

CHAPTER 1 PRELIMINARY

1.01 Name of instrument

- (1) This instrument is the *Part 91 (General Operating and Flight Rules) Manual of Standards 2020*.
- (2) This instrument may be cited as the Part 91 MOS.
- (3) Unless a contrary intention appears, references in this instrument to “the MOS”, “this MOS” or “this instrument” are references to the Part 91 MOS.

1.03 References to instruments and documents

- (1) In this MOS, unless a contrary intention appears, a reference to an instrument or any other document (however described) is a reference to the instrument or document, as in force or existing from time to time.
- (2) In this MOS, unless a contrary intention appears, a reference to any legislative instrument is a reference to the instrument, as in force from time to time.
- (3) In this MOS, unless a contrary intention appears, a reference to a FAR is a reference to the FAR, as in force from time to time.
- (4) If a provision of this MOS applies, adopts or incorporates any instrument or other document, then, unless a contrary intention appears, the instrument or other document, is taken to have been applied, adopted or incorporated as in force or existing from time to time.

Note 1 This section applies to an AFM (which includes an AFM Supplement) because it is also a document.

Note 2 A reference to an instrument or other document, which only occurs in a Note to a provision, does not have the effect that the instrument or document is taken to be applied, adopted or incorporated for this MOS, unless a contrary intention appears. Such references in Notes are to documents which may be used as guidance or background information.

1.04 References to ICAO documents

- (1) In this MOS, unless a contrary intention appears, a reference to an ICAO document (however described) is a reference to the document, as in force or existing from time to time.
- (2) In this MOS, unless a contrary intention appears, reference to a numbered ICAO Annex is a reference to the Annex of that number, as in force or existing from time to time, and as contained in the Chicago Convention.
- (3) In this MOS, unless a contrary intention appears, reference to a numbered ICAO manual is a reference to the manual of that number, or subsequent version, as in force or existing from time to time and issued by ICAO.
- (4) In this MOS, unless a contrary intention appears, reference to a numbered ICAO circular is a reference to the circular of that number, or subsequent version, as in force or existing from time to time and issued by ICAO.

Note 1 Relevant ICAO documents for this MOS may be accessed by navigating from the following link: <http://www.icao.int/publications/Pages/default.aspx>.

Note 2 A reference to an ICAO document, including an ICAO Annex, which only occurs in a Note to a provision, does not have the effect that the document is taken to be applied, adopted or incorporated

for this MOS, unless a contrary intention appears. Such references in Notes are to documents which may be used as guidance or background information.

1.05 References to AS/NZS standards, TSOs, ETSOs, (E)TSOs

- (1) In this MOS, unless a contrary intention appears, a reference to a particular AS/NZS standard is a reference to:
 - (a) the particular joint Australian and New Zealand Standard (the *standard*), as applicable; or
 - (b) a later version of the standard, as applicable.
- (1A) For subsection (1), “applicable”, in relation to the standard, is a reference to the version of the standard that was in existence and applicable to the thing on the date of its manufacture.

Note For example, the joint *Australian and New Zealand Standard AS/NZS 1754:2004, Child restraint systems for use in motor vehicles*, would apply to an automotive child restraint system that was **manufactured** during the time period that this 2004 version of the AS/NZS was in force. However, there are later versions of this standard, for example, dated 2010 and 2013. If an automotive child restraint system was manufactured during the time period that the 2010 standard was in force, then that system would be acceptable for use; and if the automotive child restraint system was manufactured during the time period that the 2013 standard was in force, then that system would also be acceptable for use. In effect, by prescribing the 2004 version of this standard, or later version as applicable, the rule permits the use of this version, or any later version, but not any earlier version, and the version that applies to any specific system is the version that applied at the time the system was **manufactured**.

- (2) In this MOS, unless a contrary intention appears, a reference to a particular TSO is a reference to that TSO or a later version of that TSO.
- (3) In this MOS, unless a contrary intention appears, a reference to a particular ETSO is a reference to that ETSO or a later version of that ETSO.
- (4) In this MOS, unless a contrary intention appears, a reference to a particular (E)TSO is a reference to the relevant ETSO or TSO, or a later version of the relevant ETSO or TSO.

Note 1 The first versions of a TSO may have been issued with or without the notation “(0)” at the end (for example only, citations of TSO-C129 and TSO-129(0) would refer to the same document. Thus, for first version TSOs, either form is an acceptable citation for the other.

Note 2 TSO later versions are identified by an alphabetical letter (for example only, TSO-C129 (or TSO-C129(0) versus TSO-C129a). Unless the contrary intention appears, a reference to (for example only) TSO-C129 (or TSO-C129(0)) means that version or a later version. A reference to TSO-C129a means that version or a later version, but not the earlier version — unless a contrary intention appears.

1.06 Table of Contents

The Table of Contents for this MOS is not part of this instrument. It is for guidance only and may be modified or edited in any published version of this MOS.

1.07 Definitions and abbreviations

- (1) Subject to subsection 1.07 (6), in this instrument words and phrases have the same meaning as in Part 91 of CASR and in the Act, unless a contrary intention appears.
- (2) In this MOS, unless a contrary intention appears, mention of a provision with the prefix “91.” is a reference to that provision as contained in Part 91 of CASR.
- (3) In this MOS, reference in a provision to an aerodrome includes a helideck unless a helideck is expressly excluded for the purposes of the provision.
- (4) In this MOS, a reference to a class of airspace means the volumes of airspace of that class, as determined by CASA in or under the *Determination of Airspace and*

Controlled Aerodromes Etc. (Designated Airspace Handbook) Instrument, as in force from time to time.

Note The *Determination of Airspace and Controlled Aerodromes Etc. (Designated Airspace Handbook) Instrument* is a legislative instrument that is revised and reissued by CASA approximately every 6 months. Airspace details from the Determination in force at any particular time are also published by Airservices Australia in the Designated Airspace Handbook available free online at www.airservicesaustralia.com.

- (5) In this MOS, any reference to a seat, a seatbelt, a shoulder harness or a restraint system is a reference to an approved seat, an approved seatbelt, an approved shoulder harness or an approved restraint system, where “approved” means approved under Part 21 of CASR.

- (6) In this MOS:

AAIS means automatic aerodrome information service, and is the service that, by means of repetitive broadcasts on a discrete aerodrome frequency, provides current and routine information for aircraft arriving at, or departing from, the aerodrome.

accurate QNH has the same meaning as in section 10.06.

Act means the *Civil Aviation Act 1988*.

additional fuel means the supplementary amount of fuel required to allow an aircraft that suffers engine failure, or loss of pressurisation at the most critical point along the route, whichever results in the greater subsequent fuel consumption, to:

- (a) proceed to an alternate aerodrome (or, for a rotorcraft, a suitable rotorcraft landing site); and

Note For a rotorcraft, an alternate rotorcraft landing site would constitute the alternate aerodrome.

- (b) fly for 15 minutes at the holding speed for the aircraft at 1 500 ft above the aerodrome elevation in ISA conditions; and

- (c) make an approach and landing.

Note Fuel planning in accordance with Chapter 19 may place an aircraft in a fuel emergency situation if a failure or loss were to occur as described above. In that case, additional fuel must be carried.

ADF means automatic direction finder.

ADF, when used in relation to a SOG operation: see section 20.01.

adult has the meaning given by Part 1 of the CASR Dictionary.

Note **Adult** means a person who has turned 13.

aerial application operation has the meaning given by regulation 137.010 of CASR.

aerial application operator means a person who holds an AOC that authorises the use of an aeroplane or a rotorcraft in an aerial application operation.

aerial work certificate means a certificate issued under regulation 138.040 of CASR.

aerial work operator means the holder of an aerial work certificate.

aerodrome forecast means:

- (a) for an aerodrome in Australian territory — an authorised weather forecast for the aerodrome issued by the BOM, that is labelled as a “TAF”; or
- (b) for an aerodrome outside Australian territory — an authorised weather forecast for the aerodrome that meets the requirements of standard 6.2, Aerodrome forecasts, in Chapter 6 of ICAO Annex 3, *Meteorological Service for International Air Navigation*.

AFM (short for aircraft flight manual) has the same meaning as **flight manual**.

AGL means above ground level.

agricultural operation has the meaning given in subregulation 2 (1) of CAR.

AIP has the meaning given by Part 1 of the CASR Dictionary.

Note The AIP is available through www.airservicesaustralia.com.

AIRAC cycle, or **aeronautical information regulation and control cycle**, is the system and frequency setting used to regularly update aeronautical information in relevant aviation systems, for example, in a navigation database.

Note In accordance with Annex 15, Aeronautical Information Services (AIS), to the Chicago Convention, the AIRAC cycle documents and defines a series of common dates, and an associated standard AIP procedure, for each Convention State, under which aeronautical information is to be cyclically updated.

air traffic service has the meaning given by Part 1 of the CASR Dictionary.

Note The phrase *air traffic service* includes 1 or more of the following: a flight information service, an alerting service, an air traffic advisory service, an air traffic control service, an area control service, an approach control service or an aerodrome control service. **Air Traffic Services** has a different meaning – see under **ATS**.

alternate aerodrome has the same meaning as in ICAO Annex 2.

Note At the commencement of this instrument, Chapter 1 of ICAO Annex 2 included the following definition:

“**Alternate aerodrome.** An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at an aerodrome of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:

Take-off alternate: An alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

En-route alternate: An alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en route.

Destination alternate: An alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing.”

AMSL means above mean sea level.

approved GNSS means:

- (a) a GNSS system that is authorised in accordance with any of the following:
 - (i) (E)TSO-C129;
 - (ii) (E)TSO-C145;
 - (iii) (E)TSO-C146;
 - (iv) (E)TSO-C196a; or
- (b) a multi-sensor navigation system that:
 - (i) includes GNSS and inertial integration; and
 - (ii) is approved under Part 21 of CASR as providing a level of performance equivalent to a GNSS system mentioned in subparagraph (a) (ii), (iii) or (iv).

approved GNSS position source has the meaning given by section 26.67.

approved provider means:

- (a) the holder of a Type 2 LOA or a Type 2 DAT approval that receives its aeronautical data from a data service provider; or

Note A data service provider is a person who holds a certificate under regulation 175.295 of CASR.

- (b) for a foreign aircraft — a provider of aeronautical information for performance-based navigation, approved by the NAA of the State of registration or State of operator, of the foreign aircraft.

APU means auxiliary power unit.

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

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

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

area QNH means an altimeter setting that is:

- (a) issued by the BOM; and
(b) representative, to within ± 5 hPa, of any actual QNH of any location within a QNH area (however described), or a subdivision of such an area, published in the AIP.

Note For QNH areas, see the *Planning Chart Australia*, as contained in the AIP.

AS/NZS has the meaning given by Part 1 of the CASR Dictionary.

ATC means air traffic control.

ATIS, for an aerodrome, means an automatic terminal information service which provides current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts during the hours when the unit responsible for the service is in operation.

ATS has the meaning given to *Air Traffic Services* in the CASR Dictionary.

ATS surveillance service has the meaning given by ICAO Document 4444.

Note At the commencement of this instrument, ICAO Document 4444 included the following:

“**ATS surveillance service**. A term used to indicate a service provided directly by means of an ATS surveillance system.”

ATS surveillance system has the meaning given by ICAO Document 4444.

Note At the commencement of this instrument, ICAO Document 4444 included the following:

“**ATS surveillance system**. A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

Note.— *A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.*”

ATSO (short for Australian Technical Standard Order) has the meaning given by Part 1 of the CASR Dictionary.

Australian-administered airspace has the meaning given by Part 1 of the CASR Dictionary.

Australian FIR has the meaning given to *flight information region* in the *Airspace Regulations 2007*.

authorised aeronautical information: see the CASR Dictionary.

authorised weather forecast has the meaning given by Part 1 of the CASR Dictionary.

authorised weather report has the meaning given by Part 1 of the CASR Dictionary.

avoid area of the HV curve, of a rotorcraft, means the area delineated on the height-velocity envelope diagram in the AFM, that shows the parameters within which operations of the rotorcraft should be avoided.

AWS, or ***automated weather information service***, means an aerodrome weather information service, provide by an aerodrome operator:

- (a) that provides actual weather conditions at the aerodrome, via telephone or broadcast; and
- (b) the data for which is obtained from an AWS operated or approved by the BOM.

AWS means automatic weather station.

BECMG, in relation to a weather forecast, has the same meaning as in ICAO Document 8896.

Note At the commencement of this instrument, ICAO Document 8896 included the following: “BECMG (abbreviation for “*becoming*”) — this change indicator describes changes where the conditions are expected to reach or pass specified values at a regular or irregular rate.”.

BKN, in relation to amounts of cloud, has the same meaning as in ICAO Document 8896.

Note At the commencement of this instrument, ICAO Document 8896 refers to BKN as 5-7 oktas of cloud. “Okta” is a standard unit of measurement for cloud cover.

BOM means the Bureau of Meteorology.

CAO means Civil Aviation Order.

CAR means the *Civil Aviation Regulations 1988*.

CASR means the *Civil Aviation Safety Regulations 1998*.

CASR Dictionary means the Dictionary under regulation 1.004 of CASR.

CAT means category.

Category A, in relation to a rotorcraft, means a multi-engine rotorcraft that is:

- (a) designed with engine and system isolation features stated for Category A requirements in any of the following:
 - (i) Part 27 of the Federal Aviation Regulations (***FARs***);
 - (ii) Part 29 of the FARs;
 - (iii) EASA CS — 27;
 - (iv) EASA CS — 29;
 - (v) an equivalent airworthiness certification code of a Contracting State; and
- (b) capable of operation using scheduled take-off and landing data under a critical engine failure concept, which assures adequate designated ground or water area and adequate performance capability for continued safe flight or safe rejected take off in the event of engine failure, as mentioned in the rotorcraft’s flight manual.

Note This definition is based on the ICAO, FAA and EASA definitions of the term ***Category A*** in relation to rotorcraft.

Category A performance, for a rotorcraft operation, means the 1 engine inoperative performance (as derived from the rotorcraft flight manual) from which the pilot in command determines the most critical maximum weight that enables the rotorcraft to avoid all obstacles and complete its operation.

Category A rotorcraft means a rotorcraft that:

- (a) meets each of the requirements stated in the definition ***Category A***; and
- (b) is type-certificated in accordance with any of the following:
 - (i) Part 27 of the FARs;
 - (ii) Part 29 of the FARs;

- (iii) EASA CS — 27;
- (iv) EASA CS — 29;
- (v) an equivalent airworthiness certification code of a Contracting State.

Category B rotorcraft means a rotorcraft that is not capable of operations as a Category A rotorcraft in accordance with paragraph (b) of the definition of **Category A**.

child has the meaning given by Part 1 of the CASR Dictionary.

Note **Child** means a person who has turned 2 but has not turned 13.

civil aviation authorisation has the meaning given by section 3 of the *Civil Aviation Act 1988*.

civil aviation legislation has the meaning given by section 3 of the *Civil Aviation Act 1988*.

community service flight means a flight:

- (a) that involves:
 - (i) the transport of 1 or more individuals (a **patient**) to a destination for the purpose of each such individual receiving non-emergency medical treatment or services at the destination; or
 - (ii) the transport of a patient from a destination mentioned in subparagraph (i) (the **treatment destination**) to another treatment destination; or
 - (iii) the transport of a patient from a treatment destination:
 - (A) back to a place from which the patient departed for a treatment destination; or
 - (B) to a destination at which the patient resides; and
- (b) that is provided to a patient, and any person who accompanies the patient to provide support and assistance, without a charge being made to any of those persons for their carriage; and
- (c) where medical treatment is not provided on board the aircraft for the flight, other than the administering of medication or in response to an unexpected medical emergency; and
- (d) that is coordinated, arranged or facilitated by an entity for a charitable purpose or community service purpose.

Note Section 2B of the *Acts Interpretation Act 1901* defines **charitable purpose** as having the meaning given by Part 3 of the *Charities Act 2013*.

confined area, for a rotorcraft, means a relevant HLS where take-off or landing requires the rotorcraft to operate within the avoid area of the HV curve because the available take-off or landing space is constrained by:

- (a) terrain; or
- (b) the presence of other natural, or man-made, obstructions.

contingency fuel, for an aircraft in a kind of flight mentioned in an item of Table 19.02 (2), means the amount of fuel required to compensate for unforeseen factors, and which must not be less than:

- (a) the percentage (if any) of the planned trip fuel for the flight, as specified in column 4 of the same item; or
- (b) in the event of in-flight replanning — the percentage (if any) of the trip fuel for the replanned flight, as specified in column 4 of the same item.

control area has the meaning given by Part 1 of the CASR Dictionary.

controlled aerodrome has the meaning given by Part 1 of the CASR Dictionary.

controlling zone RVR means the reported value of 1 or more RVR locations (touchdown, mid-point, and stop-end) used to determine whether operating minima are met.

control zone has the meaning given by Part 1 of the CASR Dictionary.

Note Controlled aerodromes, control areas and control zones are determined by CASA under the *Airspace Regulations 2007*.

critical engine means the engine whose failure would most adversely affect the performance or handling qualities of an aircraft.

CTAF means common traffic advisory frequency, being a designated frequency on which pilots make positional broadcasts when operating in the vicinity of a non-controlled aerodrome.

current, for a navigation database: see section 14.07.

DA means decision altitude.

destination alternate aerodrome means an alternate aerodrome that is a destination alternate (within the meaning of ICAO Annex 2).

destination alternate fuel means the amount of fuel required to enable an aircraft to do the following in a sequence:

- (a) perform a missed approach at the destination aerodrome;
- (b) climb to the expected cruising altitude;
- (c) fly the expected routing to the destination alternate aerodrome;
- (d) descend to the point where the expected approach is initiated;
- (e) conduct the approach;
- (f) land at the destination alternate aerodrome.

DH means decision height.

DME means distance measuring equipment.

EASA, is short for European Union Aviation Safety Agency, and has the meaning given by Part 1 of the CASR Dictionary.

Note For relevant EASA document definitions: see section 26.67.

END means end zone.

en route alternate aerodrome means an alternate aerodrome that is an en route alternate (within the meaning of ICAO Annex 2).

established, for the definition of **holding fuel**, means any of the following:

- (a) established by the aircraft manufacturer and published in the AFM;
- (b) established by the use of a fuel consumption monitoring system;
- (c) established by the aircraft operator and published in the operations manual along with:
 - (i) the relevant data and methodology used; or
 - (ii) references to another accessible location of the data and methodology used.

ETA means estimated time of arrival.

ETSO is short for European Technical Standard Order: see the CASR Dictionary.

(E)TSO, followed by an identifying letter and number, is a shorthand reference to both the TSO and the ETSO, each of which has the same identifying letter and number.

FAA is short for the Federal Aviation Administration of the United States.

FAR is short for the Federal Aviation Regulations of the United States.

FATO means the final approach and take-off area, as that expression is defined in the CASR Dictionary.

FATO, or **final approach and take-off area**, has the meaning given by Part 1 of the CASR Dictionary.

FDE is short for fault detection and exclusion, and means a GNSS receiver's ability to exclude faulty satellites from position computation.

FEW, in relation to amounts of cloud, has the same meaning as in ICAO Document 8896.

Note At the commencement of this instrument, ICAO Document 8896 refers to FEW as 1-2 oktas of cloud.

final reserve fuel means the calculated amount of fuel that:

- (a) is required to fly an aircraft:
 - (i) at 1 500 ft above aerodrome **elevation** in ISA conditions for the period of time specified for the flight in column 3 of Table 19.02 (2); and
 - (ii) for an aircraft that is a rotorcraft conducting IFR flight or VFR flight by night, or an aeroplane, or an airship — at holding speed; and
 - (iii) for an aircraft that is a rotorcraft conducting a VFR flight by day — at range speed; and
 - (iv) at the aircraft's estimated weight on arrival at the destination alternate aerodrome or the planned destination aerodrome when no destination alternate aerodrome is required (the **relevant aerodrome**) to the relevant aerodrome; and
- (b) is usable fuel remaining in the fuel tanks on completion of the final landing at the relevant aerodrome.

FIR means a flight information region.

FL, or **flight level**, has the meaning given by Part 1 of the CASR Dictionary.

flight forecast means a text-based forecast issued for a part of a flight for which a routine GAF is not prepared.

flight manual has the meaning given by Part 1 of the CASR Dictionary.

flying in formation has the meaning given by the CASR Dictionary.

FO means fail operational.

FO hybrid landing system means a system which consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system.

forecast QNH means QNH obtained from an authorised weather forecast.

FP means fail passive.

ft means feet.

GAF, or **graphical area forecast**, means an authorised weather forecast that is:

- (a) issued by the BOM; and

(b) a forecast of the weather conditions within a specific geographical area published in the AIP.

Note At the commencement of this instrument, the AIP document containing these geographical areas was the Planning Chart Australia.

GAMET area forecast has the meaning given by Annex 3, *Meteorological Service for International Air Navigation*.

Note At the commencement of this instrument, Chapter 1 of Annex 3 included the following definition:

“**GAMET area forecast**. An area forecast in abbreviated plain language for low-level flights for a flight information region or sub-area thereof, prepared by the meteorological office designated by the meteorological authority concerned and exchanged with meteorological offices in adjacent flight information regions, as agreed between the meteorological authorities concerned.”

GBAS means ground-based augmentation system.

GBAS landing system, or **GLS**, has the meaning given by Chapter 1 of ICAO Document 8168, Volume 1.

Note At the commencement of this instrument, ICAO Document 8168 defined **GBAS landing system** to be “A system for approach and landing operations utilizing GNSS, augmented by a ground-based augmentation system (GBAS), as the primary navigational reference.”

GNSS means the global navigation satellite system.

GNSS FDE means GNSS fault detection and exclusion.

ground-based navigation aid: see section 14.05.

G/P means glide path.

helideck has the meaning given by Part 1 of the CASR Dictionary.

HLS means helicopter landing site.

holding fuel means the amount of fuel an aircraft requires to fly for the period of time anticipated for holding (taking into account the operating conditions) calculated at the holding fuel consumption rate established for the aircraft for the anticipated meteorological conditions, or ISA.

Note See also the definition of *established*.

hPa means hectopascals.

HUD, or **head-up display**, means a display system that presents flight information into a pilot’s forward external field of view.

IAF means initial approach fix.

IAP means an instrument approach procedure.

Note **Instrument approach procedure** is a defined term: see the CASR Dictionary.

IAS, or **indicated airspeed**, means the speed of an aircraft as shown on its pitot static airspeed indicator, calibrated to reflect standard atmosphere adiabatic compressible flow at sea level uncorrected for airspeed system errors.

ICAO Annex, followed by a number, means the Annex of the given number, as contained in the Chicago Convention.

ICAO landing forecast means an **authorised weather forecast** that meets the requirements of 6.3 in Chapter 6, Landing forecasts, of ICAO Annex 3.

IFR, or **instrument flight rules**, has the meaning given by Part 1 of the CASR Dictionary.

ILS means instrument landing system.

IMC, or **instrument meteorological conditions**, has the meaning given by Part 1 of the CASR Dictionary.

in-company, in relation to 2 or more aircraft in flight, means aircraft:

- (a) that form a group and occupy a specific 3-dimensional volume of airspace; and
- (b) each of whose pilots in command self-separates from the other group aircraft in the volume of airspace.

infant has the meaning given by Part 1 of the CASR Dictionary.

Note ***Infant*** means a person who has not turned 2 years of age.

inoperative has the meaning given by Part 1 of the CASR Dictionary.

in the vicinity of a non-controlled aerodrome has the meaning given by Part 1 of the CASR Dictionary.

ISA means international standard atmosphere.

JRCC Australia means the Australian Joint Rescue Coordination Centre.

jump aircraft means an aircraft from which parachutists jump for a parachute descent.

km means kilometres.

kts means knots.

landing decision point, for landing a rotorcraft, means the point, mentioned in the rotorcraft's flight manual, from which if an engine failure is recognised:

- (a) a baulked landing may be initiated; or
- (b) the landing may be safely continued.

landing distance available means:

- (a) for landing an aeroplane at a certified aerodrome — the distance declared by the aerodrome operator in the AIP as available and suitable for the ground run of the aeroplane when it lands at the aerodrome; or
- (b) for landing an aeroplane at an aerodrome other than a certified aerodrome — the distance established by the aeroplane operator as available and suitable for the ground run of the aeroplane when it lands at the aerodrome.

landing distance available, for landing a rotorcraft, means the total of the following that are available for the rotorcraft to complete the landing from the height above the FATO that is mentioned in the rotorcraft's flight manual:

- (a) the length of the FATO;
- (b) the length of the area that is available and suitable for the rotorcraft to complete a landing on.

LNAV means lateral navigation.

LOA means a letter of acceptance issued by an NAA to a data supplier that has demonstrated compliance with the requirements of RTCA DO-200B, or EUROCAE ED-76A, Standards for Processing Aeronautical Data, as in force from time to time.

Note 1 An LOA may be a Type 1 LOA or a Type 2 LOA.

Note 2 An LOA, issued by an appropriate NAA to each of the participants in the data chain, demonstrates compliance with this requirement, for example, FAA LOA issued in accordance with FAA AC 20-153 or EASA LOA issued in accordance with EASA Agency Opinion 01/2005 and the associated "Conditions for the issuance of Letters of Acceptance for Navigation Database Suppliers by the Agency".

Note 3 A Type 1 LOA provides recognition of a data supplier's compliance with RTCA/DO-200A/EUROCAE ED-76 with no identified compatibility with an aircraft system. A Type 1 LOA ensures the processes for producing the aeronautical data comply with the documents identified in Note 2 and the documented data quality requirements.

Note 4 A Type 2 LOA provides recognition of a data supplier's compliance with RTCA/DO-200A/EUROCAE ED-76 and the compatibility of its delivered data with particular avionic systems that are identified in the LOA.

Note 5 A data service provider who holds a certificate under regulation 175.295 of CASR equates to an EASA or FAA Type 1 LOA.

LOC means localiser.

LP means localiser performance.

LPV means localiser performance with vertical navigation.

LSALT is short for lowest safe altitude, and has the meaning given by Part 1 of the CASR Dictionary.

m, for a distance, means metres.

manufacturer's data manual, in relation to an aircraft, means a publication (however described) other than the AFM, produced by the manufacturer of the aircraft as a guide for the flight crew members in the operation of the aircraft.

MBA means mandatory broadcast area.

MDA means minimum descent altitude.

MDH means minimum descent height.

MEL (short for minimum equipment list) has the meaning given by Part 1 of the CASR Dictionary.

MID means mid zone.

MLS means microwave landing system.

MOS means Manual of Standards.

MSA, or **minimum sector altitude**, means the lowest usable altitude that provides at least 300 m (or 1 000 ft) clearance above all objects within a circle or a sector of a circle of radius 46 km (25 NM) or 18.5 km (10 NM) centred on a significant point.

MTOW, or **maximum take-off weight**, has the meaning given by Part 1 of the CASR Dictionary.

multi-crew operation has the meaning given by Part 1 of the CASR Dictionary.

NAA, or **national aviation authority**, has the meaning given by Part 1 of the CASR Dictionary.

NAT-HLA means North Atlantic High-Level Airspace, and is the airspace to which NAT Doc 007, North Atlantic Operations and Airspace Manual (as in force from time to time) applies.

Note A copy of Nat Doc 007 is available at www.icao.int/EURNAT.

navigational tolerance means 1 of the following:

- (a) for PBN operations — the RNP value for the segment of the IAP being conducted;
- (b) for VOR or LOC-based operations — full-scale deflection of the course deviation indicator;
- (c) for NDB-based operations — + or - 5° from the specified bearing;
- (d) for DME-based operations — + or - 2 NM from the required arc;
- (e) for operations based on visual navigation — 1 NM from the cleared track.

navigation database means the data from an approved provider loaded onto an aircraft navigation system.

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

- (a) RNAV specification which is a navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, and is designated by the prefix RNAV, for example, RNAV 5, RNAV 1; or
- (b) RNP specification which is a navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, and is designated by the prefix RNP, for example, RNP 2, RNP APCH.

NDB means non-directional beacon.

NM means nautical miles.

non-precision approach, or **NPA**, means a non-precision approach procedure and is an IAP instrument approach procedure designed for 2D instrument approach operations.

NOTAM has the meaning given by Part 1 of the CASR Dictionary.

NVD means night vision device.

NVG means night vision goggles.

NVIS means night vision imaging system.

NVIS firebombing has the meaning given by subsection 12.03 (1) of the Part 138 MOS.

NVIS fire mapping has the meaning given by subsection 12.03 (1) of the Part 138 MOS.

NVIS incendiary dropping has the meaning given by subsection 12.03 (1) of the Part 138 MOS.

NVIS operation has the meaning given in subsection 3.02 (1) of this MOS.

OVC, in relation to cloud, has the same meaning as in ICAO Document 8896.

Note At the commencement of this instrument, ICAO Document 8896 refers to OVC as 8 oktas of cloud.

PAL means a pilot-activated lighting system.

Part 103 aircraft has the same meaning as in regulation 103.005 of CASR.

Part 141 operator: see the CASR Dictionary.

Part 142 operator: see the CASR Dictionary.

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

- (a) along ATS routes; or
- (b) on an IAP; or
- (c) in designated airspace.

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

Note 2 **ATS routes** is a defined term: see the CASR Dictionary.

planned destination aerodrome means the aerodrome which, before take-off, an aircraft is planned to fly to and land at.

POB means people on board.

point of in-flight replanning means a point en route during a flight of an aircraft, determined by the operator or pilot in command for the flight before the flight commences, at which an aircraft can:

- (a) if the flight arrives at the point with adequate fuel to complete the flight to the planned destination aerodrome while maintaining the fuel required by subsection 19.04 (2) — continue to that aerodrome; or
- (b) otherwise — divert to an en route alternate aerodrome while maintaining the fuel required by subsection 19.04 (3).

precision approach procedure means an IAP based on an ILS, an MLS, a GLS or an SBAS CAT I, and which is designed for 3D instrument approach operations.

PRM means precision runway monitoring.

QNH is an atmospheric pressure adjusted to sea level and measured in hPa or millibars so that when QNH is set the altimeter will read elevation AMSL.

quick-donning mask: see section 26.44.

recognised country: see the CASR Dictionary.

Note Recognised countries include:

- (a) Canada;
- (b) France;
- (c) Germany;
- (d) Netherlands;
- (e) New Zealand;
- (f) United Kingdom;
- (g) United States of America.

requisite GNSS satellites means at least the number of serviceable GNSS satellites a GNSS manufacturer specifies in writing as being required for its approved GNSS to provide a particular RNP specification.

rescue operation: see section 20.01.

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

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

RNP APCH-LNAV means the conduct of an RNP APCH using LNAV minima.

RNP APCH-LNAV/VNAV means the conduct of an RNP APCH using LNAV/VNAV minima.

RNP APCH-LP means the conduct of an RNP APCH using LP minima.

RNP APCH-LPV means the conduct of an RNP APCH using LPV minima.

RVR, or **runway visual range**, has the meaning given by Part 1 of the CASR Dictionary.

RVSM airspace, or **reduced vertical separation minimum airspace**, has the meaning given by Part 1 of the CASR Dictionary.

SAR means search and rescue.

SARTIME means the time nominated by a pilot for the initiation of SAR action if a report has not been received by the nominated unit.

SARWATCH means the time for a SAR alert, based on:

- (a) full position reporting procedures; or

- (b) scheduled reporting times (SKEDS); or
- (c) SARTIME.

SBAS means satellite-based augmentation system.

SBAS CAT I, in relation to an instrument approach procedure, means SBAS Category I.

SCT, in relation to amounts of cloud, has the same meaning as in ICAO Document 8896.

Note At the commencement of this instrument, ICAO Document 8896 refers to SCT as 3-4 oktas of cloud.

SFIS means Surveillance Flight Information Service.

SIGWX means significant weather.

single-pilot operation has the meaning given by Part 1 of the CASR Dictionary.

SOG: see section 20.01.

SOG member: see section 20.01.

SOG operation: see section 20.01.

special VFR has the meaning given by section 2.01.

specified aircraft performance category has the meaning given by section 2.02.

specified IFR cruising level: see Division 2.5.

specified VFR cruising level: see Division 2.5.

standard visual signal has the meaning given by Division 2.3 of Chapter 2.

step climb is an ATC procedure which allows 2 aircraft to perform a coordinated climb to a more fuel-efficient level while maintaining safe separation.

TAF3 means an aerodrome forecast:

- (a) issued by the BOM for an aerodrome within Australian territory; and
- (b) that contains the text “TAF3” in the remarks section of the forecast.

taxi fuel means the amount of fuel expected to be used by an aircraft before take-off, taking into account:

- (a) local conditions at the departure aerodrome, including taxi time and traffic congestion; and
- (b) APU consumption (if applicable).

Note For rotorcraft operations requiring a take-off prior to taxi, such as a hover taxi from a confined helipad, taxi fuel would be the fuel expected to be consumed before the commencement of the actual departure.

TDZ means touchdown zone.

the Regulations means CAR and CASR.

TLOF means touchdown and lift-off area and is the surface over which the touchdown and lift-off is conducted.

transition altitude means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

transition layer means the airspace between the transition altitude and the transition level.

transition level means the level at or above which the vertical position of an aircraft is controlled by reference to flight levels.

transponders and surveillance equipment: see subsection 1.07 (7).

trip fuel means the amount of fuel required to enable an aircraft to fly from any point along a route until landing at a destination aerodrome including (as applicable) the following:

- (a) fuel for take-off and climb from departure aerodrome elevation to initial cruising level or altitude, taking into account the expected departure routing;
- (b) fuel for cruise from top of climb to top of descent, including any step climb or descent;
- (c) fuel from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure;
- (d) fuel for executing an approach and landing at the planned destination aerodrome.

TSO is short for Technical Standard Order of the FAA: see the CASR Dictionary.

unforeseen factors means factors that could have an influence on an aircraft's fuel consumption to the planned destination aerodrome, including the following:

- (a) the aircraft's deviation from the expected fuel consumption data for an aircraft of the same type;
- (b) extended delays and deviations from planned routings or cruising levels.

Type 2 DAT approval means an approval issued by EASA that authorises the supply of aeronautical databases for which aircraft compatibility has been demonstrated.

Type 2 LOA means an LOA issued by the FAA or EASA that identifies the compatibility of its delivered data with a particular avionic system or avionic systems.

use NVIS means to use NVIS as the primary means of terrain avoidance for safe air navigation by means of visual surface reference external to the aircraft.

valid, for a navigation database: see section 14.07.

V_{AT} , or **velocity at threshold**, for this MOS, means the indicated airspeed at the threshold which is equal to the higher of whichever of the following is available in the landing configuration at the maximum certificated landing mass:

- (a) stall speed V_{SO} multiplied by 1.3; or
- (b) stall speed V_{SIG} multiplied by 1.23.

VFR, or **visual flight rules**, and has the meaning given by Part 1 of the CASR Dictionary.

VFR climb is a specific kind of ATC authorisation for an IFR flight.

VFR descent is a specific kind of ATC authorisation for an IFR flight.

VFR-on-top is a specific kind of ATC authorisation for an IFR flight.

VHF means very high frequency.

VMC, or **visual meteorological conditions**, and has the meaning given by Part 1 of the CASR Dictionary.

VMC criteria has the meaning given by Part 1 of the CASR Dictionary.

Note See section 2.07 of this MOS.

V_{min} means the minimum operating speed.

VNAV means vertical navigation.

VOR means VHF omnidirectional radio range.

V_{SIG} means the stalling speed, or the steady flight speed, obtained in the clean configuration at 1G.

V_{SO} has the meaning given by Part 1 of the CASR Dictionary.

V_y , for an aircraft, means the speed mentioned in the AFM for the best rate of climb.
WATIR, or **weather and terminal information reciter**, means a service, provided by an aerodrome operator:

- (a) that provides actual weather conditions at the aerodrome via telephone or broadcast; and
 - (b) the data for which is obtained from an AWS operated or approved by the BOM and supplemented by the aerodrome operator.
- (7) In this MOS:
- (a) a small number of additional definitions also appear in and for some particular sections; and
 - (b) a larger number of additional definitions are in section 26.67 in relation to transponders and surveillance equipment.
- (8) In this MOS:
- (a) **operative**, for anything, means that the thing is not inoperative; and
 - (b) **inoperative**, for anything, has the meaning given by Part 1 of the CASR Dictionary.