief co-pilot type rating. However, there may be circumstances in which an operator would only assign duty to a full type rated pilot as a cruise relief co-pilot; in this case, the regulation will still apply as it would to a pilot holding a cruise relief co-pilot rating for the aeroplane.

GM 121.550 Flight engineers—recent experience requirements

Reserved

8.5 Division 121.N.5 — Non-recurrent training and checking etc.

AMC 121.555 Meeting initial training requirements

Subparagraph 12.09(4)(b)(ii) of the Part 121 Manual of Standards – practice using life-raft equipment in water

The information in this section outlines an acceptable means of compliance regarding what constitutes “practice using life-raft equipment in water” for a flight crew member as required by subparagraph 12.09(4)(b)(ii) of the Part 121 Manual of Standards.

For the purposes of the previously mentioned MOS subparagraph, mock-up equipment that enables the flight crew member to demonstrate practical proficiency in the use of equipment being replicated is considered an acceptable means of compliance. For example, real day/night flares do not have to be used if there is a flare mock-up that replicates the features the FCM needs to recognise and manipulate to operate it effectively such as colour, sensory markers, screw top, pull ring etc.

Subsection 12.10(2) of the Part 121 Manual of Standards – flight crew basic first-aid training

The information in this section outlines an acceptable means of compliance regarding what constitutes “basic first-aid training” for a flight crew member as required by subsection 12.10(2) of the Part 121 Manual of Standards.

For the purposes of the previously mentioned MOS subsection, first-aid training provided by external providers is an acceptable means of compliance, provided the details of the training and the provider are included in the operator’s exposition and the persons conducting the training are qualified to provide the training, i.e. a nationally recognised training organisation.

For clarity, the requirements of subsection 12.10(3) still apply to the training delivered by an organisation of the kind mentioned above.

Where an operator chooses to use an external provider, the operator should remain aware that:

- the requirements of regulation 119.130, 119.150 and subpart 119.E remain applicable
- the person providing actual training in the use of safety or emergency equipment is required to obtain the regulation 121.010 approval applicable to training or checking involving safety or emergency equipment.

Note: The 121.010 approval requirement may therefore require first aid training to be conducted in 2 parts, with generic first aid theory training delivered by the external provider, and practical training on the actual aircraft first aid equipment delivered by a person holding the appropriate regulation 121.010 approval.

GM 121.555 Meeting initial training requirements

The initial training introduces a new flight crew member to the requirements in the operator's exposition. The minimum requirements for initial training are contained in Division 2 of Chapter 12 of the Part 121 MOS. This training is intended to provide an insight to the operator's procedures, both normal and abnormal, as well as general survival skills and first aid. This is an ideal opportunity for the operator to expose the new crew member to their operating environment and to instil in the crew member the operator's expectations regarding safety and professional work ethics.

In addition to the requirements contained in Chapter 12 of the Part 121 MOS for initial training, operators may need to include other topics (dependent on applicable operational approvals) for inclusion within the operator initial training such as:

- human resources introduction briefing
- EFB
- dangerous goods training
- EDTO training
- dispatch deviation guide training
- ILS PRM training
- LAHSO training
- PBN training (includes RNP-AR)
- RVSM training
- aircraft performance
- aircraft loading
- aviation security briefing
- cold weather operations
- low visibility training
- adverse weather avoidance training
- volcanic ash avoidance training
- upset prevention and recovery training
- international operations briefing.

The initial training ground school should be designed to prepare the flight crew to enter the conversion training program.

AMC 121.560 Meeting conversion training requirements

Subsection 12.14(2) of the Part 121 Manual of Standards – requirement to use a training facility or device that meets the requirements of Division 3 of Chapter 13

This AMC applies to a circumstance where a Part 121 operator is using a flight simulator to conduct training or checking that is conversion training, but is not mandated to do so under regulation 121.510. Under this circumstance, the primary requirement contained in Division 3 of Chapter 13 is section 13.08 of the Part 121 MOS which contains multiple outcome-based requirements.

For an operator who elects to conduct the training or checking in a flight simulator that is based outside of Australia, it is an acceptable means of compliance with the requirements of section 13.08, for the purposes of subsection 12.14(2), that the following conditions are met:

- any training device is located in an overseas ICAO contracting state
- the national aviation authority of the state (the NAA) has approved the training device to conduct the required training and/or checking
- the flight simulator used for the training and/or checking (the equipment) has a qualification certificate issued by the NAA and recognised by CASA.

Note: Advisory Circular AC 60-02 v2.2 states that CASA currently recognises the flight simulator qualification certificates of countries listed under the definition of *recognised foreign State* in regulation 61.010. At the time of issuing v2.1 of this AMC/GM document, those countries were Canada, Hong Kong (Special Administrative Region of China), New Zealand, the United States of America, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

GM 121.560 Meeting conversion training requirements

There is an exemption in force in relation to this regulation and the use of a person employed by the foreign equivalent of a Part 142 organisation to conduct conversion training. It is recommended that operators review section 14F of CASA EX83/21.

Conversion training takes place when a flight crew member first joins the company or changes aeroplane type. Conversion training will normally follow the initial training, although the two training programs may be integrated.

Type rating training must be conducted under a Part 141 or Part 142 authorisation. If an operator holds a Part 141 or Part 142 authorisation to conduct type rating training, the operator may elect to conduct conversion training concurrently with the type rating.

Conversion training will include the requirements outlined in the Part 121 MOS. Normally the line check will follow the completion of conversion training. During the training, the flight crew member should also be exposed to training in the operator's HF and NTS.

Use of foreign training organisations

Refer to section 14F of CASA EX83/21. An exemption is necessary to enable the use of foreign training organisations since this regulation as written does not permit the use of a foreign training organisation.

The exemption is subject to the following conditions:

- the person conducting the conversion training must be:
  - employed by a training provider that is authorised by the national aviation authority of a recognised foreign State to conduct conversion training equivalent to a relevant individual item of conversion training, mentioned in Division 3 of Chapter 12 of the Part 121 MOS, that the operator has contracted the training provider to conduct for a flight crew member of the operator (the applicable training); and

Note: Recognised foreign States are those recognised by CASA for the purposes of foreign flight simulators under regulation 61.010.

authorised by the national aviation authority of the recognised foreign State to conduct this equivalent training.

It remains incumbent on the operator to include in their exposition the details of the training organisation's syllabus, completion standards and forms for the training event(s), in accordance with the requirements of regulation 119.170, as these events remain the responsibility of the operator.

Note: See AMC 121.560 and GM 121.510 for information regarding the use of foreign simulators.

Supervised line flying

Supervised line flying provides the opportunity for a flight crew member to carry into practice the procedures and techniques they have been made familiar with during the ground and flight training of an operator conversion training. This is accomplished under the supervision of a flight crew member specifically nominated and trained for the task. At the end of supervised line flying, the respective crew member should be able to conduct a safe and efficient flight, and satisfactorily perform the tasks of their crew member station.

A variety of reasonable combinations may exist with respect to:

- a flight crew member's previous experience
- the complexity of the aircraft concerned
- the type of route/area operations.

It is recommended that the following minimum number of sectors be conducted during conversion training, and that the operator consider the previous experience of the flight crew member and the complexity of the aeroplane and type of operation when determining minimum requirements to place into their exposition:

- co-pilot undertaking initial operator transition training:
  - minimum 20 flight sectors
- co-pilot upgrading to PIC:
  - minimum 20 flight sectors when converting to a new type
  - minimum 10 flight sectors when already qualified on the aeroplane type.

Rapid disembarkation

Section 12.15 of the Part 121 MOS uses the term ‘rapid disembarkation’. This term is not legally defined in the civil aviation legislation.

CASA provides the following advice on this term:

- A rapid disembarkation is an expedited egress from the aircraft in situations assessed by the crew members as deviating from normal conditions but not being an immediate emergency, i.e., not posing an immediate threat to passenger and crew members on board, but which may escalate into an emergency.
- It is an intermediate procedure between normal disembarkation and an emergency evacuation and is beneficial for operators in managing some abnormal situations, e.g., smoke or fumes in the cabin, fuel spills, fire in proximity of the aircraft, bomb threat.

- Rapid disembarkation can be initiated at any time the aircraft is on the ground with passengers on board and boarding equipment is in place such as aerobridge(s), boarding stairs and internal aircraft stairs. It is more likely to happen at the airport and be initiated in response to an occurrence involving some aspect of pre or post flight ground activity, e.g., fuelling, aircraft inspections and baggage handling.
- Passengers and crew members would normally leave their belongings on board during a rapid disembarkation.
- Emergency exits and slides are not used in a rapid disembarkation unless the situation escalates and the crew decide that it has become necessary to initiate an emergency evacuation. As passengers may not appreciate the important difference between rapid disembarkation and emergency evacuation, it is important that instructions to the passengers are clear and unambiguous.
- The specific words used in the instructions given by crew members to passengers for a rapid disembarkation will be different from that to conduct an emergency evacuation.
- When developing procedures for a rapid disembarkation, it is recommended that operators give consideration to the following:
  - responsibility for initiating a rapid disembarkation
  - the circumstances under which a rapid disembarkation is an appropriate course of action
  - the method by which it will be achieved
  - crew communication
  - communication with other safety personnel e.g. ground handlers
  - instructions to passengers
  - escalation to an emergency evacuation.

GM 121.565 Command training requirements

A syllabus should be developed to ensure that a pilot is adequately qualified and competent to assume responsibility as PIC of the aeroplane. Emphasis should be placed on a PIC's authority, company organisation and policy, operational control and other matters relating to the responsibilities of the PIC.

Technical knowledge and skills are important elements for a PIC; however, HF and NTS should be considered in this training as an essential component for the suitability for command. These core values will include principles such as communication, workload management, error prevention and detection and decision making.

It is recommended that the training include:

- skills assessment including the following:
  - application of procedure
  - communication
  - aircraft flight path management – automation
  - aircraft flight path management – manual
  - knowledge
  - leadership and teamwork
  - problem solving and decision making

  - situational awareness
  - workload management.
- threat and error management
- defect reporting
- regulatory requirements including:
  - powers of the PIC
  - accident and incident reporting.
- operator obligations of the PIC
- safety management system
- fatigue risk management.

The operator's exposition should specify the applicable flight simulation training program and the number of sectors conducted in an aircraft that would be suitable for their training organisation to adequately prepare a pilot for unsupervised line flying as a PIC.

In the case where an existing PIC is changing aeroplane type, it would not be expected that the individual be required to repeat the initial command course. The syllabus of training for this scenario should consider the recognition of prior learning, i.e., a training needs analysis should be completed to determine what training in addition to that of the type rating is necessary.

The operator's exposition should address the initial command scenario and the type transfer case for an existing PIC.

8.6 Division 121.N.6 — Recurrent training and checking

AMC 121.570 Recurrent training and checking requirements

Paragraph 121.570(1)(b) of CASR – use of foreign training organisations for recurrent flight training

This AMC applies to a circumstance where a Part 121 operator elects to conduct the recurrent flight training required by paragraph 121.570(1)(b) of CASR and Division 4 of Chapter 12 for the Part 121 MOS in a foreign country using a foreign training organisation.

For this kind of operator, it is an acceptable means of compliance with the requirements of paragraph 121.570(1)(b), in relation to the kind of training organisation used to conduct the training, if the:

- national aviation authority of the foreign State (the NAA) has approved the training organisation to conduct the required training
- training organisation has a system under which successful completion of the training is certified on the training organisation's relevant training form by an employee of the training organisation who is also a delegate of the NAA for certifying flight crew completion of the training
- operator's exposition includes the details of the training organisation's syllabus and completion standards for the training

- foreign State is one recognised by CASA for the purposes of foreign flight simulators under regulation 61.010 of CASR.

  Note: Advisory Circular AC 60-02 v2.2 states that CASA currently recognises the flight simulator qualification certificates of countries listed under the definition of *recognised foreign State* in regulation 61.010. At the time of issuing v2.3 of this AMC/GM document, those countries were Canada, Hong Kong (Special Administrative Region of China), New Zealand, the United States of America, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

GM 121.570 Recurrent training and checking requirements

The MOS content for this regulation is contained in Division 4 of Chapter 12 of the Part 121 MOS.

An operator's recurrent training and checking system must consist of the following:

- recurrent flight training
- Part 121 proficiency check
- annual line check
- annual emergency and safety equipment check
- annual ground refresher training
- three yearly emergency and safety equipment check.

An operator's training system should develop a syllabus for ongoing training for their flight crew, relevant to the needs of their operation. Conversion training will meet the initial requirements for recurrent flight training and the annual ground refresher training (an operator's records will need to show completion of these items).

Person conducting recurrent flight training, line checks and refresher training / checks

A person who is conducting recurrent flight training, line checks and/or refresher training / checks is not required by Part 121 to hold either a flight examiner rating, flight instructor rating or a regulation 121.010 approval.

Under subregulation 119.170(2), an operator's training and checking system must include (this is not the full list just the matters relevant to this GM element) a description of how:

- training and checking, including recurrent training and line checking, is conducted by or for the operator
- athe operator assesses the competence of a flight crew member or cabin crew member to perform the duties assigned to the member for a flight.

To meet these requirements, the training and checking system will need to specify the minimum experience and entry control requirements for a person to become, and maintain their status as, a trainer or checker for these training and checking events. See AC 119-11 – Training and Checking Systems for more information on the underlying skills and competencies for these kinds of persons.

HF and NTS training

Elements of HF and NTS should be integrated into all appropriate phases of recurrent training.

A specific modular HF and NTS training program should be established such that all major topics are covered over a period not exceeding three years, as follows:

- human error and reliability, error chain, error prevention and detection
- operator safety culture, standard operating procedures (SOPs), organisational factors
- stress, stress management and fatigue
- information acquisition and processing, situational awareness, workload management
- decision making
- communication and coordination inside and outside the flight crew compartment
- leadership and team behaviour
- automation and philosophy of the use of automation (if relevant to the type)
- specific type-related differences
- case studies
- additional areas that warrant extra attention, as identified by the SMS.

GM 121.575 Holding valid Part 121 proficiency check

There is an exemption in force in relation to this regulation. The exemption puts in place a 30-day period either side of a due date for a Part 121 proficiency check where the check is taken to have been completed on the due date, thereby preserving staggers. It is recommended that operators review section 13 of CASA EX83/21.

The intention of this regulation is that a flight crew member must do two proficiency checks in a rolling 12-month period beginning from the date of their first Part 121 proficiency check. No two proficiency checks shall be more than 8 months apart. If an operator elects to conduct a proficiency check less than 4 months since the most recent check, operators should be aware that this will result in an effective shortening of the rolling 12-month period due to the 8-month requirement.

An operator's exposition should provide a process for the requalification of crew who no longer hold a valid proficiency check. In some cases, this will be a simple requalification and completion of a proficiency check. In longer term cases, the operator may give consideration to completion of the full induction process back into the organisation.

See table 1 for an example of a sample proficiency check tracking card:

Table 1: Example sample proficiency check training card

Proficiency check date	Expiry date	Explanatory comment
5 Jun 21	5 Feb 22	Expiry is the initial qualification 5 Jun 21 + 8 months.

4 Dec 21	5 Jun 22	Expiry is the earliest of: • check date 4 Dec 21 + 8 months = 4 Aug 22 • most recent previous check date 5 Jun 21 + 12 months = 5 Jun 22.
15 Apr 22	4 Dec 22	Expiry is the earliest of: • check date 15 Apr 22 + 8 months =15 Dec 22 • most recent previous check date, 4 Dec 21 + 12 months = 4 Dec 22.
27 Jun 22	27 Feb 23	Expiry is the earliest of: • - check date 27 Jun 22 + 8 months = 27 Feb 23 • most recent previous check date 15 Apr 22 + 12 months = 15 Apr 23. **Note:** In this case, the 8-month limit is the limiting factor.
1 May 23	1 Jan 24	In this case, the individual has an expired proficiency check between 27 Feb 23 and 1 May 23. The individual must be requalified in accordance with the operator's exposition, and only gains an 8-month validity period before the next check.

Maximum certificated passenger seating capacity of 19 or less

Operators of aeroplanes with a maximum certificated passenger seating capacity of 19 or less may apply to CASA for approval to allow a proficiency check, conducted by a different operator, to count as a valid proficiency check for the new operator. This would only be considered if both operators' training organisation utilised the same (or very similar) abnormal and emergency procedures. The operator should conduct a gap analysis of the procedures used to identify any elements that need to be trained during the conversion course. The operator is, as always, responsible for ensuring the competency of their flight crew in performing their duties. The gap training does not necessarily have to occur in flight or simulated flight, the intent is that the new flight crew member would handle an abnormal or emergency in accordance with the new operator's standard procedures, even if an abnormal or emergency event occurred on their first day of flying in a Part 121 operation.

AMC 121.580 Part 121 proficiency check

Section 14E of CASA EX83/21 – foreign examiners conducting Part 121 proficiency checks

This AMC establishes how a foreign conductor of a Part 121 proficiency check may be taken to satisfy an *equivalent check* as permitted under subsection 14E(3) of CASA EX83/21.

Note: Guidance on this exemption is also available in the GM 121.580 entry in this document.

Method 1

The most readily apparent equivalent check would be an appropriate authorisation to conduct an operator proficiency check under the operational air transport rules of the foreign NAA supported by the appropriate approvals for the training centre, training program, FSTD and examiner. As an example, a US FAA 14 CFR Part 121.441 proficiency check conducted by an approved examiner, supported by 14 CFR Part 142 training centre and training

program approvals, that permit the examiner to conduct the 14 CFR Part 121.441 proficiency check – would unquestionably be an equivalent check.

However, it is unlikely that training centers [sic – FAR Part 142 spelling] contemplated for use by the types of aeroplanes to which section 14E of CASA EX 83/21 applies, would be approved to conduct 14 CFR Part 121.441 competency checks.

Method 2

An equivalent check can be established by identifying common individual elements of both the CASR Part 121.580 proficiency check and foreign NAA Part 61 (or foreign rule equivalent) PIC Instrument proficiency checks and/or type rating proficiency checks.

Where those checks can be determined to require assessment of at least the elements of competency required by a regulation 121.580 proficiency check, then that check can be taken to be an equivalent check. To be a valid equivalent check, it requires the foreign NAA to have approved the training centre, training program, FSTD, and examiner, etc., to conduct those Part 61 competency checks under their NAA's variously required rules, nothing more. Being a valid equivalent check does not however require the foreign NAA to approve the training centre to conduct the equivalent check, only the checks of the competency elements.

Using the US FAA example again; where the training centre is approved under US 14 CFR Part 142 to conduct 14 CFR Part 61.58 instrument competency checks and regulation 61.157 type rating checks, then those can be taken to satisfy the competency checking required for an equivalent check, by virtue of the elements of competency they are required to assess and the manner that the assessment is required to be conducted.

Method 3

Finally, it may be the case that some foreign training centers [sic – FAR Part 142 spelling] are not permitted by their NAA to conduct concurrent checks with elements that are outside of their training program approval. Hence it can be expected that the check to satisfy the regulation 121.580 check could be conducted as a stand-alone check by an examiner who would otherwise be approved to conduct the checks under the Part 61 provisions for the NAA, but is not actually doing so when conducting the equivalent check, as described in the operator's exposition for the purpose.

GM 121.580 Part 121 proficiency check

Note: Subregulations 119.170(6) and (7) require, in part, Australian air transport operators using aeroplanes in passenger transport operations with a MOPSC >30, or aeroplanes used in cargo transport operations with a maximum payload capacity of at least 3,410kg, to directly employ the persons who conduct the flying related checking of flight crew. The effect of these subregulations may constrain some aspects of this regulation (regulation 121.580).

There is an exemption in force in relation to this regulation and the use of a person employed by the foreign equivalent of a Part 142 organisation to conduct Part 121 proficiency checks. It is recommended that operators review section 14E of CASA EX83/21.

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required for persons to conduct a Part 121 proficiency check without holding a flight examiner rating training to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

The operator's proficiency check is the main check of competency of the flight crew. These checking events are also an ideal opportunity to provide training feedback and respond to general training needs identified through the operator's SMS. Operators are encouraged to incorporate evidence-based training methods into their proficiency checks.

In constructing the contents of a proficiency check, reference must be made to the required elements listed in Division 5 of Chapter 12 of the Part 121 MOS.

This regulation requires the persons assessing the competency of pilots during Part 121 proficiency checks to:

- be:
  - employed by the operator to conduct the check,

    or
  - employed by a Part 142 operator with which the operator has a contract for the Part 142 operator to conduct the check for the operator
- hold:
  - flight examiner rating for an aeroplane of that kind,

    or
  - an approval under regulation 121.010 to conduct a Part 121 proficiency check for an aeroplane of that kind
- have successfully completed training in human factors principles and non-technical skills.

The wording of this regulation, in relation to the persons who can conduct a Part 121 proficiency check, is designed to be complementary with the requirements within Part 61, as modified by relevant Part 61 related exemptions. Notably, the combined effect of Part 61 and CASA EX66/21 is that to conduct an operator proficiency check a pilot must either be able to validly exercise the privileges of a flight examiner rating, including holding a valid and current examiner proficiency check (EPC), or be a check pilot that meets the relevant requirements of Part 121, 133, 135 or 138 (as the case may be) for such a person.

Flight examiner rating required to conduct Part 121 proficiency check

This section of the GM does not apply to a person conducting Part 121 proficiency checks where they hold the regulation 121.010 approval mentioned in regulation 121.580.

Subparagraph 121.580(3)(a)(ii) of CASR allows a person to conduct Part 121 proficiency checks for an operator if the person holds "a flight examiner rating for an aeroplane of that kind". Underpinning this requirement is that the person must hold the flight examiner rating

flight test endorsement that provides the person with the competencies necessary to evaluate the matters required to be assessed during a Part 121 proficiency check.

Noting the matters to be assessed during the Part 121 proficiency check, a person conducting the check using their flight examiner rating must be able to exercise the privileges of their flight examiner rating (i.e. they must have a current examine proficiency check [EPC]) and at least hold the flight test endorsement mentioned in item 6 of Table 61.1310 of CASR – that is they must hold an “an instrument rating flight test endorsement (aeroplane)” (IR-A). The person must also hold the class or type rating for an aeroplane of that kind (see the explanation of the definitions of *kind* and *type* in GM 121.480).

The ability for an operator to use a person who holds a flight examiner rating to conduct Part 121 proficiency checks does not remove the requirement for the training and checking system to train and assess the examiner as being suitable to conduct the check. For example, if a Captain on a propeller aircraft holds a flight examiner rating and is conducting Part 121 proficiency check for that aircraft moves to flying a turbofan aircraft for the same operator, whilst that person might have a valid EPC and the requisite flight examiner IR-A endorsement, prior to using that person to conduct Part 121 proficiency checks for the turbofan aircraft the operator would need to appropriately train and assess the person to conduct these checks on the new aircraft.

Meaning of "employed" in relation to persons conducting Part 121 proficiency checks

There is no definition of "employed" or "employee" in the civil aviation legislation. In such cases, the definition in the Macquarie Dictionary is the accepted definition. Definitions for both these terms do not differentiate between full-time or part-time employment/employees. It was the deliberate policy intent of the new regulations to not require the persons conducting Part 121 proficiency checks to be full-time employees (this differs from the rules prior to 2 December 2021 where check pilots had to be full time employees). However, see the Note at the beginning of this GM for an employment related requirement in regulation 119.170.

A potential safety issue does arise if the employee is working on a part-time basis for multiple operators. To be clear, this circumstance is permitted by the regulations; however, it will require the operator to examine whether additional safety defences are required ensure the competence of the employee, noting that the employee is moving back and forth between different operators with different expositions and different procedures.

CASA has written guidance material on this topic in relation to key persons that work for multiple operators and some of this guidance material has relevance to the circumstance of a check pilot working for multiple operators as well. Therefore, organisations should be prepared to demonstrate how a suitable workload is being managed by the check pilot. Any such case would need to consider several factors, including (but not limited to):

- the individual’s total workload
- proposed number of hours worked per week (across all employment)
- method of ensuring suitable rest periods
- method of ensuring compliance with workplace and fatigue requirements
- method of confirming that the check pilot will be available when needed by the operator.

In particular, an operator will need to consider how they will meet their obligations under CAO 48.1 in relation to fatigue limits.

Foreign conductors of CASR Part 121 proficiency checks Refer to section 14E of CASA EX83/21. The exemption enables the use of foreign examiners to conduct Part 121 proficiency checks, subject to certain conditions.

The intention of the exemption is to put in place arrangements subject to similar conditions as were permitted prior to 2 December 2021, in clause 3.4A of Appendix 2 to CAO 82.1.

Essentially, they are::

- the person conducting the Part 121 proficiency check must be:
  - employed by a training provider that is authorised by the national aviation authority of a recognised foreign State to conduct a check equivalent to the proficiency check under regulation 121.580 (an equivalent check); and

    Note: Recognised foreign States are those recognised by CASA for the purposes of foreign flight simulators under regulation 61.010.
- authorised by the national aviation authority of the recognised foreign State to conduct an equivalent check; and

  Note: See the AMC 121.580 entry earlier in this document for CASA's already accepted methods of establishing an *equivalent check*.
- the Part 121 proficiency check conducted by the foreign examiner must conform to the validity requirements of:
  - regulation 121.575, as if the check were a Part 121 proficiency check conducted by a person mentioned in subregulation 121.580 (2) or (5) (as applicable);

    or
  - the alternate validity periods for a Part 121 proficiency check mentioned in section 13 of CASA EX83/21; and
- the Part 121 proficiency check conducted by the foreign examiner must meet the requirements of Division 5 of Chapter 12 of the Part 121 Manual of Standards, as if the check were a Part 121 proficiency check; and
- the operator must ensure that their head of training and checking ensures that:
  - each person who conducts the Part 121 proficiency check for the foreign training provider is appropriately authorised to conduct the check; and
  - the foreign training provider is notified, in writing, of any change in the operator's exposition relating to the Part 121 proficiency check that the foreign training provider conducts.

It remains incumbent on the operator to include in their exposition the details of the training organisation's syllabus, completion standards and forms for the training and/or checking event(s), in accordance with the requirements of regulation 119.170, as the check event remains the responsibility of the operator.

Notes:

1. See AMC 121.560 and GM 121.510 for information regarding the use of foreign simulators.
2. Advisory Circular AC 60-02 v2.2 states that CASA currently recognises the flight simulator qualification certificates of countries listed under the definition of *recognised foreign State* in regulation 61.010. At the time of issuing v2.1 of this AMC/GM document, those countries were

Canada, Hong Kong (Special Administrative Region of China), New Zealand, the United States of America, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

GM 121.585 Holding valid line check

The regulation requires that all flight crew members must hold a valid line check applicable to the operator who assigns them their duties.

The line check is valid for 12 months from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 2 for an example of a possible line check tracking card:

Table 2: Possible line check tracking card example

Line check date	Expiry date	Explanatory comment
5 Jun 21	30 Jun 22	Initial qualification.
27 Mar 22	31 Mar 23	Because this has been conducted more than 3 months prior to the expiry it forces a reset of expiry date.
1 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 12 months.
1 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 12 months
1 May 25	31 May 26	The individual's check was expired between 31 Mar and 01 May, therefore check date resets based on the most recent check

GM 121.590 Line check requirements

Line checks should establish the ability to satisfactorily perform a complete line operation, including pre-flight and post-flight procedures and use of the equipment provided, as specified in the exposition. The route and number of sectors chosen should be such as to give adequate representation of the scope of a flight crew member's normal operations including PF and PM duties. The PIC, or any pilot who may be required to relieve the PIC, should also demonstrate their ability to manage the operation and make appropriate command decisions.

The flight crew should be assessed on their HF and NTS in accordance with the methodology described in the exposition. The purpose of such assessment is to:

- provide feedback to the crew collectively and individually and serve to identify areas for retraining
- be used to improve the HF and NTS training system.

GM 121.595 Holding valid refresher check

See table 3 for an example of a possible refresher check tracking card:

Table 3: Possible refresher check tracking card example

Refresher check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 22	Initial qualification.
27 Mar 22	31 Mar 23	Because this has been conducted more than 3 months prior to the expiry it forces a reset of expiry date.
01 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 12 months.
01 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 12 months.
01 May 25	31 May 26	The individuals check was expired between 31 Mar and 01 May, therefore check date resets based on the most recent check.

AMC 121.600 Refresher training and checking requirements

Use of foreign training organisations for refresher training and checking

This AMC applies to a circumstance where a Part 121 operator elects to conduct the refresher training and/or checking events required by regulation 121.600 of CASR in a foreign country using a foreign training organisation.

For this kind of operator, it is an acceptable means of compliance with the requirements of regulation 121.600 of CASR if the:

- national aviation authority of the foreign State (the NAA) has approved the training organisation to conduct the required training and/or checking
- training organisation has a system under which successful completion of the competency checking is certified on the training organisation's relevant checking form by an employee of the training organisation who is also a delegate of the NAA for certifying flight crew competency of the kind checked
- operator’s exposition includes the details of the training organisation's syllabus and completion standards for the training and/or checking event(s)
- foreign State is one recognised by CASA for the purposes of foreign flight simulators under regulation 61.010 of CASR.

Note: Advisory Circular AC 60-02 v2.2 states that CASA currently recognises the flight simulator qualification certificates of countries listed under the definition of *recognised foreign State* in regulation 61.010. At the time of issuing v2.3 of this AMC/GM document, those countries were Canada, Hong Kong (Special Administrative Region of China), New Zealand, the United States of America, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

GM 121.600 Refresher training and checking requirements

The operator may incorporate the refresher training and checking into their training and checking system during other elements of the recurrent program. System knowledge may be assessed via technical quizzes, topical discussions and targeted questions during annual line checks, other training or checking events, or using computer-based training.

The requirement in paragraph 121.600(1)(d) for the refresher training to include training on operational procedures and requirements in relation to the Part 121 operations conducted by the operator using the aeroplane is potentially a very broad requirement. Noting that refresher training and checking is required to be conducted on an annual basis, it is recommended that operators consider the scope of topics included within refresher training due to this regulation paragraph in the context of other training requirements within Part 121 of CASR.

Under paragraph 2.4 of Appendix IV of the old CAO 20.11 that was in force prior to 2 December 2021 when Part 121 of CASR commenced, it was required that operators include theoretical knowledge training and assessment of topics relating to the control of passengers during emergencies including emergency evacuation. These topics were deliberately not specifically required to be included in flight crew member recurrent training and checking under Part 121 of CASR to provide flexibility for operators to tailor the theoretical knowledge requirements on these topics to the nature of their operation and the risks engendered by that operation. Additionally, the new rules were written to avoid duplicating the effect of other legislative requirements on certain operators under the *Australian Transport Security Act 2004* and the subordinate *Australian Transport Security Regulations 2005*.

It is recommended that operators consider whether the following theoretical knowledge elements, related to the control of passengers during emergencies, should be included in the refresher training under paragraph 121.600(1)(d) of CASR:

- methods of control (for example psychological or physical)
- stowage location and correct use of restraint equipment
- handling of passengers with reduced mobility
- handling of passengers whose conduct might jeopardise the safety of the aircraft
- action to be taken in the event of a hijack or attempted hijack.

In determining training and assessment content, operators should be cognisant of the requirements of crew training program requirements in the *Aviation Transport Security Regulations 2005*.

Reviews of selected accidents and incidents must be provided in regular crew updates, such as crew newsletters. This should include outcomes or changes that have been implemented in the operator's standard operating procedures as a result, if any.

GM 121.605 Holding valid annual emergency and safety equipment check

The regulation requires that all flight crew members must hold a valid annual emergency and safety equipment check applicable to the operator who assigns them their duties.

The check is valid for 12 months from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 4 for an example of a possible annual emergency and safety equipment check tracking card:

Table 4: Possible annual emergency and safety equipment check tracking card example

Annual check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 22	Initial qualification.
27 Mar 22	31 Mar 23	Because this has been conducted more than 3 months prior to the expiry it forces a reset of expiry date.
01 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 years.
01 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 years.
01 May 25	31 May 26	The individuals check was expired between 31 Mar and 01 May, therefore check date resets based on the most recent check.

AMC 121.610 Annual emergency and safety equipment training and checking requirements

Reserved.

GM 121.610 Annual emergency and safety equipment training and checking requirements

Annual emergency and safety equipment training and checking will include the requirements outlined in Division 6 of Chapter 12 of the Part 121 MOS.

The training and checking should be focused specifically on the duties that the applicable crew member would perform on the aeroplane.

The recurrent program should ensure focus is placed on both the location and method of use for applicable equipment.

The exposition should state the approved location(s) for the conduct of the recurrent training/checking sequences.

Theoretical knowledge content

Under the rules in place prior to 2 December 2021, section 2 of Appendix IV of CAO 20.11 outlined certain knowledge content requirements for the crew member emergency procedures proficiency test that was required to be conducted by the CAO.

The new flight crew Part 121 annual emergency and safety equipment rules, contained primarily in sections 12.27 and 12.28 of the Part 121 MOS, were deliberately not as specific

in relation to theoretical knowledge content as the old CAO to provide the flexibility for operators to tailor theoretical knowledge training and assessment requirements to the nature of their operation and the risks engendered by that operation. Additionally, the new rules were written to avoid duplicating the effect of other legislative requirements on certain operators under the *Australian Transport Security Act 2004* and the subordinate *Australian Transport Security Regulations 2005*.

It is recommended that operators consider whether the following theoretical knowledge elements sufficiently underpin the use of the listed emergency and safety equipment such that an annual review is appropriate for their specific operations:

- in relation to portable fire extinguishers:
  - which type of extinguisher is appropriate for which types of fires (paragraphs 12.27(c) and (d) of the MOS)
  - whether the fire extinguishing agent is toxic or likely to adversely affect breathing as these factors are pertinent to the precautions associated with using the equipment (paragraph 12.27(f) of the MOS).
- in relation to oxygen equipment (possible contribution to the crew member's understanding of the conditions required for the use of oxygen equipment (paragraph 12.27(d) of the MOS) and/or the operator emergency procedures in relation to the use of survival equipment (paragraph 12.27(j) of the MOS)):
  - the effects of altitude on respiration, gas expansion and gas bubble formation
  - hypoxia
  - duration of consciousness without supplemental oxygen at different altitudes
  - physical phenomena of decompression.
- in relation to survival equipment (possible contribution to the crew member's understanding of operator emergency procedures in relation to the use of survival equipment (paragraph 12.27(j) of the MOS)):
  - survival methods in different environments.

Practical training and checking

The intent of the practical training and checking requirements is to ensure the flight crew member (FCM) receives training appropriate to the duties that they may have to perform in an emergency, and that they maintain their competence in the practical application of the skills required to perform those duties. Continuing to practice a skill after competence has been acquired is one of the strongest moderators of skills decay.

The practical training required is dependent on the circumstances of the operational environment. For example, the duties of a FCM operating a wide-body/dual deck aeroplane will differ to those of a FCM operating an aeroplane that does not require any cabin crew.

When developing the practical training and checking components of the program, it is recommended that operators consider the following factors:

- the practical exposure required to acquire and maintain skills, and mitigate skill decay
- whether the training or checking provides sufficient assurance of competence under fatigue and/or stress

- the circumstances that influence the successful conduct of an emergency evacuation, e.g., co-ordination with other crew members, crew incapacitation, blocked exits
- the scope of FCM emergency duties, e.g., retrieving emergency equipment, managing crew incapacitation, assisting with the evacuation, checking the cabin, post evacuation tasks
- any peculiarities or challenges associated with retrieving emergency equipment, e.g., accessing and releasing equipment from stowage locations/brackets.
- the extent to which training aids/mock-ups replicate the features of the equipment crew need to recognise and manipulate to operate it effectively, e.g., colour, triggers, pull tabs, pins.

Where practical training is not mandated, it is up to the operator to determine the most appropriate method of delivering the training to meet the requirements, however, competence in the duties assigned will still need to be verified, e.g., use of survival equipment.

GM 121.615 Holding valid 3 yearly emergency and safety equipment check

All flight crew members hold a valid 3 yearly emergency and safety equipment check applicable to the operator who assigns them their duties.

The check is valid for a 3-year period but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 5 for an example of a possible check tracking card:

Table 5: Possible check tracking card example

3 yr check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 24	Initial qualification.
27 Mar 24	31 Mar 27	Because this check has been conducted more than 3 months prior to the expiry of the previous check, it forces a reset of the expiry date.
01 Feb 27	31 Mar 30	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 3 years.
01 Jan 30	31 Mar 33	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 3 years.
01 May 33	31 May 36	The individual’s check was expired between 31 Mar and 01 May, therefore the expiry date resets based on the most recent check.

GM 121.620 The 3 yearly emergency and safety equipment training and checking requirements

The 3 yearly emergency and safety equipment training and checking requirements include the requirements outlined in Division 7 of Chapter 12 of the Part 121 MOS.

The training and checking should be focused specifically on the duties that the applicable crew member would perform on the aeroplane.

The recurrent program should ensure focus is placed on both the location and method of use for applicable equipment.

The operator's exposition should specify the approved location(s) for the conduct of the recurrent training/checking sequences.

Practical training and checking

The intent of the practical training and checking requirements is to ensure the flight crew member (FCM) receives training appropriate to the duties that they may have to perform in an emergency, and that they maintain their competence in the practical application of the skills required to perform those duties. Continuing to practice a skill after competence has been acquired is one of the strongest moderators of skills decay.

The practical training required is dependent on the circumstances of the operational environment. For example, the duties of a FCM operating a wide-body/dual deck aeroplane will differ to those of a FCM operating an aeroplane that does not require any cabin crew.

When developing the practical training and checking components of the program, it is recommended that operators consider the following factors:

- the practical exposure required to acquire and maintain skills, and mitigate skill decay
- whether the training or checking provides sufficient assurance of competence under fatigue and/or stress
- the circumstances that influence the successful conduct of an emergency evacuation, e.g., co-ordination with other crew members, crew incapacitation, blocked exits
- the scope of FCM emergency duties, e.g., retrieving emergency equipment, managing crew incapacitation, assisting with the evacuation, checking the cabin, post evacuation tasks
- any peculiarities or challenges associated with retrieving emergency equipment, e.g., accessing and releasing equipment from stowage locations/brackets.
- the extent to which training aids/mock-ups replicate the features of the equipment crew need to recognise and manipulate to operate it effectively, e.g., colour, triggers, pull tabs, pins.

Where practical training is not mandated, it is up to the operator to determine the most appropriate method of delivering the training to meet the requirements, however, competence in the duties assigned will still need to be verified, e.g., use of survival equipment.

9 Subpart 121.P — Cabin Crew

There is an exemption in force in relation to Subpart 121.P and Subpart 91.P that effectively permits operators to use the Part 121 cabin crew requirements instead of the Part 91 cabin crew requirements during a private operation conducted by the operator. It is recommended that operators review section 24 of CASA EX83/21.

There are also exemptions in force in relation to the training and checking of cabin crew members. These exemptions apply to certain operators. It is recommended that operators review Parts 6, 7 and 7A of CASA EX87/21. The approvals mentioned in the Parts of this exemption are taken to be significant changes due to them activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

There is a Part 11 direction in force in relation to crew members carrying out audits, checks, examinations etc. Operators and pilots are advised to review section 9 of CASA EX81/21.

9.1 Division 121.P.1 – Preliminary

GM Division 121.P.1 - Preliminary

Note: The reader should be aware of the use of the terms 'initial training' and 'conversion training' throughout Subpart 121.N and 121.P, and the potential for these terms to generate confusion due to the historical connotations of 'conversion training'.

The following general guidance is provided:

- Initial training is effectively 'induction training' or 'indoctrination training', where a new crew member is introduced to the operator's exposition.
- The minimum requirements for initial training are contained in Division 4 of Chapter 13 of the Part 121 MOS. This training is to provide an insight to the operator's procedures, both normal and abnormal, as well as general survival skills and first aid. This is an ideal opportunity for the operator to expose the new crew member to their operating environment and to instil in the crew member their responsibilities in maintaining a safe and professional work ethic. The initial training ground school should be designed to prepare the crew member to enter the conversion training program.
- Conversion training is specific to the aircraft type the crew member will be assigned duties and the associated operator specific processes and procedures. It is required before first being assigned by the operator as a cabin crew member and when assigned to operate on a different aircraft type. Conversion training will normally follow the initial training, although the two training programs may be integrated. Training will include safety and emergency equipment, safety and emergency procedures, training checks, supervised line flying and a line check. During the training, the crew member should have been assessed as successfully completing HF and NTS training to a knowledge, awareness and skill level.

GM 121.625 Application of Subpart 121.P

This regulation sets out the applicability of Subpart 121.P. All divisions in this subpart, except for Division 121.P.7, apply to flights where a cabin crew member is required to be carried. Division 121.P.7 captures only those flights where a cabin crew member is carried but not required by regulation 121.630; the rest of Subpart 121.P does not apply to these flights.

At any time when a cabin crew member is carried for a flight, it is essential that they are appropriately trained for the duties they will be expected to perform.

Where aircraft from the same manufacturer are similar in relation to emergency exit operation, location and type of portable safety and emergency equipment, and type-specific emergency procedures, CASA may give approval for the operator to consider the two aeroplane types as one type, for the purposes of this Subpart (refer to Section 11.3.1 GM 121.685 Application of Division 121.P.3 for further guidance on the determination of aeroplane type/s). CASA may, in granting the approval, give direction to the operator to include training for the purposes of meeting the differences between the types.

GM 121.630 When cabin crew are required

Cabin crew members are required for a passenger transport flight of an aeroplane which has more than 19 passenger seats installed or has more than nine (9) passenger seats installed but is certificated to carry more than 19 passengers.

9.2 Division 121.P.2 — General

GM 121.635 Number of cabin crew

The main difference between single aisle and twin aisle aeroplanes is that in calculating the number of cabin crew required for a flight in a twin aisle aeroplane, the number of floor level exits on the aeroplane needs to be considered.

When determining the minimum number of cabin crew required for a specific aircraft cabin configuration, the operator should request information regarding the minimum number of cabin crew established by the aeroplane type certificate (TC) holder (see demonstration number below).

The flight base number is:

- the number of cabin crew required for a flight based on the greater of:
  - one cabin crew for each passenger compartment

    or
  - for aircraft with a maximum operational passenger seat configuration (MOPSC) of more than 19, one cabin crew member for each 50, or part of 50, passenger seats fitted to the aircraft (i.e. a 1:50 ratio).

The *demonstration number* is:

- the number of cabin crew who actively participated in the aircraft cabin during the relevant emergency evacuation demonstration, or who were assumed to have taken part in the relevant analysis, as carried out by the aircraft TC holder when demonstrating the maximum certificated passenger seating capacity of the aeroplane type at the time of initial type certification.

The *demonstration additional number* is:

- the number by which the demonstration number exceeds the flight base number.

Reduced *demonstration additional number*:

The demonstration additional number may be reduced with approval by CASA. Applicants for this approval are advised that in order for CASA to be able to determine that the level of aviation safety remains at least acceptable in accordance with paragraph 11.055(1B)(b) of CASR, CASA will request the operator to conduct a full emergency evacuation demonstration in order to demonstrate that their procedures with the lower number of cabin crew for the configuration and passenger seating capacity of the aircraft meet the evacuation requirements. Note that the reduced *demonstration additional number* could be zero.

Example:

Aircraft A has a maximum certificated passenger seating capacity of 335. During the emergency evacuation demonstration, nine (9) cabin crew were used to meet the evacuation requirements. Using the 1:50 ratio, a 335-passenger seating capacity would require seven (7) cabin crew (*flight base number*). Therefore, for this aircraft, the demonstration additional number is:

- 9 (demonstration number) - 7 (flight base number) = 2.

The new operator wishes to utilise this aircraft, but only with a MOPSC of 280. In this case, using the 1:50 ratio, the *flight base number* is 6.

To comply with regulation 121.635, the number of cabin crew must be at least the greater of:

- the sum of the flight base number and the demonstration additional number
- the number of floor level exits on the aeroplane (if twin aisles).

In this example, Aircraft A has twin aisles with 6 floor level exits. Therefore, the minimum number of cabin crew required is:

- 6 (flight base number) + 2 (demonstration additional number) = 8.

However, the operator has successfully performed a full emergency evacuation demonstration to CASA with seven (7) cabin crew, thereby verifying that their procedures are adequate to allow for the demonstration additional number to be reduced to 1. So now the minimum number of cabin crew for the configuration will be: 6 (flight base number) + 1 (reduced demonstration additional number) = 7.

AMC 121.640 Qualifications, experience and training

Subregulation 121.640(3) – requirement to obtain an approval under regulation 121.010 to conduct training or checking involving safety and emergency equipment

GM 121.640 outlines the regulatory provisions that allow CASA to test an applicant for this approval.

The information in this section outlines an acceptable means of compliance regarding the requirements whereby CASA may accept the results of a test conducted by a senior instructor (i.e., a person other than CASA) as being suitable for consideration of issuing an applicant an approval under regulation 121.010 required by subregulation 121.640(3).

The requirements of this AMC are that:

- the operator's training and checking system must include an additional course of training for persons to become "Senior Safety and Emergency Equipment Instructors" (or similar name)

Note: These senior instructors would be the persons that test an individual seeking the relevant approval. CASA remains responsible for issuing the approval and assessing the application. The presence of the senior instructors, with a defined course of training to develop and qualify these persons, provides assurance to CASA regarding the suitability of the applicant for the approval.

- the operators processes will clearly track when the senior instructor was last assessed by CASA with a preference to only use instructors who have been observed by CASA in the last 2 years.
- any non-significant change to the course of training will be notified to CASA prior to the operator commencing use of the amended course.

Note: A significant change requires approval prior to implementation. For a non-significant change, the operator will receive an acknowledgement that CASA has received the revised material.

GM 121.640 Qualifications, experience and training

Section 5 and schedule 1 of the CASA EX161/21 instrument collectively grant the approval required by subregulation 121.640(3) in relation to persons approved to conduct training or checking involving safety or emergency equipment to the holders of approvals in force under the pre-2 December 2021 rules. It is recommended that operators review section 5 and schedule 1 of CASA EX161/21.

This regulation sets out the training and experience a cabin crew member must meet prior to being assigned for duty for a flight.

As a general guide to being cabin safety supervisory personnel: read CASA's Cabin Safety Supervisory Personnel Guide.

Training or checking involving safety or emergency equipment

Subregulation 121.640 (3) requires a person conducting training or checking involving safety or emergency equipment to hold an approval. The processes associated with the training, nomination and ongoing competency of the approved person in conducting the training and checking functions, will be set out in the operator's exposition.

Operators are reminded that CASA inspectors do not hold this approval and cannot sign off on the competency of crew members conducting this training or checking. CASA staff are limited to assessing the competency of the person seeking to hold this approval, or persons already holding the approval.

When evaluating an application for approval of a person to conduct training or checking involving safety or emergency equipment, CASA will appropriately consider the matters mentioned in regulations 11.050 and 11.055. As guidance, CASA's consideration is likely to include a review of the following things in relation to the applicant:

- their qualifications and experience, including any existing instructional and assessment competencies
- the training they have undertaken for the role
- their knowledge and understanding of applicable legislation
- their knowledge of the operator's safety and emergency equipment and procedures.

All applicants seeking approval under regulation 121.010 should be aware that regulation 11.035 permits CASA to require the applicant to undertake a test of knowledge, skill or competence. Where this is required, CASA must give written notice to the individual. Such an assessment is likely to include direct observation of the applicant conducting the relevant training or check activity.

Refer to AMC 121.640(3) for details of where CASA may elect to accept the results of a test conducted by a person other than CASA.

The suitability of an applicant will also depend on the suitability of the operator's training and checking system procedures for how a person is trained and assessed as being competent to perform a training or checking role for the operator. Some matters (but not all) that CASA might consider when reviewing the suitability of the operator's procedures in this area include:

- the organisational structure and methods of identifying the persons responsible for internal training and assessment of trainers and checkers within that structure
- the proficiency of the operator's other trainers and checkers in assessing the competence of persons to conduct training and checking involving safety or emergency equipment
- the operator's process for verifying ongoing competency of persons holding an approval
- the operator's process for ensuring standardisation if multiple training or checking personnel are used.

Exception to prescriptive requirements

Subregulation 121.640 (4) provides the opportunity for an operator to have an approved training and checking system which will meet the training and checking requirements mentioned in subregulation 121.640 (2), albeit by an alternative means of compliance. This will allow an operator to demonstrate to CASA a program which provides the same standard of training and checking as in subregulation 121.640 (2), but designed around different time

frames or combinations of training and checking content, and hence more suitable to the needs of the operator.

As an example, an operator may propose to use a training matrix to manage the 3 yearly training and checking requirements, rather than covering all of the mandatory requirements concurrently 3 years after initial training (see Table 1). The program may include different 3 yearly components into the annual training recurrent program in the year they become due. Provided the program provides an equivalent standard and validity periods and records are maintained, CASA can issue an approval.

Table 6: Cabin crew 3 yearly training cycle

	Slide	Fire Drills	Effects of Smoke	Signalling equipment	Life Rafts	Pilot Incapacitation
Year 1		X	X			
Year 2				X	X	
Year 3	X					X

Refer to AC 119-11 - Training and checking systems for further guidance.

GM 121.645 Competence

Regulation 121.645 provides that an operator must have assessed the crew member as being competent to perform the duty assigned to them. These regulations are not meant to be a one-size-fits-all set of regulations, and it is imperative that operators formulate their own specific set of equal or better standards after thorough assessment of their operational characteristics. Appropriate use of Training Needs Analysis with input from the SMS will be crucial in this development. Operations identified by the SMS as having a higher degree of difficulty may require higher training or checking standards than those set out in these regulations.

As competence is a combination of related attributes including knowledge and skill, it is important that the operator's system for training and determining competency accounts for both. Knowledge refers to theoretical information acquired about a subject whereas skills refer to practical application of that knowledge. Knowledge can be learned whereas skills require practical exposure i.e., knowing does not make you skilled.

Both knowledge and skills decay over time. The degree of decay varies with time, but some decay could be present as soon as 2-6 weeks after training. The timeframe and extent of decay is influenced by factors such as the type of knowledge/skill, complexity of the subject matter, strategies for slowing decay (e.g., practice) and the effectiveness of the provided training (e.g. delivery method, regularity of assessments).

The regulations provide baseline timeframes for the programming of recurrent and refresher training. Competency-based training should be guided by empirical data to ensure maintenance of skills and knowledge throughout the retention interval. The operator should employ the SMS in this regard to verify the appropriateness of the timeframes implemented in ensuring ongoing competency of their cabin crew and adjust as necessary.

Procedures should also be incorporated into the training and checking system for cabin crew who fail to maintain an adequate standard of competency in their duties. Regulations cannot prescribe the remedial training required and an operator should take reasonable steps to assist in bringing the cabin crew member back to a suitable level of competency.

An assessment of competence for a cabin crew member must ensure that the individual is physically able to perform their duties for a flight in normal and abnormal procedures. This will include being able to open emergency exits without power assist mechanisms, assist passengers in an emergency evacuation and any other duty as required by the operator's exposition.

GM 121.650 Minimum age

Reserved

GM 121.655 English proficiency

The requirements for English language proficiency that must be met by a person assigned to duty as a cabin crew member are contained in Division 1 of Chapter 13 of the Part 121 MOS.

GM 121.660 Assignment to duty as senior cabin crew member

For operations where more than one cabin crew member is required for the flight, a senior cabin crew member must be nominated by the operator before the flight begins. The senior cabin crew member is accountable to the PIC.

The intention of assigning a cabin crew member as the senior member of the crew is to establish a chain of command. The senior cabin crew member shall be responsible to the PIC for the conduct and coordination of normal and emergency procedures specified in the operations manual, including discontinuing non-safety-related duties for safety or security purposes. As an example, when the level of turbulence so requires, and in the absence of any instructions from flight crew, the senior cabin crew member may elect to instruct all cabin crew to discontinue non-safety-related duties and advise the flight crew of the level of turbulence being experienced and the need for the seat belt signs to be switched on.

The operator's minimum experience and qualifications required for the senior cabin crew member should be set out in the operator's exposition.

Start-up operators should establish alternative minimum experience requirements acceptable to CASA, noting that previous experience may be taken into consideration.

Considerations for when an assigned senior cabin crew member becomes unavailable are detailed in GM 121.665.

GM 121.665 Training and checking for senior cabin crew member

The MOS content for this regulation is contained in Division 2 of Chapter 13 of the Part 121 MOS.

Senior cabin crew must have successfully completed a training program and check of competency specific to the duties of the senior cabin crew member which provides the specialised competencies and skills required to assume the role.

The training is to enable the senior cabin crew member to carry out all the specific tasks they are assigned during day-to-day operations and normal, abnormal and emergency situations in order to participate in the safe operation of aircraft. The training should encompass specific aspects of the operator's standard operating procedures, including the management of emergencies, administration duties for a flight, flight time limitations and rest requirements as well as human factors and non-technical skills training.

Refer to GM 121.675 for information regarding circumstances where a second senior cabin crew member is assigned to duty.

Senior cabin crew unable to operate

A senior cabin crew member who didn't report for or can't commence their assigned flight/s originating from a base of the operator should be replaced without undue delay. The flight should not depart unless another senior cabin crew member has been assigned.

A senior cabin crew member who becomes incapacitated during the assigned flight/s, or unavailable at a stopover (layover) point, should be replaced without undue delay by another senior cabin crew member qualified on the concerned aircraft type/variant. If there is no other senior cabin crew member, the most appropriately qualified cabin crew member should be assigned to act as senior cabin crew member to reach a base of the operator. If during the assigned duty the aircraft transits via a base of the operator, the assigned cabin crew member acting as senior cabin crew member should be replaced by another senior cabin crew member.

The operator should establish procedures to select the most appropriately qualified cabin crew member to act as senior cabin crew member if the nominated senior cabin crew member becomes unable to operate. Selection of the most appropriately qualified cabin crew member should consider if the individual's experience as an operating cabin crew member is adequate for the conduct of duties required of a senior cabin crew member. The selected cabin crew member should have adequate operational experience on the concerned aircraft type/variant.

To ensure that another senior cabin crew member is assigned without undue delay, the operator should take appropriate measures. Examples include, but are not limited to, the following:

- where possible, the operator should consider including the identification of the most appropriately qualified cabin crew member in pre-flight briefings
- where the flight/s depart from an aerodrome where a senior cabin crew member is available or can be made available, the operator may:
  - appoint a senior cabin crew member originally assigned to another flight and who is available at the concerned base or stopover (layover) point if the reporting time for that flight provides sufficient time to find a replacement
  - assign a senior cabin crew member who is on standby to operate the flight or to position to the destination where the nominated senior cabin crew member has become incapacitated or unavailable to operate
  - utilise another senior cabin crew member if they are among the operating crew on the same flight

- where a senior cabin crew member becomes unavailable, the operator should use the available time and resources to replace them at the stopover (layover) point with another senior cabin crew member.

GM 121.670 Operating with reduced number of cabin crew

In unforeseen circumstances beyond the control of the operator, the minimum number of cabin crew required for a flight by regulation 121.635 may be reduced with the following considerations under regulation 121.670:

- a flight must not commence with less than the minimum number of cabin crew from a place where a cabin crew base for the aeroplane type is established
- the reduced number of cabin crew must still include a senior cabin crew member in accordance with regulation 121.660
- procedures for operating with a reduced number of cabin crew should ensure an equivalent level of safety
- a reduction of passenger numbers
- for a twin aisle aeroplane, each floor level exit immediately forward and aft of a passenger occupied zone must be manned by a cabin crew member. Any floor level exit pairs in the vacant passenger zones must have at least one cabin crew member on duty at a cabin crew seat adjacent to one of the floor level exits
- relocation of cabin crew and any change of procedures are specified in the exposition
- the management, training and checking of dual exit operation must be established in the exposition
- procedures for briefing and reseating of passengers with due regard to doors/exits and other applicable limitations must be included in the exposition
- CASA must be notified as soon as practicable of the circumstances and the procedures implemented for the flight with the reduced cabin crew number. CASA will review the frequency of the occurrences for an operator and, if required, issue a direction as allowed under Part 119 that may suspend or alter the circumstances allowing flight with a reduced number of cabin crew.

When developing specific procedures to ensure that an equivalent level of safety is maintained for operating with a reduced number of cabin crew, the operator should consider at least the following:

- normal procedures including:
  - surveillance of the passenger compartment, including the lavatories and the galleys
  - management of, and assistance to, passengers
  - crew communication and coordination, including the necessary contact with and support to the flight crew as specified by the operator
  - re-assigning duties and responsibilities of cabin crew members or senior cabin crew members taking in-flight rest
- emergency procedures including at least those to be applied in the case of:
  - medical emergency

  - unruly behaviour
  - unlawful interference or bomb threat
  - depressurisation
  - fire or smoke event
- emergency descent, taking into account that the procedure to be applied may vary depending on the causing event (e.g., depressurisation or fire).
- assigning a supernumerary flight crew member for take-off and landing to an emergency exit that would otherwise be uncrewed, in accordance with the following:
  - the exit remains the primary responsibility of the cabin crew member who delegates the actions to be taken in an emergency evacuation to the flight crew member
  - the flight crew member is in addition the minimum cabin crew requirements of regulation 121.670
  - the flight crew member has completed the required training, e.g. the training mentioned in subsections 12.15(3) and (7), and sections 12.17, 12.18, 12.19, 12.29 and 12.32 of the Part 121 Manual of Standards.

GM 121.675 Second senior cabin crew member

This regulation provides a requirement for the operator to nominate a second senior cabin crew member for the flight. This crew member will not have to go through the same training as the senior cabin crew member, but the operator should select appropriately experienced crew who would assist the senior cabin crew member in normal, abnormal and emergency procedures.

The operator should specify the duties required for the second senior crew member for a flight. The intent is that the senior cabin crew member will have another crew member in a part of the passenger cabin where they may be limited in their ability to manage, e.g., the upper deck of an aeroplane or the rear of the aeroplane on a medium to large size aeroplane.

Duties should include but not be limited to:

- preparing cabin for arrival/departure
- monitoring other cabin crew to ensure all safety requirements are met for a flight (e.g., no baggage in aisles)
- managing that part of the cabin in an emergency.

GM 121.680 Training facilities and devices

This regulation provides for standards to be met by operators or their approved training organisations for training facilities and devices. The minimum requirements are outlined in Division 3 of Chapter 13 of the Part 121 MOS.

The operator should take into account that training facilities and devices may be used to train cabin crew as an alternative to the use of the actual aircraft or equipment.

Refer to AC 119-11 - Training and checking systems for further guidance on training facilities and devices.

9.3 Division 121.P.3 — Operation of aeroplanes of different aeroplane types

GM 121.685 Application of Division 121.P.3

The requirements of Division 121.P.3 apply to operators operating more than one aeroplane type. CASA provides the following guidance in relation to what is considered an aeroplane type.

The concept of an aeroplane type for cabin crew should not be confused with the requirements in Part 61, which in certain cases permit a pilot to operate multiple aircraft types under a single common pilot type rating. For example, although covered by a common pilot type rating, the A320 and A321 are separate aeroplane types for the purposes of cabin crew qualification, training and competency.

Variants of an aircraft type are considered to be a different type if they are not similar in the following aspects:

- emergency exit operation
- location and type of portable safety and emergency equipment
- type-specific emergency procedures.

GM 121.690 Content of exposition in relation to aeroplane types

This regulation requires the operator to state in their exposition the different aeroplane types operated under the AOC for the purpose of assigning cabin crew and associated training and checking requirements.

The operator shall determine each aeroplane as a type or variant. The following factors should be considered when determining whether a variant of an aeroplane type is itself a different type.

Similarity of doors and exits in relation to:

- exit arming/disarming
- direction of movement of the operating handle
- direction of door/exit opening
- power assist mechanisms
- assisting evacuation means, e.g., slides, escape ropes.

Similarity of location and type of safety and emergency equipment in relation to the following:

- all portable safety and emergency equipment is stowed in the same, or in exceptional circumstances, in substantially the same location
- all portable safety and emergency equipment require the same method of operation
- portable safety and emergency equipment includes:
  - firefighting equipment
  - protective breathing equipment (PBE)
  - oxygen equipment
  - crew life jackets

  - torches
  - megaphones
  - first aid equipment
  - survival and signalling equipment
  - other safety and emergency equipment, where applicable.

Type-specific emergency procedures are essentially the same, including but not limited to:

- land and water evacuation
- in-flight fire
- depressurisation
- pilot incapacitation.

Aeroplane variants not meeting these criteria are considered to be different aeroplane types.

GM 121.695 Maximum number of aeroplane types

There is an exemption in force in relation to this regulation which results in an operator being able to gain an approval for cabin crew to conduct duties on four aeroplane types, instead of the individual cabin crew member needing to hold the approval. It is recommended that operators review section 14H of CASA EX83/21. The approval mentioned in the exemption is taken to be a significant change due to it activating paragraph 119.020(c) of CASR. Operators are to apply for this approval by applying for a significant change via the Air Operator's Certificate / Associated Approvals form available on CASA's website.

For the purposes of an approval for a cabin crew member to be qualified on a fourth aeroplane type, CASA will consider this where the operator can demonstrate that on at least two of the types:

- safety and emergency equipment and type-specific normal and emergency procedures are similar
- non-type-specific normal and emergency procedures are identical.

GM 121.700 Assignment to different aeroplane types

The intent of this regulation is to ensure that an operator has procedures in place to manage the risks involved with multi-fleet flying by a cabin crew member.

The procedures should address at least the following:

- combinations of aeroplane types the cabin crew member could be assigned
- recency on type
- measures in place to ensure a cabin crew member is adequately prepared for duty on a different aeroplane type, after completing a flight on another aeroplane type in the same duty period.

When changing aircraft type during the same duty, the cabin crew safety briefing should include a sample of type-specific normal and emergency procedures and safety and emergency equipment applicable to the aircraft to be operated on subsequent flight sectors.

9.4 Division 121.P.4 — Recent experience

GM 121.705 Recent experience requirements—6 months before flight

There is an exemption in force in relation to this regulation. It is recommended that operators review section 14 of CASA EX83/21.

This regulation sets out the recency requirements for cabin crew before a flight. If the cabin crew member has not flown on the aeroplane type (supervised or unsupervised) in the six month period prior to a flight, then they must complete the operator's refresher training.

The purpose of the operator's refresher training program is to ensure the cabin crew member's competence to operate before being reassigned duties on the aeroplane type. The complexity of procedures and equipment for the aeroplane type should be considered in determining the structure and content of the refresher training program.

Cabin crew has not performed ANY flying duties in the preceding 6 months

Where a cabin crew member has not performed any flying duties in the preceding 6 months, it is recommended that the refresher training program cover at least the following for each aircraft type:

- emergency procedures, including crew incapacitation
- evacuation procedures
- operation and actual opening of each emergency exit in normal and emergency mode, including failure of power assist
- a demonstration of the operation of all other exits, including the flight crew compartment exits
- location and handling of all relevant safety and emergency equipment
- communication systems
- standard operating procedures.

Cabin crew has not performed flying duties on one aeroplane type in the preceding 6 months

Where a cabin crew member has not performed flying duties on one particular aircraft type in the preceding 6 months, the refresher training is recommended to consist of at least two familiarisation flights under the supervision of an in-flight trainer, where the cabin crew member is additional to the minimum number of crew required (i.e., the in-flight trainer would form part of the minimum number of crew as they are fully current). The cabin crew member lacking recency would normally be the person performing the required cabin crew member duties, under the supervision of the in-flight trainer. However, it is recommended that operators consider whether an initial period of the cabin crew member observing the in-flight trainer performing the operational actions is necessary in situations where the cabin crew members' flying in the last 6 months has been on an aeroplane type whose procedures are considerably different to the aeroplane type on which they are being refreshed.

Qualifications and training requirements for in-flight trainers should be described in the operator's exposition. Approval by CASA is not required for this position.

Refer to AC 119-11 - Training and checking systems for further guidance on refresher

training.

9.5 Division 121.P.5 — Non-recurrent training and checking

AMC 121.710 Meeting initial training requirements – water survival training

Subparagraph 13.19(4)(b)(ii) of the Part 121 Manual of Standards – practice using life-raft equipment in water

The information in this section outlines an acceptable means of compliance regarding what constitutes “practice using life-raft equipment in water” for a cabin crew member as required by subparagraph 13.19(4)(b)(ii) of the Part 121 Manual of Standards.

For the purposes of the previously mentioned MOS subparagraph, mock-up equipment that enables the cabin crew member (CCM) to demonstrate practical proficiency in the use of equipment being replicated is considered an acceptable means of compliance. For example, real day/night flares do not have to be used if there is a flare mock-up that replicates the features the CCM needs to recognise and manipulate to operate it effectively, such as colour, sensory markers, screw top, pull ring etc.

Subsections 13.20(1) and (2) of the Part 121 Manual of Standards – cabin crew first-aid training

The information in this section outlines an acceptable means of compliance regarding what constitutes “first-aid training” for a cabin crew member as required by subsections 13.20(1) and (2) of the Part 121 Manual of Standards.

For the purposes of the previously mentioned MOS subsection, first-aid training provided by external providers is an acceptable means of compliance, provided the details of the training and the provider are included in the operator’s exposition and the persons conducting the training are qualified to provide the training, i.e., a nationally recognised training organisation.

For clarity, the requirements of subsection 13.20(3) still apply to the training delivered by an organisation of the kind mentioned above.

Where an operator chooses to use an external provider, the operator should remain aware that the requirements regulations 119.130, 119.150 and subpart 119.E remain applicable.

GM 121.710 Meeting initial training requirements

Initial training is effectively 'induction training' where a new crew member is introduced to the operator’s exposition. The minimum requirements for initial training are contained in Division 4 of Chapter 13 of the Part 121 MOS.

This training is to provide an insight to the operator’s procedures, both normal and abnormal, as well as general survival skills and first aid. This is an ideal opportunity for the operator to expose the new crew member to their operating environment and to instil in the crew member their responsibilities in maintaining a safe and professional work ethic. The initial training ground school should be designed to prepare the crew member to enter the conversion training program.

Elements of the initial training program may be combined with the first aircraft type conversion training where appropriate, provided that the initial training requirements are met and accurately recorded.

Training elements other than those required by regulation 121.710 may form part of the initial ground training program including:

- human factors and non-technical skills (HF/NTS)
- dangerous goods (DG)
- safety management system (SMS)
- fatigue risk management system (FRMS)
- drug and alcohol management plan (DAMP)
- security.

Refer to AC 119-11 - Training and checking systems for further guidance on initial training.

GM 121.715 Meeting conversion training requirements

Conversion training is specific to the aircraft type to which the crew member will be assigned duties, and the associated operator-specific processes and procedures. It is required before first being assigned by the operator as a cabin crew member, and when assigned to operate on a different aircraft type. The minimum requirements for conversion training are contained in Division 5 of Chapter 13 of the Part 121 MOS.

The first conversion course for a cabin crew member may be combined with the initial training as stated above. The training is focused on type-specific safety and emergency equipment and procedures.

Training will include safety and emergency equipment, safety and emergency procedures, training checks, supervised line flying and a line check. The training checks must demonstrate the competency of the cabin crew member in performing their duties in normal and abnormal procedures and meet the requirements of the annual and 3-yearly training checks for the aeroplane type. It should be noted that the supervised line flying component of conversion training can only be conducted after the cabin crew member has successfully completed the training checks.

During the training, the cabin crew member should have been assessed as successfully completing human factors and non-technical skills training to a knowledge, awareness and skill level.

Supervised line flying

Supervised line flying provides the opportunity for a cabin crew member to carry into practice, on a specific aeroplane type, the procedures and skills they have been made familiar with during the ground-based component of conversion training. It should be a structured program that commences within a specified number of days of completing the conversion training checks and conducted on normal line operations that provide exposure to a representative range of activities conducted by the operator.

At the end of supervised line flying, the respective crew member should be able to conduct a safe and efficient flight performing the tasks of their crew member station including pre-flight, in-flight, pre-landing and post-flight duties.

The operator's exposition must describe the supervised line flying a cabin crew member will complete prior to undertaking the initial line check, giving due regard to the following:

- the cabin crew member is assigned in addition to the minimum number of cabin crew required in accordance with regulation 121.635
- the supervised line flying is conducted under the supervision of a suitably qualified cabin crew member trained for the task
- it is conducted over a minimum number of sectors.

In determining the minimum sector requirements in the exposition, the operator should consider the previous experience of the cabin crew member and the complexity of the aeroplane and type of operation.

Supervised line flying is followed by a line check to verify the cabin crew member's competence to operate unsupervised. Successful completion of the line check releases the cabin crew member to unsupervised operations and signifies their introduction into the recurrent training and checking program.

Refer to AC 119-11 - Training and checking systems for further guidance on conversion training.

Rapid disembarkation

Section 13.29 of the Part 121 MOS uses the term 'rapid disembarkation'. This term is not defined in the civil aviation legislation.

CASA provides the following advice on this term:

- A rapid disembarkation is an expedited egress from the aircraft in situations assessed by the crew members as deviating from normal conditions but not being an immediate emergency, i.e., not posing an immediate threat to passenger and crew members on board, but which may escalate into an emergency.
- It is an intermediate procedure between normal disembarkation and an emergency evacuation and is beneficial for operators in managing some abnormal situations, e.g., smoke or fumes in the cabin, fuel spills, fire in proximity of the aircraft, bomb threat.
- Rapid disembarkation can be initiated at any time the aircraft is on the ground with passengers on board and boarding equipment is in place such as aerobridge(s), boarding stairs and internal aircraft stairs. It is more likely to happen at the airport and be initiated in response to an occurrence involving some aspect of pre or post flight ground activity, e.g., fuelling, aircraft inspections and baggage handling.
- Passengers and crew members would normally leave their belongings on board during a rapid disembarkation.
- Emergency exits and slides are not used in a rapid disembarkation unless the situation escalates and the crew decide that it has become necessary to initiate an emergency evacuation. As passengers may not appreciate the important difference

between rapid disembarkation and emergency evacuation, it is important that instructions to the passengers are clear and unambiguous.

- The specific words used in the instructions given by crew members to passengers for a rapid disembarkation will be different from that to conduct an emergency evacuation.
- When developing procedures for a rapid disembarkation, it is recommended that operators give consideration to the following:
  - responsibility for initiating a rapid disembarkation
  - the circumstances under which a rapid disembarkation is an appropriate course of action
  - the method by which it will be achieved
  - crew communication
  - communication with other safety personnel e.g. ground handlers
  - instructions to passengers
  - escalation to an emergency evacuation.

GM 121.720 Meeting differences training requirements

The operator shall ensure the cabin crew member receives appropriate training and checking covering differences before being assigned on a variant of an aeroplane type, or aeroplanes of the same type that are different in relation to the following:

- safety and emergency equipment or location
- emergency exit operation or location
- normal or emergency procedures.

The differences training program should be determined based on a comparison with previous training programs completed by the cabin crew member, as documented in their training records.

Refer to AC 119-11 - Training and checking systems for further guidance on differences training.

9.6 Division 121.P.6 — Recurrent training and checking

GM 121.725 Annual training and holding valid annual training check

This regulation sets out the requirements for the ongoing maintenance of competency for a cabin crew member in the use of safety and emergency equipment and the operator's abnormal and emergency procedures for each aeroplane type. The minimum requirements for annual training are contained in Division 6 of Chapter 13 of the Part 121 MOS.

Refer to AC 119-01 - Training and checking systems for further guidance on annual training.

Annual training check

The annual training check is valid for 1 year from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 7 for an example of a possible annual training check tracking card:

Table 7: Possible annual training check tracking card example

Annual training check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 22	Initial qualification.
27 Mar 22	31 Mar 23	Because this check has been conducted more than 3 months prior to the expiry, it forces a reset of the expiry date.
01 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.
01 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.
01 May 25	31 May 26	The individuals check was expired between 31 Mar and 01 May, therefore the check date resets based on the most recent check.

Practical training and checking

The intent of the practical training and checking requirements is to ensure the cabin crew member (CCM) receives training appropriate to the duties that they may have to perform in an emergency, and that they maintain their competence in the practical application of the skills required to perform those duties. Continuing to practice a skill after competence has been acquired is one of the strongest moderators of skills decay.

The practical training required is dependent on the circumstances of the operational environment. For example, the duties of a single cabin crew member will differ to those of cabin crew operating in a multi-crew environment.

When developing the practical training and checking components of the program, it is recommended that operators consider the following factors:

- the practical exposure required to acquire and maintain skills, and mitigate skill decay
- whether the training or checking provides sufficient assurance of competence under fatigue and/or stress
- what circumstances would influence the successful conduct of an emergency evacuation, e.g., co-ordination with other crew members, FCM entering the cabin whilst the evacuation is already occurring, crew incapacitation, blocked exits

- the scope of CCM emergency duties, e.g., use of able-bodied passengers, communication with the flight crew and passengers, retrieving emergency equipment, managing crew incapacitation, post evacuation tasks
- any peculiarities or challenges associated with retrieving emergency equipment, e.g., accessing and releasing equipment from stowage locations/brackets
- the extent to which training aids/mock-ups replicate the features of the equipment crew need to recognise and manipulate to operate it effectively, e.g., colour, triggers, pull tabs, pins.

Where practical training is not mandated, it is up to the operator to determine the most appropriate method of delivering the training to meet the requirements, however, competence in the duties assigned will still need to be verified, e.g., use of survival equipment.

Rapid disembarkation

Section 13.34 of the Part 121 MOS uses the term ‘rapid disembarkation’. This term is not legally defined in the civil aviation legislation.

CASA provides the following advice on this term:

- A rapid disembarkation is an expedited egress from the aircraft in situations assessed by the crew members as deviating from normal conditions but not being an immediate emergency, i.e., not posing an immediate threat to passenger and crew members on board, but which may escalate into an emergency.
- It is an intermediate procedure between normal disembarkation and an emergency evacuation and is beneficial for operators in managing some abnormal situations, e.g., smoke or fumes in the cabin, fuel spills, fire in proximity of the aircraft, bomb threat.
- Rapid disembarkation can be initiated at any time the aircraft is on the ground with passengers on board and boarding equipment is in place such as aerobridge(s), boarding stairs and internal aircraft stairs. It is more likely to happen at the airport and be initiated in response to an occurrence involving some aspect of pre or post flight ground activity, e.g., fuelling, aircraft inspections and baggage handling.
- Passengers and crew members would normally leave their belongings on board during a rapid disembarkation.
- Emergency exits and slides are not used in a rapid disembarkation unless the situation escalates and the crew decide that it has become necessary to initiate an emergency evacuation. As passengers may not appreciate the important difference between rapid disembarkation and emergency evacuation, it is important that instructions to the passengers are clear and unambiguous.
- The specific words used in the instructions given by crew members to passengers for a rapid disembarkation will be different from that to conduct an emergency evacuation.
- When developing procedures for a rapid disembarkation, it is recommended that operators give consideration to the following:
  - responsibility for initiating a rapid disembarkation

- the circumstances under which a rapid disembarkation is an appropriate course of action
- the method by which it will be achieved
- crew communication
- communication with other safety personnel e.g. ground handlers
- instructions to passengers
- escalation to an emergency evacuation.

GM 121.730 Holding valid line check

Line checks are a test of an individual cabin crew member's ability to perform line operational safety duties and responsibilities specified in an operator's exposition and should be tailored to the cabin crew member's role. As one example, a senior cabin crew member should be checked in that position.

A line check is intended to ensure the individual cabin crew member can operate effectively under normal conditions, whereas annual and 3 yearly training is primarily intended to prepare the crew member for abnormal/emergency procedures.

An operator should ensure that the line check is conducted:

- for each individual cabin crew member to demonstrate their competence in carrying out normal line operations in accordance with safety-related procedures described in the operator's exposition
- by suitably qualified personnel approved by the operator to conduct the check and specified in the exposition.

Where the person conducting the check is not additional to the minimum cabin crew numbers for the flight, consideration should be given to the ability of the crew member to complete both the assigned line operations duties and line checking duties.

Line checks can be a particularly important factor in the development, maintenance and refinement of high operating standards, and can provide the operator with a valuable indication of the usefulness of their training policy and methods.

A line check is valid for 1 year from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 8 for an example of a possible line check tracking card:

Table 8: Possible line check tracking card example

Line check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 22	Initial qualification
27 Mar 22	31 Mar 23	Because this check has been conducted more than 3 months prior to the expiry, it forces a reset of expiry date.
01 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.

01 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.
01 May 25	31 May 26	The individual's check was expired between 31 Mar and 01 May, therefore the check date resets based on the most recent check

Where an operator assigns duties to a cabin crew member on more than one aeroplane type, it may be appropriate for an annual line check to be conducted on one type provided there are sufficient similarities in the standard operating procedures. For example, a line check conducted on a F70 with similar standard operating procedures to a F100 may be sufficient to verify the cabin crew members competence in the duties assigned for both types.

The operators exposition should evidence how an annual line check on one aeroplane type provides assurance of the crew members ongoing competence to carry out the safety duties and responsibilities on other types they are assigned, to support a single line check event being valid for more than one type. Consideration should also be given to ensure appropriate processes are in place to monitor line check validity of cabin crew members, and a mechanism to ensure cabin crew members are exposed to different aircraft types at subsequent line checks.

GM 121.735 Three yearly training and holding valid 3 yearly training check

The 3 yearly training is focused on practical training that is not otherwise covered in the annual training check. Elements such as the use of life rafts and their associated equipment, signalling equipment, smoke and fire training, and pilot incapacitation procedures are all covered in Division 7 of Chapter 13 of the Part 121 MOS for 3 yearly training and checking for cabin crew.

Some of the matters required for the 3 yearly training check are generic in nature, e.g. effects of smoke in an enclosed area, and some require consideration of differences in the aircraft types being operated by the crew. If the differences between aircraft types affect the knowledge, skills or performance required of cabin crew, the 3 yearly training check needs to accommodate training and assessment of competency in those differences, e.g. for pilot incapacitation, the inclusion of any differences in equipment location, characteristics, operating mechanisms or use, is applicable.

Refer to AC 119-11 - Training and checking systems for further guidance on 3 yearly training.

3-yearly training check

The 3 yearly training check is valid for 3 years from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 9 for an example of a possible 3 yearly training check tracking card:

Table 9: Possible 3 yearly training check tracking card example

3 yr SEP check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 24	Initial qualification.
27 Mar 24	31 Mar 27	Because this check has been conducted more than 3 months prior to the expiry, it forces a reset of the expiry date.
01 Feb 27	31 Mar 30	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 3 years.
01 Jan 30	31 Mar 33	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 3 years
01 May 33	31 May 36	The individual's check was expired between 31 Mar and 01 May, therefore the check date resets based on the most recent check.

Practical training and checking

The intent of the practical training and checking requirements is to ensure the cabin crew member (CCM) receives training appropriate to the duties that they may have to perform in an emergency, and that they maintain their competence in the practical application of the skills required to perform those duties. Continuing to practice a skill after competence has been acquired is one of the strongest moderators of skills decay.

The practical training required is dependent on the circumstances of the operational environment. For example, the duties of a single cabin crew member will differ to those of cabin crew operating in a multi-crew environment.

When developing the practical training and checking components of the program, it is recommended that operators consider the following factors:

- the practical exposure required to acquire and maintain skills, and mitigate skill decay
- whether the training or checking provides sufficient assurance of competence under fatigue and/or stress
- what circumstances would influence the successful conduct of an emergency evacuation, e.g., co-ordination with other crew members, FCM entering the cabin whilst the evacuation is already occurring, crew incapacitation, blocked exits
- the scope of CCM emergency duties, e.g., use of able-bodied passengers, communication with the flight crew and passengers, retrieving emergency equipment, managing crew incapacitation, post evacuation tasks
- any peculiarities or challenges associated with retrieving emergency equipment, e.g., accessing and releasing equipment from stowage locations/brackets
- the extent to which training aids/mock-ups replicate the features of the equipment crew need to recognise and manipulate to operate it effectively, e.g., colour, triggers, pull tabs, pins.

Where practical training is not mandated, it is up to the operator to determine the most appropriate method of delivering the training to meet the requirements, however, competence in the duties assigned will still need to be verified, e.g., use of survival equipment.

9.7 Division 121.P.7 – When cabin crew are carried but not required

The intention of this division is to allow for those operators electing to board cabin crew members for a flight even though this Subpart does not require them. This is typical in business jet operations, where the maximum passenger seating capacity is normally less than 19. The intention is to ensure anyone that is boarded for a flight who is assigned any safety, abnormal or emergency duties, is competent to carry out those duties.

CASA recognises the uniqueness of these types of operations and therefore allows more flexibility for the operator to provide their own program for training and checking.

In considering medical transport operations, the operator should be aware of a difference that exists between Part 121 and Part 135. Part 135 requires that operators qualify and confirm the competency of applicable medical transport specialists. Several differences occur in the nature of operations and crew compliment between the respective parts. Part 121 operations will always require that two FCMs are present, whereas Part 135 can in many cases operate with a single FCM. Accordingly, the need for the training and checking system to cater for medical transport specialists was identified for Part 135 operations, but not Part 121 operations.

Where a Part 135 aircraft operator elects to conduct operations under Part 121 (as per regulation 135.010), then the operator needs to be aware that such operations will still require compliance with Division 135.P.3, as there is no corresponding Part 121 Division.

If an operator requires that a medical transport specialist perform duties consistent with those of cabin crew, then that individual will need to be qualified in accordance with the cabin crew requirements of Part 121.

GM 121.740 Competence

Reserved

GM 121.745 Minimum age

Reserved

GM 121.750 Annual emergency and safety equipment check

CASA advises the industry that paragraph 121.750(2)(a) contains a minor editorial error where it refers to a flight crew member instead of a cabin crew member. This phrase will be corrected in a future regulation amendment.

This regulation sets out the requirements for the ongoing maintenance of competency for a cabin crew member in the use of safety and emergency equipment and the operator's evacuation procedures for each aeroplane type.

The annual training check is valid for 1 year from the end of the month in which the check took place but may be renewed up to 3 months in advance without affecting the subsequent renewal date.

See table 10 for an example of a possible annual training check tracking card:

Table 10: Possible annual training check tracking card

Annual check date	Expiry date	Explanatory comment
05 Jun 21	30 Jun 22	Initial qualification.
27 Mar 22	31 Mar 23	Because this check has been conducted more than 3 months prior to the expiry, it forces a reset of the expiry date.
01 Feb 23	31 Mar 24	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.
01 Jan 24	31 Mar 25	This check has been conducted in the period less than 3 months before the day of expiry, therefore the existing expiry date is extended for 1 year.
01 May 25	31 May 26	The individuals check was expired between 31 Mar and 01 May, therefore check date resets based on the most recent check

10 Subpart 121.V—Emergency evacuation procedures

AMC 121.755 Emergency evacuation procedures

Subsection 14.05(3) of the Part 121 Manual of Standards – exits required to be the primary responsibility of cabin crew members

This section of the AMC refers to *certain emergency exits*. For this AMC, these exits are those identified as being the primary responsibility of cabin crew members for the purposes of the emergency evacuation demonstration mentioned in subsection 14.05(1) of the Part 121 MOS.

The information in this section outlines an acceptable means of compliance, for subsection 14.05 of the Part 121 MOS, regarding how the emergency evacuation procedures can acceptably continue requiring certain emergency exits to be the primary responsibility of cabin crew members during a flight that is operating with reduced cabin crew members in accordance with regulation 121.670.

The certain emergency exits can acceptably continue to be identified as the primary responsibility of cabin crew members under the following conditions:

- a supernumerary flight crew member is assigned, for take-off and landing, to a *certain emergency exit* that would otherwise be uncrewed
- the exit remains the primary responsibility of the cabin crew member who delegates the actions to be taken in an emergency evacuation to the flight crew member
- the flight crew member is in addition the minimum cabin crew requirements of regulation 121.670
- the flight crew member has completed the required training, e.g., subsections 12.15(3) and (7), and sections 12.17, 12.18, 12.19, 12.29 and 12.32 of the Part 121 Manual of Standards.

GM 121.755 Emergency evacuation procedures

This regulation sets out the requirements for emergency evacuation procedures for an aeroplane type that requires the carriage of cabin crew in accordance with regulation 121.630. Chapter 14 of the Part 121 MOS contains the general emergency evacuation procedure requirements and demonstration requirements for aeroplanes with a MOPSC of more than 44 passengers.

Evacuation capability equivalency – subsection 14.05(1) of the Part 121 MOS

Subsection 14.05(1) of the Part 121 MOS requires an operator's emergency evacuation procedures for an aeroplane to ensure that the crew members can achieve an evacuation capability at least equivalent to that achieved in an emergency evacuation demonstration that meets the requirements of FAR 25.803, CS-25.803, or an alternative requirement approved in writing by CASA. At this time, no alternative requirements have been approved by CASA.

Demonstration

The purpose of the demonstration is for an operator to demonstrate to CASA that the proposed evacuation procedures and crew training introduced by the operator will enable crew members to achieve an evacuation capability equivalent to that achieved at the initial aeroplane type certification demonstration.

In order to satisfy CASA in this matter, during the exercise an operator will be required to demonstrate the:

- ability of cabin crew to recognise and react to a simulated emergency situation by operating appropriate emergency exits in accordance with timing requirements for an evacuation demonstration exercise
- system of initiating and managing an emergency evacuation in simulated conditions using cabin crew procedures
- cabin crew procedures and associated training would ensure the simulated evacuation of passengers.

An operator will not be required to evacuate passengers through the exits, as this aspect of the evacuation is not timed as part of the assessment against the demonstration standards in the Part 121 MOS. However, the direction of passengers to the exits will be required, and provide the opportunity for an operator to demonstrate appropriate methods of passenger control during an emergency evacuation.

While CASA will observe and validate the demonstration, the exercise itself is planned, coordinated and conducted by the operator.

An operator will assume responsibility for the safety of all personnel involved in the demonstration. An operator will provide all necessary personnel, including a coordinator, safety marshal(s) and persons to indicate exit availability to participants. The operator coordinator should liaise closely with the CASA coordinator for the purposes of the exercise. The safety marshal(s) should be empowered to terminate the exercise using an appropriate signalling method.

Requirement to conduct demonstrations

Subregulation 121.755(3) allows for an operator to receive approval to not comply with a requirement of Chapter 14 of the Part 121 MOS in relation to emergency evacuation procedures.

The intent of this approval power was to permit an operator not to conduct an emergency evacuation demonstration under certain circumstances. Some possible circumstances might include:

- where the operator proposes to operate another model of an aeroplane type and the operator has already demonstrated the emergency evacuation procedures for that type in accordance with the requirements
- the operator intends to implement changes to an aeroplane type that has already met the demonstration requirements, but the changes have not been demonstrated previously, e.g. a reduction in the number of cabin crew; a change to the locations, or emergency evacuation procedures and duties, assigned to cabin crew; or a

change to the number, location, type of exit or type of opening mechanism on an emergency exit.

In determining whether to grant the approval, CASA will seek to be satisfied that:

- the difference between the aeroplane type already demonstrated and the new aeroplane model would not affect the effective egress of passengers from the new model in the event of an emergency
- any change to an aeroplane type that has not previously been demonstrated would not affect the effective egress of passengers from the aeroplane in the event of an emergency.

The purpose of a ditching demonstration is to enable CASA to determine that the operator has the ability to efficiently carry out its ditching procedures. Where the operator utilises training facilities, devices and equipment capable of replicating the operational environment and realism of an emergency evacuation on water, and sufficient evidence is available regarding the adequacy of the operator's training and ditching procedures as part of the training and checking process, a demonstration may not be required.

Considerations in determining the adequacy of the training facilities and devices in providing a realistic environment would include, but are not limited to:

- the scale of the cabin trainer
- number, type and operational capability of:
  - emergency exits
  - life rafts and other equipment
  - stowage locations
  - cabin crew stations
  - communication systems.

Demonstration requirements

The range of experience of cabin crew participating in the exercise should approximate that of a standard cabin crew complement. The cabin crew must be representative of a normal line operating crew. The available cabin crew list including names, position and length of service should be provided to CASA at least two weeks prior to the exercise.

Cabin crew taking part in the exercise must receive only the level of training afforded to all cabin crew so that the exercise can provide evidence that the training received by the 'average' cabin crew member is adequate for the cabin crew to conduct relevant duties appropriately. Accordingly, the participating cabin crew must not include any cabin crew trainers or instructors.

An operator must not provide any further training and/or rehearsal of the exercise to any participating cabin crew unless the operator incorporates such training and/or rehearsal as the ongoing standard for all cabin crew.

CASA has no objection to other cabin crew or training personnel being present as observers provided, they take no part in the exercise. Crew observing from a passenger seat must be positioned well away from an exit and remain seated during the exercise.

The performance standard achieved during the exercise will be deemed a representation of the knowledge, skills, proficiency and attitudes of the operator's cabin crew members.

Cabin crew should be briefed as a group. They should be advised that they are about to undertake a simulated flight to demonstrate the efficacy of procedures and training. It should be emphasised to cabin crew that while the exercise is a simulation, they are to treat the exercise as a live test of procedures and training.

CASA acknowledges that an operator must brief cabin crew members on the non-normal aspects of the exercise, including the indication for exit availability, however cabin crew must not be specifically informed they are to take place in an emergency evacuation demonstration.

Any passengers taking part must be appropriately naïve, i.e. they must have no extra familiarity with the aircraft beyond that of an average passenger. Passengers must not be advised of the detail of the exercise in advance.

Passengers can be informed they are to take part in an exercise to demonstrate the efficacy of an operator's procedures and training and that some activity may take place which may require their active involvement, however they must not be specifically informed they are to take place in an emergency evacuation demonstration.

Demonstration standards

The evacuation demonstration exercise will be assessed against the timing criteria detailed in the demonstration standards in the Part 121 MOS. The demonstration of floor level exit operation must result in the designated exits being opened within the specified timeframe of the evacuation signal being delivered.

Prior to the exercise commencement, the operator will agree with CASA on the coordination of the timing processes to ensure accurate timing of the exercise. In the event of any disparity in timing between CASA and an operator, CASA will rely on the timing conducted by CASA personnel.

The exercise will not meet the standard if any of the following occurs:

- a cabin crew member or passenger (if applicable) opens an exit designated as unusable, i.e. a cabin crew member or passenger must not move the exit operating handle of an exit designated as unusable away from the closed position
- a cabin crew member fails to open an exit designated as usable
- the time from the initiation evacuation signal to a cabin crew member’s primary exit being deemed ready for evacuation exceeds the agreed timeframe.

CASA may declare the exercise invalid should any of the following occur:

- CASA has reason to believe that an operator did not take all reasonable steps to ensure the cabin crew were unaware of the purpose of the exercise.
- any operator personnel inadvertently or otherwise provides information to an operating cabin crew member about the usability of an exit prior to the initial 'Evacuate' command.

Should an operator not succeed in the first attempt at the exercise, then depending on the

reason the operator may be permitted a second attempt at the discretion of CASA without the requirement for further training.

Should a second attempt be undertaken, a different cabin crew team and any passengers seated in the exit rows will be required. As the flight crew's role in the evacuation is limited, they may be used on a second attempt.

To provide for the possibility of a second attempt, an operator should ensure that sufficient cabin crew are available on the day of the exercise.

Should an operator not succeed in the second attempt, the operator will be required to investigate the circumstances and plan a further exercise at a later date.

Conduct of the demonstration

A general briefing of participants (including CASA) should be conducted by the operator prior to commencement of the exercise. The briefing should cover the requirements of the exercise, together with the safety and OH&S matters. Safety issues, including exercise termination procedures, should be covered. The role and responsibilities of the safety marshals should be emphasised.

An operator must provide all equipment required for the exercise and will be responsible for making safe any aircraft equipment to be used in the demonstration. CASA recommends the video recording of the exercise from within the cabin.

The aircraft seating and relevant cabin fixtures (inclusive of emergency equipment documented as installed at the cabin crew station) are to be configured as described in the operator's exposition.

If the exercise is to be conducted in a hangar, the hangar lighting is to be adjusted to ensure a reduced light environment in the cabin. If the exercise is to be conducted in an area other than a hangar, an operator must take adequate steps to ensure a reduced light environment is reproducible in the cabin.

Ground power should be provided to the aircraft.

Steps (where applicable) should be in position at all floor level exits.

No crew member or passenger is to leave the aircraft during the exercise.

The operator must devise a method of indicating the usability of exits. With the agreement of CASA, an operator may use any reasonable means to identify a simulated exterior hazard which renders the exit unusable.

Past experience has indicated that operators have successfully conveyed the usability of exits by assigning an 'Exit Indicator Person' to each aircraft exit, and then providing to each 'Exit Indicator Person' an indicator mechanism that is external to the aircraft. The method of indicating usability of exits must not be visible to crew inside the cabin prior to the 'Evacuate' command being issued.

The cabin crew and any passengers at unstaffed exit rows should be familiarised with the manner in which exit availability is to be indicated during pre-exercise briefings. Cabin crew members and passengers should be able to determine whether or not to use the exit in a simulated emergency situation from the information provided in the pre-exercise briefings.

To prevent cabin crew or passenger pre-conditioning as to which exits are available, the CASA coordinator will nominate exit availability after the main entry door is closed.

An operator should devise an audible termination signal so that the exercise can be halted quickly should it be needed. Experience has demonstrated that a portable air horn provides an audible termination signal which can be heard above the noise of evacuation commands.

During the pre-exercise briefings, participants must be informed of the audible termination signal to be used in the event that the exercise is terminated on safety grounds. The role and responsibilities of the safety marshal(s) should be emphasised.

Operating cabin crews should be in uniform. Other operator personnel and CASA observers should wear high visibility vests. Passengers should be casually dressed.

Flight crew members should board the aircraft. Service interphone communication with the ground is recommended. If service interphone communication with the ground is unavailable, then appropriate flight deck to ground communications should be established.

Cabin crew should board the aircraft and commence normal pre-flight duties ready for passenger embarkation.

The CASA coordinator and timekeeper(s), operator observers and the safety marshal(s) should board and assume their positions in the aircraft.

When the cabin is ready for boarding, any passengers participating in the exercise should board the aircraft and take their assigned seats.

The CASA coordinator will disembark the aircraft and the main entry door to the aircraft should be closed. This is the signal which indicates that the cabin is correctly set up and ready to continue.

When the main entry door has been closed, the CASA coordinator will move around the aircraft and indicate to each Exit Indicator Person (or similar) whether the exit is to be useable or not. Every effort will be made by all parties to ensure the operating cabin crew and passengers (if applicable) are not made aware of the useability of the exits at this time. To ensure there is no confusion, the Exit Indicator Person will confirm the useability or not of the exit back to the CASA coordinator.

Inside the aircraft, cabin crew should continue with their normal pre-take-off duties in accordance with the operator’s standard operating procedures, e.g., conducting pre-flight safety briefings, including the safety demonstration.

When the final check of the cabin is complete, the cabin crew should make the standard 'cabin ready' signal to the captain. On receipt of this advice, the captain should give their introductory public address (PA).

When the captain has completed the PA, they should advise operator ground personnel by headset that the aircraft is 'Ready'. This triggers the dimming of hangar lights, if required.

In order to assist cabin crew and any passengers participating in the exercise to achieve situational awareness, the captain should continue with the simulated taxi, announcing that the aircraft is lining up on the runway and commencing the take-off roll.

For the purpose of the demonstration exercise, at this point a simulated emergency, such as a collision with another aircraft, will occur.

Immediately prior to commencement of evacuation procedures, the flight crew should take action that results in failure of the cabin lighting (such as advising ground personnel to disconnect ground power) and illumination of the emergency lighting.

The captain should then immediately call for the aircraft to be evacuated via the PA using operator unprepared evacuation procedures. There must be no 'Alert' phase during the simulated scenario. Timing parameters require cabin crew to be seated at their station with their harness fitted when the signal to evacuate is given.

Each CASA timekeeper will commence timing in accordance with the pre-arranged evacuation signal notified to the operator prior to the exercise.

The operator must ensure that the timekeepers outside the aircraft are aware of the evacuation signal so that they can also commence timing at the appropriate time.

Cabin crew will commence procedures for evacuation including observation of external conditions, issuing of commands and management of exits.

Any passengers at unstaffed exit rows will be expected to react according to the requirements of the pre-flight safety briefings received from the cabin crew, giving due regard to the usability of the particular exit.

At the completion of the exercise, CASA timekeepers will adjourn to consider the relevant aspects of the exercise.

Use of passenger seats by cabin crew members under MEL provisions

Some MEL’s may permit a cabin crew member to occupy a passenger seat if a cabin crew seat is inoperative.

This is entirely permissible under regulation 121.380 of CASR, although an operator will need to ensure that their emergency evacuation procedures under regulation 121.755 of CASR account for a cabin crew member with emergency evacuation duties occupying a passenger seat in place of their ‘normal’ cabin crew seat.

11 Subpart 121.Z—Certain single-engine aeroplanes

There is an exemption in force that enables multi-engine and single-engine aeroplanes with a MTOW <= 8 618kg and a MOPSC between 10-13, to be operated under the Part 135 rules plus certain additional conditions. It is recommended that operators review CASA EX137/21.

AMC 121.760 Application of Part 135 to certain operations

Reserved

GM 121.760 Application of Part 135 to certain operations

The regulation specifies that it only applies to the conduct of Day VFR operations and IFR operations (day or night).

Note: Regulation 121.005 specifies that Subpart 121.Z is only applicable to a single-engine aircraft when:

(a) it has a MOPSC of more than 9

(b) it has a MTOW of not more than 8,618 kg.

The regulation specifies that an aircraft operating under Subpart 121.Z must also comply with all Part 135 regulations.

Note: In the case of a contradictory requirement, the Subpart 121.Z requirement takes precedence.

AMC 121.765 At least 2 pilots required for certain IFR flights

Reserved

GM 121.765 At least 2 pilots required for certain IFR flights

This regulation requires that if an operator is conducting IFR flight operations where the aeroplane is carrying more than 9 passengers, then the aeroplane's flight crew must include at least 2 pilots.

For the avoidance of doubt, similar to all other references to passengers, the total of 9 includes adults, children and infants.

AMC 121.770 Trend monitoring systems required for certain VFR flights by day

Reserved

GM 121.770 Trend monitoring systems required for certain VFR flights by day

The regulation specifies that if conducting a VFR flight and carrying more than 9 passengers, then the aircraft must be fitted with an automatic electronic condition trend monitoring system for the engine.

Note: Under Subpart 121.Z, VFR operations can only be conducted by day (refer to regulation 121.780).

AMC 121.775 Terrain awareness and warning system

Reserved

> **GM 121.775 Terrain awareness and warning system**
>
> Reserved

AMC 121.780 Aircraft not to be flown under the VFR at night

Reserved

> **GM 121.780 Aircraft not to be flown under the VFR at night**
>
> The regulation specifies that you cannot conduct Night VFR operations under Subpart 121.Z.