Explanatory Statement

Acts Interpretation Act 1901

Civil Aviation Safety Regulations 1998

Part 91 (General Operating and Flight Rules) Manual of Standards 2020

Purpose

The *Part 91 (General Operating and Flight Rules) Manual of Standards 2020* (the ***MOS***) sets out the standards for "the rules of the air" for pilots who are not operating under an Air Operator's Certificate (AOC) or other certificate and is the foundation for all aviation operations.

The MOS is made under Part 91 of the *Civil Aviation Safety Regulations 1998* (***CASR***). The MOS consolidates the existing rules of the air and contains some new rules to enhance operational flexibility, improve aviation safety and bring Australian requirements more in line with the Standards and Recommended Practices (***SARPs***) of the International Civil Aviation Organization (***ICAO***).

Legislation

The *Civil Aviation Act 1988* (the ***Act***) establishes the regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, with particular emphasis on preventing aviation accidents and incidents.

Subsection 98 (1) of the Act provides, in part, that the Governor-General may make regulations, not inconsistent with the Act, prescribing matters required or permitted by the Act to be prescribed, or necessary or convenient to be prescribed, for carrying out or giving effect to the Act. The *Civil Aviation Regulations 1988* (***CAR***) and CASR are made under the Act.

The *Civil Aviation Safety Amendment (Part 91) Regulations 2018* (***Part 91 of CASR***) were registered on 18 December 2018, and amended by the *Civil Aviation Legislation Amendment (Flight Operations—Miscellaneous Amendments) Regulations 2020* registered on 6 October 2020. Part 91 of CASR commences on 2 December 2021. Under regulation 91.040 of CASR, the Civil Aviation Safety Authority (***CASA***) may issue a Manual of Standards for Part 91 of CASR that prescribes matters required or permitted by that Part to be prescribed, or necessary or convenient for carrying out or giving effect to Part 91. This power is complemented by other provisions, throughout Part 91, which empower CASA to prescribe specific matters in the MOS.

Section 4 of the *Acts Interpretation Act 1901* (the ***AIA***) as applied by section 13 of the *Legislation Act 2003* (the ***LA***) provides, among other things, that if an Act (including a regulation) is enacted and at a time after its enactment (the ***start time***) the Act will confer power to make an instrument, that power may be exercised before the start time as if the relevant commencement had occurred. However, in general terms, the exercise of this power does not confer a power or right to impose an obligation on a person before the relevant commencement. Using section 4 of the AIA, the MOS is made under regulation 91.040 of CASR, a regulation that will not commence until 2 December 2021.

For convenience in this Explanatory Statement, unless a contrary intention appears, mention of a provision with the prefix "91." is a reference to that provision in Part 91 of CASR.

Background

Part 91 of CASR established a regulatory model that is designed to:

- provide more transparent and comprehensible aviation safety requirements by consolidating the general operational and flight rules

- modernise the regulatory framework by recognising developments in technology and international standards
- introduce certain new rules to enhance operational flexibility
- enhance aviation safety through the adoption of outcome-based regulations rather than prescriptive requirements, to place the onus on pilots, owners and operators to make appropriate decisions to achieve required safety outcomes in a manner that is best suited to the operator
- bring Australian requirements more in line with ICAO SARPs.

The MOS is issued to prescribe matters required, or permitted, by Part 91 of CASR, or matters that are necessary or convenient for carrying out or giving effect to Part 91 and thereby achieve the new regulatory model for the continued safe conduct of aviation operations.

The Part 91 MOS

The MOS sets out detailed technical flying and equipment requirements and related safety standards for the conduct of general flight operations. The MOS is a practical manual designed to mitigate the risks that might affect the take-off, landing or continued safe flight of an aircraft.

As far as possible in the context of the matters to be addressed, the MOS has been drafted in as plain a style of English presentation as the technical nature of the material will allow, to ensure that the document is, and is as usable as, such a practical manual. It contains numerous lists of various procedural and equipment requirements to be observed by a pilot in command to ensure safe flight.

This Explanatory Statement provides a note on, or a reference to, every Chapter, Division and section of the MOS, to explain the purpose and operation of the instrument as required by section 15J of the LA but it is not a repeat of the highly technical content of the MOS or in any sense an aviator's or a reader's substitute for the MOS. It provides a general explanation of the purpose and operation of the MOS as required by section 15J.

In support of the MOS, and before it commences on 2 December 2021, CASA will publish free and easily accessible guidance materials, including an illustrated *CASR Part 91 General Operating and Flight Rules Plain English Guide* addressed to pilots in particular, offering further practical guidance on many discrete issues dealt with in the MOS. This guidance will further explain the technical requirements of the MOS and, using plain language, it will clarify acceptable means of compliance with the MOS. This material will, therefore, complement the explanations of the purpose and operation of the MOS given in this Explanatory Statement.

As might be expected for a subject matter that encompasses the general operating and flight rules in Australia for Australian and foreign-registered civil and state aircraft and is the foundation for all aviation operations, the MOS is highly detailed and prescribes safety standards for a very wide range of matters. However, the following provides a summary overview of the structure and content of the 28 Chapters of the Part 91 MOS:

- Chapter 1 provides the name, commencement, authority, and scope of the MOS. It also provides for definitions and abbreviations, and addresses how certain documents are applied, adopted, or incorporated (***called up***)
- Chapter 2 makes the prescriptions required for certain definitions included in the CASR Dictionary by virtue of the *Civil Aviation Safety Amendment (Operations Definitions) Regulations 2019*
- Chapter 3 prescribes requirements for flights using a night vision imaging system (***NVIS***)
- Chapter 4 prescribes airspeed limits for flights
- Chapter 5 prescribes requirements for journey logs for international flights
- Chapter 6 prescribes requirements for flying in formation

- Chapter 7 prescribes requirements for flight preparation and weather assessments before commencing a flight
- Chapter 8 prescribes requirements for flight preparation and alternate aerodromes
- Chapter 9 prescribes requirements for flight notifications for IFR flights or VFR flights in Class C or D airspace
- Chapter 10 prescribes the series of checks that must be performed before take-off
- Chapter 11 prescribes requirements in relation to the use by an aircraft of various classes of airspace, including oceanic airspace
- Chapter 12 prescribes minimum height rules, including for flight over populous areas or public gatherings
- Chapter 13 prescribes requirements for VFR flights
- Chapter 14 prescribes requirements for IFR flights
- Chapter 15 prescribes requirements for IFR take-off and landing minima
- Chapter 16 prescribes circumstances in which an IFR flight must not make an approach to land at an aerodrome (approach bans)
- Chapter 17 is a Reserved Chapter acting as a placeholder for any future provisions for the designation of non-controlled aerodromes
- Chapter 18 is a Reserved Chapter acting as a placeholder for any future provisions prescribing who may start the engine of an aeroplane
- Chapter 19 prescribes requirements relating to the various categorisations of fuel that an aircraft must carry for a flight
- Chapter 20 prescribes requirements for the carriage of passengers and cargo on an aircraft, including seating, seatbelts and safety briefings
- Chapter 21 prescribes requirements for radio frequencies, broadcasts and reports
- Chapter 22 prescribes RNP navigation specifications
- Chapter 23 prescribes requirements that must be met if an aircraft is intercepted by another aircraft during a flight
- Chapter 24 prescribes requirements for the take-off performance of an aircraft
- Chapter 25 prescribes requirements for the landing performance of an aircraft
- Chapter 26 prescribes requirements for the fitment and carriage of equipment for an aircraft
- Chapter 27 prescribes requirements for a placard to be displayed inside an experimental aircraft carrying a passenger
- Chapter 28 prescribes requirements for minimum equipment lists for aircraft.

More details on the MOS provisions are set out in Appendix 2 of this Explanatory Statement.

Legislation Act 2003

Under subsection 8 (4) of the LA, an instrument is a legislative instrument if it is made under a power delegated by the Parliament, and any provision determines the law or alters the content of the law, and it has the direct or indirect effect of affecting a privilege or interest, imposing an obligation, creating a right, or varying or removing an obligation or right. The MOS amendment satisfies these requirements. Under paragraphs 98 (5A) (a) and 98 (5AA) (a) of the Act, an instrument made under regulations is a legislative instrument if it is issued in relation to matters affecting the safe navigation and operation of aircraft, and is expressed to apply to classes of persons. On each of these criteria, the MOS is a legislative instrument subject to registration, and tabling and disallowance in the Parliament, under sections 15G, and 38 and 42, of the LA.

Incorporations by reference
Under subsection 98 (5D) of the Act, the MOS may apply, adopt or incorporate any matter contained in any instrument or other writing. A non-legislative instrument may be incorporated into a legislative instrument made under the Act, as that non-legislative instrument exists or is in force at a particular time or from time to time (including a non-legislative instrument that does not exist when the legislative instrument is made).

Under paragraph15J (2) (c) of the LA, the Explanatory Statement must contain a description of the incorporated documents and indicate how they may be obtained. The Table below identifies the instruments and documents mentioned in the MOS that are applied, adopted, or incorporated in the MOS. The Table also identifies how the document may be obtained.

Document	**Description**	**Manner of incorporation**	**Source**
Part 11 of CASR	Part 11 sets out administrative provisions for the regulation of civil aviation, including approvals. Some operators may have to obtain CASA's written approval for various matters.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Part 21 of CASR	Part 21 sets out the certification and airworthiness requirements for aircraft and aircraft equipment. Various provisions of the MOS call up the Part 21 requirements.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Part 61 of CASR	Part 61 sets out the requirements and standards for the issue of flight crew licences and ratings, and their privileges. Section 3.02 of the MOS calls up the Part 61 requirements.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
CASR Dictionary	The CASR Dictionary provides definitions and interpretations of a general nature that are applicable across the whole regulatory structure. Various provisions of the MOS call up the CASR Dictionary.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.

Document	Description	Manner of incorporation	Source
Airspace Regulations 2007	The Airspace Regulations enable CASA to perform the functions and exercise the powers in connection with the administration and regulation of Australian- administered airspace. Various provisions of the MOS call up the *Airspace Regulations 2007*.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Civil Aviation Order 103.19 Instrument 2007	CAO 103.19 sets out the design standards relating to flight data recorders. Section 26.36 of the MOS calls up the requirements of CAO 103.19.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Civil Aviation Order 103.20 Instrument 2007	CAO 103.20 sets out the design standards relating to cockpit voice recorders. Section 26.36 of the MOS calls up the requirements of CAO 103.20.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Civil Aviation Amendment Order (No. R3) 2004 – Civil Aviation Order 20.4 – Provision & use of oxygen & protective breathing equipment (02/12/2004)	CAO 20.4 sets out the requirements regarding the provision and use of oxygen and protective breathing equipment. Section 26.47 of the MOS calls up the requirements of CAO 20.4.	As in force immediately before the commencement of this instrument until immediately before 2 December 2023.	This document is available for free on the Federal Register of Legislation.
Civil Aviation Order 108.26 – System specification – Oxygen systems (12/12/2004)	CAO 108.26 sets out the system specifications for oxygen systems intended for operation at altitudes up to 40 000 ft. Section 26.47 of the MOS calls up the requirements of CAO 108.26	As in force immediately before the commencement of this instrument until immediately before 2 December 2023.	This document is available for free on the Federal Register of Legislation.

Document	Description	Manner of incorporation	Source
Determination of Airspace and Controlled Aerodromes Etc. (Designated Airspace Handbook) Instrument	This instrument determines relevant volumes of airspace as flight information regions and areas, as classifications of airspace, and as control zones, and determines relevant controlled aerodromes. Various provisions of the MOS call up the Determination.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Designation of Prohibited, Restricted and Danger Areas – Declaration and Determination (Permanent PRDs) Instruments	This non-legislative instrument is periodically reviewed and made freely available by CASA to designate prohibited, restricted and danger areas. Various provisions call up the Designation.	As in force or existing from time to time.	This document is available for free on CASA's website https://www.casa.gov.au/information-architecture/legislative-and-non-legislative-instruments.
Aeronautical Information Publication (AIP)	The AIP is published by Airservices Australia to disseminate information relevant to aviation participants on matters essential to safe air navigation. Various provisions of the MOS call up the AIP requirements.	As in force or existing from time to time.	The AIP is available for free on the Airservices Australia website www.airservicesaustralia.com/aip/aip.asp.
Aircraft flight manual (AFM)	An AFM contains information required to safely operate the specific aircraft. Various provisions of the MOS call up AFM requirements.	As in force or existing from time to time.	These documents are publicly available but not for free. The AFM for an aircraft is the proprietary property of the owner of the aircraft design (usually the manufacturer). The incorporated requirements of the AFM are at the aircraft-specific level, and instructions are required to be provided to owners or registered operators of aircraft — see below

Document	Description	Manner of incorporation	Source
			for further information.
Annex 2 to the Chicago Convention – Rules of the Air	Annex 2 sets out general rules, visual flight rules and instrument flight rules and applies to a contracting State to the Chicago Convention. Various provisions of the MOS call up Annex 2 requirements.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to ICAO. It is made available by ICAO for a fee (https://store.icao.int/) — see below for further information.
Annex 3 to the Chicago Convention	Annex 3 contributes to the safety, efficiency and regularity of air navigation by providing meteorological information to operators, flight crew members, air traffic services units, search and rescue units, airport management and others concerned with aviation. Various provisions of the MOS call up Annex 3 requirements.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to ICAO. It is made available by ICAO for a fee (https://store.icao.int/) — see below for further information.
Annex 10 to the Chicago Convention	Annex 10 sets out the aeronautical communications, navigation and surveillance requirements for international civil aviation. Various provisions of the MOS call up Annex 10 requirements.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to ICAO. It is made available by ICAO for a fee (https://store.icao.int/) — see below for further information.
ICAO Document 8896 – Manual of Aeronautical Meteorological Practices	This document provides guidance on practices to be used in the provision of meteorological service to air navigation. Various provisions of the MOS call up ICAO Document 8896.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to ICAO. It is made available by ICAO for a fee (https://store.icao.int/ — see below for further information.

Document	Description	Manner of incorporation	Source
ICAO Document 8168, Volume 1	This document sets out the operational procedures recommended for the guidance of flight operations personnel. Various provisions of the MOS call up ICAO Document 8168.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to ICAO. It is made available by ICAO for a fee (https://store.icao.int/) — see below for further information.
Federal Aviation Regulations (FAR) 25	FAR 25 sets out the FAA airworthiness standards for transport category aeroplanes. Section 26.53 of the MOS calls up certain definitions from FAR 25.	As in force or existing from time to time.	This document is available for free on the Electronic Code of Federal Regulations website https://www.ecfr.gov/cgi-bin/text-idx?SID=24e75b7361a31df6fc7b4b34c9208c66&mc=true&tpl=/ecfrbrowse/Title14/14tab_02.tpl.
Federal Aviation Regulations 27	FAR 27 sets out the FAA airworthiness standards for normal category rotorcraft. FAR 27 is called up in multiple definitions for the MOS.	As in force or existing from time to time.	This document is available for free on the Electronic Code of Federal Regulations website https://www.ecfr.gov/cgi-bin/text-idx?SID=24e75b7361a31df6fc7b4b34c9208c66&mc=true&tpl=/ecfrbrowse/Title14/14tab_02.tpl.
Federal Aviation Regulations 29	FAR 29 sets out the FAA airworthiness standards for transport category rotorcraft. FAR 29 is called up in multiple definitions for the MOS.	As in force or existing from time to time.	This document is available for free on the Electronic Code of Federal Regulations website https://www.ecfr.gov/cgi-bin/text-idx?SID=24e75b7361a31df6fc7b4b34c9208c66&mc=true&tpl=/ecfrbrowse/Title14/14tab_02.tpl.

Document	Description	Manner of incorporation	Source
14 CFR 91.227	FAR 91 sets out the FAA general operating and flight rules. 14 CFR 91.227 sets out, within FAR 91, the FAA requirements for ADS-B equipment performance and pre-flight performance based on an ADS-B Out equipment. This document is called up in section 26.72 of the MOS.	As in force or existing from time to time.	This document is available for free on the Electronic Code of Federal Regulations website https://www.ecfr.gov/cgi-bin/text-idx?SID=24e75b7361a31df6fc7b4b34c9208c66&mc=true&tpl=/ecfrbrowse/Title14/14tab_02.tpl.
AS/NZS 4280.1:2003, *406 MHz satellite distress beacons – Marine emergency position-indicating radio beacons (EPIRBs)*	AS/NZS 4280:2017 Part 1 sets out the minimum radiofrequency and environmental requirements to comply with the Australia and New Zealand radiofrequency spectrum and maritime regulatory requirements. This document is called up in section 26.51 of the MOS.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to Standards Australia. It is made available by Standards Australia for a fee (https://shop.standards.govt.nz/catalog/4280.1%3A2003%28AS%7CNZS%29/view).
AS/NZS 4280.2:2003,*406 MHz satellite distress beacons – Personal locator beacons (PLBs)*	This document sets out the minimum radiofrequency and environmental requirements to comply with Australian and New Zealand radiofrequency spectrum, and maritime and aviation regulatory requirements. This document is called up in section 26.51 of the MOS.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to Standards Australia. It is made available by Standards Australia for a fee (https://shop.standards.govt.nz/catalog/4280.2%3A2003%28AS%7CNZS%29/view).

Document	Description	Manner of incorporation	Source
AS/NZS 1754:2004, *Child restraint systems for use in motor vehicles*	This document sets out the requirements for restraining devices for child occupants of passenger cars and their derivatives. This document is called up in section 20.04 of the MOS.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to Standards Australia. It is made available by Standards Australia for a fee (https://www.standards.org.au/standards-catalogue/others/sa-slash-snz/as-slash-nzs--1754-2004).
Federal Motor Vehicle Safety Standards No. 213	This standard specifies the US requirements for child restraint systems used in motor vehicles and aircraft. This document is called up in section 20.04 of the MOS.	As in force or existing from time to time.	This document is available for free on the Electronic Code of Federal Regulations website (https://www.ecfr.gov/cgi-bin/text-idx?SID=5504a28bd64f71153db299c96a9412a7&mc=true&node=pt49.6.571&rgn=div5#se49.6.571_1213).
Canadian Motor Vehicle Safety Standard No. 213	This standard sets out the Canadian safety requirements for child restraint systems. This document is called up in section 20.04 of the MOS.	As in force or existing from time to time.	This document is available for free on the Justice Laws Website (https://laws-lois.justice.gc.ca/eng/regulations/SOR-2010-90/FullText.html).
European Safety Standard requirements of ECE Regulation 44	This standard sets out uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles. This document is called up in section 20.04 of the MOS.	As in force or existing from time to time.	This document is available for free on the EUR-Lex website (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:42011X0909(02)).

Document	Description	Manner of incorporation	Source
ATSO-1C74c *Airborne ATC Transponder Equipment*	This document prescribes the requirements that a manufacturer of airborne air traffic control (ATC) transponder equipment must meet in order for the equipment to be identified with the applicable ATSO marking and for the equipment to be an approved article. This document is called up in the definition of ***approved Mode A/C transponder*** in the MOS.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation, contained within the *Part 21 Manual of Standards Instrument 2016* (https://www.legislation.gov.au/Details/F2017C01160/Html/Text#_Toc500486105).
ETSO-C74d	This document provides the EASA standards for airborne ATC transponder equipment. Section 26.67 of the MOS calls up this document.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C74c *Airborne ATC Transponder Equipment*	This document provides the FAA standards for airborne ATC transponder equipment. Section 26.67 of the MOS calls up this document.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C88a *Automatic Pressure Altitude Reporting Code Generating Equipment*	This document provides the EASA requirements which automatic pressure altitude reporting code generating equipment must meet in order to be identified with the applicable ETSO marking. Section 26.69 of the MOS calls up this document.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C88a *Automatic Pressure Altitude Reporting Code Generating Equipment*	This document provides the FAA requirements automatic pressure altitude reporting code generating equipment must meet in order to be identified with the applicable TSO marking.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).

Document	Description	Manner of incorporation	Source
ETSO-2C112	This document provides the EASA requirements which a secondary surveillance radar mode S transponder must meet in order to be identified with the applicable ETSO marking. This document is incorporated in the definition of ***approved Mode S transponder*** in section 26.67 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C112 *Air Traffic Control Radar Beacon System/Mode Select (ATCRBS/Mode S) Airborne Equipment*	This document provides the FAA requirements which ATCRBS/Mode S airborne equipment must meet for identification with the applicable TSO marking. This document is incorporated in the definition of ***approved Mode S transponder*** in the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C123a *Cockpit Voice Recorders Systems*	This document provides the EASA requirements for cockpit voice recorder systems. This document is called up in section 26.36 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C123a	This document provides the FAA requirements for cockpit voice recorder systems. This document is called up in section 26.36 of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C124a *Flight Data Recorder Systems*	This document provides the EASA requirements for flight data recorder systems. This document is called up in section 26.36 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).

Document	Description	Manner of incorporation	Source
TSO-C124a *Flight Data Recorder Systems*	This document provides the FAA requirements for flight data recorder systems. This document is called up in section 26.36 of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C129 *Airborne Supplemental Navigation Equipment Using Global Positioning System (GPS)*	This document provides the EASA requirements for airborne supplemental navigation equipment using GPS to be identified with the applicable TSO marking. This document is called up in the definition of ***approved GNSS*** in the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C129 *Airborne Supplemental Navigation Equipment Using Global Positioning System (GPS)*	This document provides the FAA requirements for airborne supplemental navigation equipment using GPS to be identified with the applicable TSO marking. This document is called up in the definition of ***approved GNSS*** in the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C142a *Non-Rechargeable Lithium Cells and Batteries*	This document provides the EASA requirements which non-rechargeable lithium cells and batteries must meet. This document is called up in section 26.49 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C142a *Non-Rechargeable Lithium Cells and Batteries*	This document provides the FAA requirements which non-rechargeable lithium cells and batteries must meet. This document is called up in section 26.49 of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).

Document	Description	Manner of incorporation	Source
ETSO-C145 *Airborne Navigation Sensors Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*	This document provides the EASA requirements for airborne navigation sensors using the GPS augmented by WAAS to be identified with the applicable ETSO marking. This document is called up in the definition of ***approved GNSS*** in the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C145 *Airborne Navigation Sensors Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*	This document provides the FAA requirements for airborne navigation sensors using the GPS augmented by WAAS to be identified with the applicable TSO marking. This document is called up in the definition of ***approved GNSS*** in the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C146 *Stand-Alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*	This document provides the EASA requirements for stand-alone airborne navigation equipment using the GPS augmented by the satellite-based augmentation System to be identified with the applicable ETSO marking. This document is called up in the definition of ***approved GNSS*** in the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C146 *Stand-Alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)*	This document provides the FAA requirements for stand-alone airborne navigation equipment using the GPS augmented by the WAAS to be identified with the applicable TSO marking. This document is called up in various provisions of the MOS.	As in force or existing from time to time.	Various versions of this document are available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).

Document	Description	Manner of incorporation	Source
ETSO-C166	This document provides the requirements which Extended Squitter Automatic Dependent Surveillance-Broadcast (ADS-B) and Traffic Information Services-Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz) must meet in order to be identified with the applicable ETSO marking. This document is called up in section 26.67 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).
TSO-C166 *Extended Squitter Automatic Dependent Surveillance – Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz)*	This document provides the FAA requirements which extended squitter ADS-B and TIS-B equipment operating on the radio frequency of 1090 MHz must meet in order to be identified with the applicable TSO marking. This document is called up in section 26.67 of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-C196a *Airborne Supplemental Navigation Sensors for Global Positioning System Equipment Using Aircraft-Based Augmentation*	This document provides the EASA requirements which airborne supplemental navigation sensors for GPS equipment using aircraft-based augmentation must meet in order to be identified with the applicable ETSO marking. This document is called up in various provisions of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).

Document	Description	Manner of incorporation	Source
TSO-C196a *Airborne Supplemental Navigation Sensors for Global Positioning System Equipment using Aircraft-Based Augmentation*	This document provides the FAA requirements which airborne supplemental navigation sensors for GPS equipment using aircraft-based augmentation must meet in order to be identified with the applicable TSO marking. This document is called up in various provisions of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
TSO-C126 *406 MHz Emergency Locator Transmitter (ELT)*	This document sets the FAA requirements for 406 MHz ELTs. This document is called up in sections 26.50 and 26.51 of the MOS.	As in force or existing from time to time.	This document is available for free on the FAA website (https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/MainFrame?OpenFrameSet).
ETSO-2C126 *406 MHz Emergency Locator Transmitter (ELT)*	This document sets the EASA requirements for 406 MHz emergency locator transmitters (ELT). This document is called up in sections 26.50 and 26.51 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso)
ETSO-2C91a *Emergency Locator Transmitter (ELT) Equipment*	This document sets the EASA requirements which emergency locator transmitter equipment must meet in order to be identified with the applicable ETSO marking. This document is called up in sections 26.50 and 26.51 of the MOS.	As in force or existing from time to time.	This document is available for free on the EASA website (https://www.easa.europa.eu/domains/aircraft-products/etso-authorisations/list-of-all-etso).

Document	Description	Manner of incorporation	Source
EASA AMC 20-24 *Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHZ Extended Squitter*.	This document sets out the EASA acceptable means of compliance for the certification considerations for the enhanced ATS in non-radar areas using ADS-B-NRA application via 1090 MHZ extended squitter. This document is called up in section 26.72 of the MOS.	As in force or existing from time to time.	This document is available for free at https://www.easa.europa.eu/sites/default/files/dfu/Annex%20II%20-%20AMC%2020-24.pdf.
EASA CS ACNS	This document provides the certification specifications and acceptable means of compliance for airborne communications, navigation and surveillance. This document is called up in section 26.72 of the MOS.	As in force or existing from time to time.	This document is available for free at https://www.easa.europa.eu/sites/default/files/dfu/Annex%20I%20to%20ED%20Decision%202019-011-R%20-%20CS%20ACNS%20Issue%202.pdf.
EASA CS-27	This document provides the EASA certification specifications for small rotorcraft. Various provisions of the MOS call up this document.	As in force or existing from time to time.	This document is available for free at https://www.easa.europa.eu/sites/default/files/dfu/cs-27_amendment_7.pdf.
EASA CS-29	This document provides the EASA certification specifications for large rotorcraft. Various provisions of the MOS call up this document.	As in force or existing from time to time.	This document is available for free at https://www.easa.europa.eu/sites/default/files/dfu/CS-29%20Amendment%208.pdf.

Document	Description	Manner of incorporation	Source
RTCA/DO-229D *Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment*	This document sets out the minimum operational performance standards for global positioning system/wide area augmentation system airborne equipment. This document is called up in section 26.71 of the MOS.	As dated 13 December 2006.	This document is publicly available but subject to copyright protection. The document may be purchased from www.rtca.org.
RTCA/DO-260 *Minimum Operational Performance Standards for 1090 MHz Automatic Dependent Surveillance – Broadcast (ADS-B)*	This document sets out the minimum operational performance standards for 1090 MHz ADS-B. This document is called up in the definition of ***NUCp*** in the MOS.	As dated 13 September 2000.	This document is publicly available but subject to copyright protection. The document may be purchased from www.rtca.org.
RTCA/DO-260B *Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services – Broadcast (TIS-B)*	This document contains minimum operational performance standards for airborne equipment for ADS-B and TIS-B utilizing 1090 MHz Mode S Extended Squitter. This document is called up in the definitions of ***NACp*** and ***SIL*** in the MOS.	As dated 2 December 2009.	This document is publicly available but subject to copyright protection. The document may be purchased from www.rtca.org.
NAT Doc 007, *North Atlantic Operations and Airspace Manual*	This document provides guidance regarding the operational approval and aircraft system requirements for flight in the NAT HLA. This document is called up in the definition of ***NAT HLA*** in the MOS.	As in force or existing from time to time.	This document is available for free at www.icao.int/EURNAT.

Further information

Annex 2, Annex 3, and Annex 10 to the Convention on International Civil Aviation, ICAO Documents 8168, Volume 1 and 8896, Australian Standard/New Zealand Standards (AS/NZS) 4280.1-2003, 4280.2-2003 and 1754:2004 and Radio Technical Commission for Aeronautics (RTCA) DO – 229D and DO-260 are copyright, commercial products for which there is a cost to obtain a copy. These costs are not considered to be unreasonably onerous for operators to whom they are most relevant, but do involve a modest impost for some others, although academic and other researchers may obtain free access through university library subscriptions.

CASA has no effective control over these costs and it is considered extremely unlikely that the relevant owner of the intellectual property in the documents would sell CASA the copyright at a price that would be an effective and efficient use of CASA's appropriated funds, or would otherwise permit CASA to make the document freely available.

CASA has incorporated the documents in the instrument because, under the Chicago Convention, they are appropriate and necessary to modernise the safety regulatory scheme in the Part 91 MOS, and because no other similar documents that serve the same aviation safety purpose are freely available.

CASA has noted the views of the Senate Standing Committee on Regulations and Ordinances (in its report *Parliamentary scrutiny of delegated legislation*, tabled out of session on 3 June 2019) that:

> The incorporation of material by reference (particularly where that material is not publicly available) has been a longstanding concern for the committee. [para 3.65]

and:

> The committee appreciates that it may in some cases be costly to provide free, public access to all incorporated Australian and international standards. Nevertheless, the committee reiterates that one of its core functions is to ensure that all persons subject to or interested in the law may readily and freely access its terms. It intends to continue to monitor this issue. Any justification for a failure to provide for public access to incorporated documents, and any action the committee takes in relation to this matter, will be determined on a case-by-case basis. [para 3.75]

CASA appreciates the Committee's concern and to mitigate the situation as far as currently practicable proposes that where an incorporated document is copyright and not otherwise freely available to the general public, but is available to CASA as a licenced subscriber, CASA will, by prior arrangement, make CASA's copy available, for in-situ viewing, free of charge, at any office of CASA.

Consultation

CASA has developed the Part 91 MOS over a lengthy period of time through the collaborative efforts of the Aviation Safety Advisory Panel (***ASAP***), its Part 91 Technical Working Group (***TWG***) and the wider aviation community.

In February 2018, the Part 91 TWG first convened to evaluate the new Part 91 and the MOS prior to public consultation. CASA engaged in public consultation on the proposals, from 27 March to 6 May 2018, through the release of a Summary of Proposed Change outlining the proposed amendments to Part 91 of CASR and the proposed MOS standards. From this date onwards, all consultation was based on actual drafts of the proposed rules. The consultation received 116 responses. Feedback on Part 91 of CASR from previous consultations in 2011 and 2015 was also considered and incorporated into the 2018 consultation drafts.

In July 2018, the TWG reconvened to review and discuss CASA's response to the feedback received during public consultation and provided their recommendations to the ASAP. Based on these recommendations the ASAP endorsed making both CASR Part 91 and the Part 91 MOS.

The proposed final text of the MOS was provided to the Part 91 TWG members on 14 May 2020 for final comment by 1 June 2020. Comments were received and there was general consensus that the MOS needed only minor adjustment. All comments were taken into account and the MOS finalised.

Regulation Impact Statement

A Regulation Impact Statement (***RIS***) was prepared by CASA for the new Part 91 and this RIS also covered the MOS which the regulations empowered. The RIS was assessed by the Office of Best Practice Regulation (***OBPR***) as compliant with the Best Practice Regulation requirements and contained a level of analysis commensurate with the likely impacts (OBPR id: 23625). A copy of the RIS was included in the Explanatory Statement for the new Part 91 regulations (https://www.legislation.gov.au/Details/F2018L01783/Download).

Statement of Compatibility with Human Rights

A Statement of Compatibility with Human Rights is at Appendix 1. This concludes that the MOS is compatible with human rights and, to the extent that it may also limit human rights in some particular respects, those limitations are reasonable, necessary and proportionate to ensure the safety of aviation operations and to promote the integrity of the aviation safety system.

Commencement and making

The MOS commences immediately after the commencement of Part 91 of CASR on 2 December 2021. The empowerment for the MOS, contained in Part 91, in particular in regulation 91.040, had not commenced when the MOS was made. However, this is permitted under section 4 of the AIA which authorises the anticipatory making of a subordinate instrument in these circumstances, provided the instrument does not commence until (or after) the delayed empowering instrument has itself commenced.

The MOS has been made by the Director of Aviation Safety, on behalf of CASA, in accordance with subsection 73 (2) of the Act.

APPENDIX 1

Statement of Compatibility with Human Rights

Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011

Part 91 (General Operating and Flight Rules) Manual of Standards 2020

This legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

Overview of the Disallowable Legislative Instrument

The *Civil Aviation Safety Amendment (Part 91) Regulations 2019* (the ***Regulations***) amends the *Civil Aviation Safety Regulations 1998* (***CASR***) to introduce a new Part 91 under which a Manual of Standards is prescribed for the regulation of the standards for the General Operating and Flight Rules.

As might be expected for a subject matter that encompasses the general operating and flight rules in Australia for Australian and foreign-registered civil and state aircraft and is the foundation for all aviation operations, the MOS is highly detailed and prescribes safety standards for a very wide range of matters. However, the following provides a summary overview of its structure and content:

- Chapter 1 provides the name, commencement, authority, and scope of the MOS. It also provides for definitions and abbreviations, and addresses how certain documents are applied, adopted or incorporated (***called up***)
- Chapter 2 makes the prescriptions required for certain definitions included in the CASR Dictionary by virtue of the *Civil Aviation Safety Amendment (Operations Definitions) Regulations 2019*
- Chapter 3 prescribes requirements for flights using a night vision imaging system (***NVIS***)
- Chapter 4 prescribes airspeed limits for flights
- Chapter 5 prescribes requirements for journey logs for international flights
- Chapter 6 prescribes requirements for flying in formation
- Chapter 7 prescribes requirements for flight preparation and weather assessments before commencing a flight
- Chapter 8 prescribes requirements for flight preparation and alternate aerodromes
- Chapter 9 prescribes requirements for flight notifications for IFR flights or VFR flights in Class C or D airspace
- Chapter 10 prescribes the series of checks that must be performed before take-off
- Chapter 11 prescribes requirements in relation to the use by an aircraft of various classes of airspace, including oceanic airspace
- Chapter 12 prescribes minimum height rules, including for flight over populous areas or public gatherings
- Chapter 13 prescribes requirements for VFR flights
- Chapter 14 prescribes requirements for IFR flights
- Chapter 15 prescribes requirements for IFR take-off and landing minima
- Chapter 16 prescribes circumstances in which an IFR flight must not make an approach to land at an aerodrome (approach bans)
- Chapter 17 is a Reserved Chapter acting as a placeholder for any future provisions for the designation of non-controlled aerodromes

- Chapter 18 is a Reserved Chapter acting as a placeholder for any future provisions prescribing who may start the engine of an aeroplane
- Chapter 19 prescribes requirements relating to the various categorisations of fuel that an aircraft must carry for a flight
- Chapter 20 prescribes requirements for the carriage of passengers and cargo on an aircraft, including seating, seatbelts and safety briefings
- Chapter 21 prescribes requirements for radio frequencies, broadcasts and reports
- Chapter 22 prescribes RNP navigation specifications
- Chapter 23 prescribes requirements that must be met if an aircraft is intercepted by another aircraft during a flight
- Chapter 24 prescribes requirements for the take-off performance of an aircraft
- Chapter 25 prescribes requirements for the landing performance of an aircraft
- Chapter 26 prescribes requirements for the fitment and carriage of equipment for an aircraft
- Chapter 27 prescribes requirements for a placard to be displayed inside an experimental aircraft carrying a passenger
- Chapter 28 prescribes requirements for minimum equipment lists for aircraft.

Human rights implications

The MOS may engage the following human rights:

- the right to life under Article 6 and the right to privacy and reputation under Article 17 of the International Covenant on Civil and Political Rights (the ***ICCPR***)
- the right to work under Article 6 (1) and the right to safe and healthy working conditions under Article 7 of the International Covenant on Economic, Social and Cultural Rights (the ICESCR).

Right to life under the ICCPR

Right to safe and healthy working conditions under the ICESCR

The MOS may engage these rights. This engagement is in the context of CASA's statutory purpose. The aim of CASA and its regulatory framework, including Part 91 of CASR and its related MOS, is to uphold aviation safety by prescribing the conduct of individuals and organisations involved in civil aviation operations, including flight operations. It is, therefore, a threshold requirement for all CASA legislative instruments that they preserve, promote and enhance aviation safety. Insofar as the MOS is crafted and intended, as far as practicable, to promote and enhance aviation safety standards for flight operations, it promotes the right to life under Article 6 of the ICCPR by legislating for safer conditions that will minimise the risk of accidents and prevent accidental death. Thus, for Article 7 of the ICESCR, the MOS promotes the right to safe and healthy working conditions for pilots and crew of aircraft.

Right to privacy and reputation

The MOS may engage these rights. Article 17 of the ICCPR provides that no one shall be subjected to arbitrary or unlawful interference with their privacy, family, home or correspondence, or to unlawful attacks on their honour and reputation. It further provides that everyone has the right to the protection of the law against such interference or attack.

Chapter 5 of the MOS prescribes requirements in relation to the keeping and maintaining of a journey log that must include the aircraft registration, names, place of departure and place of arrival. The information is required so that the crew members can be identified to CASA for safety regulatory purposes, for example, in the course of safety surveillance, inspections and audits or emergencies.

Under Division 26.9 — *Flight recording equipment*, operators of certain turbine-powered aircraft must fit flight data recorders (***FDRs***) and cockpit voice recorders (***CVRs***) to the aircraft. The FDRs must record and retain the last 25 hours of flight data metrics from the aircraft's operation. The CVRs must record and retain the last 30 minutes of cockpit voice recording during a flight, before the tape is wiped and the cycle resumes again for the next 30 minutes of flight. Both kinds of recorders are vital instruments for use in the official investigation if the aircraft suffers an accident. Because of the potential that the information recorded on a CVR might potentially infringe the right to privacy of pilots in the cockpit, *Part IIIB — Protection of CVR (cockpit voice recording) information* of the *Civil Aviation Act 1988* (the ***Act***) makes it an offence to copy or disclose CVR information except for a prescribed purpose (such as a statutory accident investigation, certain criminal proceedings, and civil proceedings but only if a court has made a public interest order). Admissibility of CVR information in court is subject to statutory constraints. No disciplinary action may be taken against a person on the basis of CVR information.

Chapter 28 of the MOS provides that the name of the operator of the aircraft must be recorded in the minimum equipment list (***MEL***) for that aircraft. This information is required so that person with responsibility for ensuring the safe operation of the aircraft can be readily identified both to CASA and to other persons who have legitimate access to the MEL, in the event that they need to be contacted in the course of safety surveillance, inspections and audits.

The requirements in the provisions mentioned above involve activities of 1 or more of: collecting, recording and storing personal information. For the reasons stated above, the requirements are reasonable, necessary and proportionate to achieve the fulfilment of specific aviation safety objectives, including the protection of the safety of individuals and the protection of the integrity of the aviation safety regulatory scheme by ensuring that information is available about who is performing activities affecting safety and demonstrating, where relevant, that they are appropriately authorised. CVR requirements are often indispensable for accident investigation because they are designed to help to identify causes and facilitate remedies that will reduce or eliminate the risk of a similar accident occurring again, thereby protecting the right to life.

The protections afforded by the *Privacy Act 1988* and by Part IIIB of the Act, continue to apply to the information. These 2 Acts embody the protections that the Australian Parliament currently regards as suitable for the protection of the relevant personal information.

To the extent that the MOS may limit the privacy-related rights in Article 17 of the ICCPR, those limitations are, therefore, reasonable, necessary and proportionate to ensure the safety of air navigation, consistent with the objects of the Act, CASR and, in particular, Part 91 of CASR in relation to safe operation in flight.

Right to work

The MOS may engage the right to work that is protected under Article 6 (1) of the ICESCR. This right includes the right of everyone to the opportunity to gain their living by work which they freely choose or accept.

The MOS does not directly address the right to work. However, its numerous provisions may have an impact on the way that the work involved in safely operating an aircraft is carried out. Many obligations of care, skill, technique and procedure are imposed on pilots to this end. Failure to follow the relevant requirements of the MOS when flying an aircraft could result in the loss of a licence or the loss of continued employment.

However, in the interests of aviation safety, it is necessary that pilots follow the flying rules. Therefore, in the circumstances, the obligations arising under the MOS are reasonable, necessary and proportionate requirements under aviation safety law to ensure aviation safety.

Accordingly, any potential limitation on the right to work is itself necessary, reasonable and proportionate in achieving the aim of protecting and improving aviation safety consistent with the objects of the Act and the regulations.

Conclusion

The MOS is a legislative instrument that is compatible with human rights and, to the extent that it may also limit human rights, those limitations are reasonable, necessary and proportionate to ensure the safety and of the integrity of the aviation safety system which all aviation operations rely.

APPENDIX 2

Details of the Part 91 (General Operating and Flight Rules) Manual of Standards 2020

CHAPTER 1 PRELIMINARY

Section 1.01 provides for the naming of the *Part 91 (General Operating and Flight Rules) Manual of Standards 2020* (the ***MOS***).

Section 1.02 provides that the commencement of the MOS is immediately after the commencement of Part 91 of CASR. Part 91 of CASR was created within the *Civil Aviation Safety Amendment (Part 91) Regulations 2018* which was registered on 18 December 2018, but does not to commence until 2 December 2021. Thus, the empowerment for the MOS in regulation 91.040 had not commenced when the MOS was made. However, this is permitted under section 4 of the *Acts Interpretation Act 1901*, which authorises the anticipatory making of a subordinate instrument in these circumstances, provided the instrument does not commence until (or after) the delayed empowering instrument has itself commenced.

Subsection 1.03 (1) provides that, unless a contrary intention appears, a reference to an instrument or other document (however described) is a reference to the instrument or document, as in force or existing from time to time.

Subsection 1.03 (2) provides that, unless a contrary intention appears, a reference to any legislative instrument is a reference to the instrument, as in force from time to time.

Subsection 1.03 (3) provides that, unless a contrary intention appears, a reference in the MOS to any document that is applied, adopted or incorporated is a reference to the document as it exists or is in force from time to time.

Subsection 1.04 (1) provides that a reference to an International Civil Aviation Organization (***ICAO***) document is a reference to the document as in force or existing from time to time.

Subsection 1.04 (2) provides that a 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.

Subsection 1.04 (3) provides that a reference to a numbered ICAO Manual, Circular or other ICAO document is a reference to that particular numbered document, or subsequent version, as in force or existing from time to time and issued by ICAO.

Subsection 1.04 (4) provides that a 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.

A Note provides a link as to how the relevant ICAO documents for this MOS may be accessed. A second Note clarifies that a reference to an ICAO document, including an ICAO Annex, which only occurs in a Note to a provision of the MOS 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.

Subsection 1.05 (1) provides that unless a contrary intention appears, a reference to a particular AS/NZS standard is a reference to the particular joint Australian and New Zealand Standard, as in force or existing from time to time.

Subsection 1.05 (2) provides that unless a contrary intention appears, a reference to a particular TSO is a reference to that TSO or a later version of that TSO.

Subsection 1.05 (3) provides that unless a contrary intention appears, a reference to a particular ETSO is a reference to that ETSO or a later version of that ETSO. A Note explains that TSO later versions are identified by an alphabetical letter — TSO-C129 versus TSO-C129a. Unless the contrary intention appears, a reference to TSO-C129 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.

Subsection 1.05 (4) provides that 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.

Section 1.06 provides that the Table of Contents for the MOS is for guidance only. It further provides that the Table may be modified or edited in any published version of the MOS and does not form part of the MOS.

Subsection 1.07 (1) provides that words and phrases used in the MOS have the same meaning as in Part 91 of CASR and in the Act unless a contrary intention appears.

Subsection 1.07 (2) provides that unless a contrary intention appears, a mention in the MOS of a provision with the prefix “91” is a reference to that provision in Part 91 of CASR.

Subsection 1.07 (3) provides that a reference to an aerodrome includes a helideck unless a helideck is expressly excluded for the purposes of a provision.

Subsection 1.07 (4) provides that 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.

Subsection 1.07 (5) provides that 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.

Subsection 1.07 (6) provides definitions of key words, phrases and abbreviations used in the MOS.

Subsection 1.07 (7) clarifies that addition definitions appear in, and for, some particular sections of the MOS.

Subsection 1.07 (8) specifies the definition of ***operative*** and ***inoperative*** for the MOS.

CHAPTER 2 PRESCRIPTIONS FOR CERTAIN DEFINITIONS IN THE CASR DICTIONARY

Division 2.1 Definition of special VFR

Section 2.01 provides the operational requirements for the definition of ***special VFR*** in the CASR Dictionary, including what the pilot in command must do to operate under the special VFR.

Division 2.2 Definition of specified aircraft performance category

Subsection 2.02 (1) provides the operational requirements of the definition of ***specified aircraft performance category*** in the CASR Dictionary.

Subsection 2.02 (2) provides for an aeroplane with an indicated airspeed (***IAS***) mentioned in Table 2.02 (2) columns 2-5 has corresponding aircraft performance in column 1. Table 2.02 (2) sets out a number of variables which determine the performance category of an aircraft.

Subsection 2.02 (3) provides that for an aeroplane the specified aircraft performance category is the highest of the aircraft performance categories determined in Table 2.02 (2).

Subsection 2.02 (4) provides the specified aircraft performance category requirements for a helicopter.

Subsection 2.02 (5) provides the specified aircraft performance category requirements for a powered-lift aircraft.

Division 2.3 Definition of standard visual signal

Section 2.03 provides that the purpose of this Division is to prescribe, for the definition of ***standard visual signal*** in the CASR Dictionary, light, hand and ground signals and the requirements and circumstances for their display.

Section 2.04 provides the light (which includes projectiles) signals to aircraft that are prescribed standard visual signals. Such signals are depicted in Table 2.04 (1). Table 2.04 (1) also includes the meaning of these signals for an aircraft in flight or on the ground at an aerodrome.

Section 2.05 provides the ground signals to aircraft that are depicted in Table 2.05 (1) are prescribed standard visual signals. Table 2.05 (1) also includes a description of these signals, where the ground signal is displayed at an aerodrome (display location) and the meaning of each ground signal.

Section 2.06 provides that the hand signals mentioned in nominated documents are prescribed standard visual signals.

Division 2.4 Definition of VMC criteria

Section 2.07 prescribes the visual meteorological conditions (VMC) criteria for classes of aircraft and classes of airspace, and the conditions certain operations must adhere to. Table 2.07 (3) sets out the variables to determine the VMC criteria and operational requirements applicable to an operation.

Division 2.5 Definitions of specified cruising levels

Section 2.08 provides that this Division is for the definitions in the CASR Dictionary of ***specified IFR cruising*** level for a track and ***specified VFR cruising level*** for a track.

Section 2.09 prescribes the specified cruising level for both an IFR or VFR flight on a track at or north of 80° south. Table 2.09 (1) sets out the specified cruising levels.

Section 2.10 prescribes the specified cruising level for an IFR or a VFR flight on a track south of 80° south. Table 2.10 (1) sets out the specified cruising levels.

CHAPTER 3 NVIS FLIGHTS

Section 3.01 provides the purpose of this Chapter is to prescribe requirements for the conduct of an NVIS flight.

Section 3.02 prescribes detailed requirements for the conduct of an NVIS flight, as follows:

- the pilot of an aircraft must not conduct NVIS unless they are authorised under Part 61 of CASR to use NVIS and has met all the recency requirements under Part 61 of CASR (subsection 3.02 (1))
- if operating under the IFR, the pilot must not use NVIS unless the aircraft is flown in accordance with a requirement of the VMC criteria for the aircraft and the airspace in which the flight is conducted (subsection 3.02 (2))
- the pilot may only use NVIS in an aircraft certified to operate under the VFR by night or the IFR and using NVIS (subsection 3.02 (3))
- the pilot may only use NVIS if the NVG and NVD equipment complies with all applicable requirements (subsection 3.02 (4))
- the pilot must not use NVIS unless the minimum crew is on board the aircraft, and each crew member meets the authorisation and recency requirements of Part 61 of CASR (subsection 3.02 (5)).

CHAPTER 4 ALL FLIGHTS — AIRSPEED LIMITS

Section 4.01 provides that the purpose of this Chapter is to prescribe the airspeed limits for a flight.

Section 4.02 requires the pilot in command of an aircraft, if the aircraft is flown in the airspace and under the corresponding flight rules mentioned in Table 4.02 (1), to ensure the aircraft is flown at not more than the maximum indicated airspeed limits (if any), unless the requirements of aviation safety require otherwise. Table 4.02 (1) sets out the maximum indicated airspeed for certain classes of airspace when operating under specified flight rules.

CHAPTER 5 JOURNEY LOGS — FLIGHTS THAT BEGIN OR END OUTSIDE AUSTRALIAN TERRITORY

Section 5.01 provides that the purpose of this Chapter is to prescribe the requirements relating to maintaining a journey log for a flight of an aircraft that begins or ends at an aerodrome outside Australian territory (an ***international flight***).

Section 5.02 provides the information that must be recorded in the journey log before the international flight begins, including:

- the aircraft registration mark and flight number (if any) (paragraph 5.02 (2) (a))
- the date and departure location of the flight (paragraphs 5.02 (2) (b) and (d))
- the name of each crew member and their assigned duties (paragraph 5.02 (2) (c))
- the amount of fuel added to the aircraft's fuel tanks before the flight begins (if any), and the amount of fuel in the fuel tanks when the flight begins (paragraphs 5.02 (2) (e) and (f))

Section 5.03 provides the information that must be recorded in the journey log as soon as practicable after the international flight ends, including:

- the place of arrival (paragraph 5.03 (2) (a))
- the times the flight began and ended, and the duration of the flight (paragraphs 5.03 (2) (b)-(d))
- the amount of fuel in the aircraft's fuel tanks when the flight begins and ends (paragraphs 5.03 (2) (e) and (f))
- incidents and observations (if any) that may have been relevant in any way to the safety of the flight (paragraph 5.03 (2) (g)).

CHAPTER 6 FLYING IN FORMATION

Section 6.01 provides that the purpose of this Chapter is to prescribe the requirements for the pilot in command of an aircraft to fly in formation without being in contravention of subregulation 91.205 (1) of CASR (which makes it an offence to fly in formation without certain prearrangements).

Section 6.02 provides that for section 6.01 the aircraft must be a glider that is engaged in a soaring flight with 1 or more gliders in a thermal.

CHAPTER 7 FLIGHT PREPARATION (WEATHER ASSESSMENTS) REQUIREMENTS

Section 7.01 provides that the purpose of this Chapter is to prescribe requirements relating to flight preparation and weather assessment.

Section 7.02 prescribes the requirements for authorised weather forecasts and weather reports for a flight.

Subsection 7.02 (1) requires the pilot in command to study authorised weather forecasts and authorised weather reports for the route to be flown, the departure aerodrome, the planned destination aerodrome and any planned alternate aerodrome, and any other reasonably available weather information that is relevant to the operation.

Subsections 7.02 (2) and (3) sets out the authorised weather forecasts, and requires an authorised weather forecast must cover the whole period of the flight for which it is to be used.

Subsection 7.02 (4) sets out the authorised weather forecasts for an IFR flight to a planned destination aerodrome with an instrument approach procedure (***IAP***) that the pilot can conduct.

Subsection 7.02 (5) sets out the authorised weather forecasts for an IFR flight to a planned destination aerodrome without an IAP, or with an IAP that the pilot cannot conduct.

Subsection 7.02 (6) requires an authorised weather forecast studied by the pilot in command to be valid for at least 30 minutes before, and 60 minutes after, the planned estimated time of arrival.

Section 7.03 provides for circumstances in which an aircraft may commence a flight if an authorised weather forecast is not available before departure, and requires the pilot in command of the flight to return to the departure aerodrome if the authorised weather forecast required for the planned destination aerodrome is not obtained within 30 minutes after take-off.

CHAPTER 8 FLIGHT PREPARATION (ALTERNATE AERODROMES) REQUIREMENTS

Division 8.1 Purpose and definitions

Section 8.01 provides that the purpose of this Chapter is to prescribe requirements relating to flight preparation and alternate aerodromes.

Section 8.02 provides the definition of ***relevant weather conditions*** used in this Chapter.

Section 8.03 provides the definition of ***relevant IAP*** used in this Chapter ("the second lowest minimum altitude of the IAPs that an aircraft is able to conduct at an aerodrome") and sets out constraints on how a pilot in command may determine what is "the second lowest minimum altitude".

Division 8.2 Destination alternate aerodromes

Section 8.04 provides the circumstances in which the pilot in command of an aircraft must nominate a destination alternate aerodrome.

Section 8.05 provides the navigation requirements for the nomination of a destination alternate aerodrome for a flight.

Section 8.06 sets out the circumstances in which the pilot in command of a flight must nominate a destination alternate aerodrome, depending on the aerodrome lighting at the destination aerodrome.

Section 8.07 provides for suitability requirements of an aerodrome that may be nominated as a destination alternate aerodrome..

Subsection 8.08 (1) provides the alternate altitude and visibility minima at Australian aerodromes for specified types of aircraft and operations. Table 8.08 (1) sets out the alternate minima for specified types of aircraft and types of operations, and any additional conditions.

Subsection 8.08 (2) sets out that special alternate minima are only available for operations by aircraft with certain systems and capabilities.

Subsection 8.08 (3) sets out the circumstances in which special alternate minima must not be used.

Section 8.09 provides the alternate minima for an aerodrome outside Australian territory.

CHAPTER 9 FLIGHT NOTIFICATIONS

Section 9.01 provides that the purpose of this Chapter is to prescribe requirements relating to flight notifications.

Section 9.02 provides the flight notification requirements for specified types of flights.

Section 9.03 provides the requirements for changes to flight plans and SARTIME notifications, including when changes must be notified.

Section 9.04 specifies when a pilot in command must cancel the nominated SARTIME.

Subsection 9.05 provides the requirements for a person to be the responsible person for the receipt of a flight note.

CHAPTER 10 MATTERS TO BE CHECKED BEFORE TAKE-OFF

Section 10.01 provides that the purpose of this Chapter is to prescribe the checks to be carried out before take-off.

Section 10.02 lists a range of matters the pilot in command must check before take-off for flight.

Section 10.03 sets out the requirements for checking aircraft systems for measuring and displaying pressure altitude, and outlines what must occur if a pressure altitude system must be considered inoperative for flight.

Section 10.04 sets out the circumstances in which the pilot in command of an IFR flight must consider any pressure altitude system to be inoperative.

Section 10.05 provides the circumstances in which a pressure altitude with an accurate QNH is operative for a VFR flight, and the circumstances in which the pilot in command must consider a pressure altitude system inoperative for VFR flights.

Section 10.06 provides when a QNH is considered accurate. This section also stipulates that QNH contained in an authorised weather forecast must not be used for checking the accuracy of a pressure altitude system, and outlines the authorised methods to derive aerodrome site elevation.

CHAPTER 11 AIR TRAFFIC SERVICES — PRESCRIBED REQUIREMENTS

Division 11.1 Use of a class of airspace

Section 11.01 provides that the purpose of this Division is to prescribe the requirements relating to the use by an aircraft of a class of airspace. This section also provides the definition of ***oceanic airspace*** for the Division.

Section 11.02 provides the transition altitude, transition layer and transition level requirements for a flight using any class of airspace that is within an Australian FIR.

Section 11.03 provides requirements for the availability for GNSS FDE for a flight in any class of airspace that is oceanic airspace and sets out the circumstances in which the pilot in command of an aircraft must plan so that the maximum predicted duration of the loss of GNSS FDE availability does not exceed specified durations.

Section 11.04 sets out the occurrences in which the pilot in command of an aircraft that is conducting a flight in any class of airspace within an Australian FIR, and that is either required to maintain regular contact with an ATS or is being provided with a separation service by an ATS, must advise ATS if a loss of GNSS integrity occurs.

Section 11.05 provides requirements for the supply of distance information for a flight using any class of airspace within an Australian FIR.

Section 11.06 sets out what the pilot in command of an aircraft in any class of airspace must do in the event of an ACAS (airborne collision avoidance system) resolution advisory.

Section 11.07 provides the requirements that the pilot in command of an aircraft conducting a flight in a class of airspace that is RVSM airspace must adhere to.

Section 11.08 provides that the pilot in command of an Australian aircraft must not operate in the North Atlantic High-Level Airspace unless the operator holds an approval for the operation under regulation 91.045 of CASR.

Section 11.09 is reserved for future use.

Section 11.10 provides the requirements that the pilot in command of a flight in any class of airspace that is within an Australian FIR and is not specified in the AIP as an oceanic control area must adhere to if the radiocommunication system becomes inoperative during a flight.

Division 11.2 Use of controlled aerodromes, control areas and control zones

Section 11.11 provides that this Division prescribes requirements in relation to the use by an aircraft of a controlled aerodrome, a control area or a control zone.

Section 11.12 sets out the requirements for the readback of ATC clearances and instructions that the pilot in command of an aircraft must adhere to, in relation to the use by the aircraft of a controlled aerodrome, a control area or a control zone.

Section 11.13 provides that aircraft operations at a controlled aerodrome must be conducted in accordance with the authorised aeronautical information and sets out the manoeuvres the pilot in command of an aircraft operating at a controlled aerodrome must obtain ATC clearance to do.

Section 11.14 sets out that the pilot in command of an aircraft must not enter a control zone or a control area that is Class A, B, C or E airspace without ATC clearance. The exception to this requirement is VFR flights entering Class E airspace, or when an ATC service is not in operation for a control zone.

Section 11.15 sets out that before entering Class D airspace, the pilot in command of an aircraft must establish 2-way radio communication with the relevant ATC tower. This does not apply when an ATC service is not in operation for a control zone.

Section 11.16 provides that aircraft operations within a control zone or a control area must be in accordance with the authorised aeronautical information. It also provides for the positive action the pilot in command of the aircraft must take to regain track as soon as a deviation from the cleared track is recognised and the circumstances in which the pilot in command must notify ATC of any deviation from track.

Section 11.17 requires the pilot in command of an IFR flight to obtain clearance for a VFR climb or descent in a control area, or for VFR-on-top operations. This section also sets out the requirements that the pilot in command must adhere to for such operations.

Section 11.18 provides the requirements that the pilot in command of a flight that is within Australian-administered airspace specified in the AIP as an oceanic control area must adhere to if the radiocommunication system becomes inoperative during a flight.

Division 11.3 Prohibited, restricted and danger areas

Section 11.19 provides that this Division prescribes requirements in relation to the use by an aircraft of a prohibited area, a restricted area or a danger area.

Sections 11.20 and 11.21 provides Notes which direct readers to see CASA's OAR 6-monthly *Designation of Prohibited, Restricted and Danger Areas – Declaration and Determination (Permanent PRDs) Instruments* and the relevant Designated Airspace Handbooks, for prohibited and restricted areas.

Section 11.22 provides the requirements for a pilot in command of an aircraft when flying within or across a danger area.

CHAPTER 12 MINIMUM HEIGHT RULES

Section 12.01 provides the take-off and landing circumstances and requirements for flight over a populous area or a public gathering.

Section 12.02 provides the take-off and landing circumstances and requirements for flight over an area other than a populous area or a public gathering.

Section 12.03 is reserved for future use.

CHAPTER 13 VFR FLIGHTS

Section 13.01 provides that this Chapter prescribes the requirements relating to the operation of an aircraft for a VFR flight.

Subsection 13.02 (1) sets out the requirement that, when navigating by visual reference to the ground or water, the pilot in command must positively fix the aircraft's position by visual reference to features marked on topographical charts.

Subsection 13.02 (2) sets out what may be visual reference features for use when navigating by visual reference over the sea.

Subsection 13.02 (3) requires the pilot in command, when not navigating by visual reference to the ground or water, to comply with the requirements in Chapter 14 of the MOS, as if the flight were an IFR flight.

Subsection 13.02 (4) provides that the pilot in command of an aircraft may operate in an airspace or on a route designated as requiring use of a particular navigation specification, or conduct a terminal instrument flight procedure designated as requiring use of a particular navigation specification, only if the aircraft is appropriately approved for operation under the particular navigation specification.

Subsection 13.02 (5) provides that certain operations or procedures must be conducted using an approved GNSS.

CHAPTER 14 IFR FLIGHTS

Section 14.01 provides that this Chapter prescribes the requirements relating to the operation of an aircraft for an IFR flight. This section also defines, for this Chapter, when an aircraft is approved for operation under a navigation specification.

Section 14.02 provides a number of requirements for IFR flight navigation that the pilot in command of an aircraft must adhere to.

Subsection 14.02 (1) sets out the alternate methods by which the pilot in command must navigate the aircraft using of an area navigation system, a ground-based navigation aid, or visual reference to the ground or water, and the requirements for each method.

Subsection 14.02 (2) provides that the pilot in command of an aircraft may operate in an airspace or on a route designated as requiring use of a particular navigation specification, or conduct a terminal instrument flight procedure designated as requiring use of a particular navigation specification, only if the aircraft is appropriately approved for operation under the particular navigation specification.

Subsection 14.02 (3) provides that certain operations or procedures must be conducted using an approved GNSS.

Subsection 14.02 (4) sets out what the pilot in command must do if the navigation system being used becomes inaccurate, unreliable or inoperative.

Subsection 14.02 (5) sets out the checking and crosschecking requirements the pilot in command of an operation must complete to ensure that data entered into an area navigation system is accurate.

Subsection 14.02 (6) sets out when the pilot in command of an aircraft must ensure that position and tracking information is checked.

Subsection 14.02 (7) sets out matters the pilot in command of an aircraft must ensure are adhered to for an operation using a terminal instrument flight procedure in which GNSS will be used as the sole means of navigation.

Section 14.03 provides requirements relating to QNH sources for instrument approaches that the pilot in command must adhere to.

Section 14.04 provides requirements the pilot in command must adhere to during a GNSS arrival, or a DME or GNSS arrival.

Section 14.05 sets out the circumstances in which GNSS may be used as a substitute or alternative to a ground-based navigation aid for specified procedures or phases of flight, and requirements for the use of GNSS in such circumstances.

Section 14.06 sets out requirements relating to the availability of GNSS integrity for an instrument approach procedure, including when certain LNAV accuracy is achieved.

Section 14.07 sets out the requirements for a navigation database.

Subsections 14.07 (1) and (2) provide definitions of ***current*** and ***valid*** for the section and requires the data in the navigation database to be valid, current and in a form that cannot be changed by the operator or a flight crew member.

Subsections 14.07 (3) – (5) sets out the requirements for updating the navigation database and obliges the aircraft operator to ensure the navigation database is updated by an appropriately qualified and competent person, the database is regularly checked for integrity and any discrepancy is reported and dealt with appropriately.

Subsection 14.07 (6) requires the pilot in command, if the navigation database changes to the next AIRAC cycle during a flight, to complete the flight using the unchanged database unless to do so will jeopardise the safety of the flight.

Subsection 14.07 (7) sets out the circumstances in which a navigation database that is not current at the start of a flight or that ceases to be current during a flight may be used for navigation.

Subsection 14.07 (8) sets out that an aircraft operated without an MEL must not operate under PBN for more than 72 hours after the navigation database has ceased to be current.

Section 14.08 provides for the requirements that the pilot in command must meet in order to carry out a PRM (precision runway monitoring) instrument approach operation.

CHAPTER 15 IFR TAKE-OFF AND LANDING MINIMA

Section 15.01 provides the purpose of this Chapter is to prescribe the requirements for take-off and landing minima for an aerodrome.

Section 15.02 provides the definitions for this Chapter.

Section 15.03 provides the minima requirements, at the time of take-off, that must be met before a pilot in command can commence a take-off.

Section 15.04 provides the requirements for take-off minima for low visibility operations.

Section 15.05 provides the requirements for the take-off minima for qualifying multi-engine aeroplanes when it is not a low visibility take-off.

Section 15.06 provides the requirements for the take-off minima for all other aeroplanes, other than qualifying multi-engine aeroplanes, when it is not a low visibility take-off.

Section 15.07 provides the requirements for the take-off minima for a qualifying multi-engine rotorcraft when it is not a low visibility take-off.

Section 15.08 provides the requirements for the take-off minima for all other rotorcraft, when it is not a low visibility take-off.

Section 15.09 sets out that landing minima obtained from an instrument approach chart must be selected in accordance with the specified aircraft performance category and aircraft LNAV and VNAV capabilities.

Section 15.10 provides the requirements for the minimum altitude and visibility landing minima for an RNP APCH-LNAV/VNAV, an RNP APCH-LPV, or a precision approach procedure. This section also sets out the minimum altitude and visibility landing minima if an aircraft is conducting a circling manoeuvre.

Section 15.11 sets out the circumstances in which, during an instrument approach operation, the pilot in command of an aircraft must execute the missed approach procedure for the IAP.

CHAPTER 16 APPROACH BAN FOR IFR FLIGHTS

Section 16.01 provides the purpose of this Chapter is to prescribe the circumstances in which an aircraft flown under the IFR must not make an approach to land at an aerodrome that has an air traffic service in operation, and for which RVR reports are available for IAPs to the relevant runway.

Section 16.02 sets out the circumstances in which an operation that is not a low visibility operation must not descend below 1 000 ft if the TDZ RVR is reported by ATC as continually less than the landing minima for the instrument approach operation.

Section 16.03 sets out the circumstances in which an operation that is a low visibility operation must not approach the aerodrome to land.

CHAPTER 17 DESIGNATED NON-CONTROLLED AERODROMES

This Chapter is reserved for future use.

CHAPTER 18 SAFETY WHEN AEROPLANE OPERATING ON THE GROUND

This Chapter is reserved for future use.

CHAPTER 19 FUEL REQUIREMENTS

Section 19.01 provides that the purpose of this Chapter is to prescribe the requirements relating to fuel for aircraft.

Section 19.02 provides that the final reserve fuel and contingency fuel that must be carried on board an aircraft for a flight must conform to the requirements set out in Table 19.02 (2).Table 19.02 (2) sets out for each aircraft and the kind of flight the requirements for the final reserve fuel flight time and the contingency fuel amount that must be carried on board an aircraft.

Section 19.03 sets out the considerations the pilot in command must take into account when determining the amount of usable fuel required under this Chapter for a flight of an aircraft, including:

- fuel consumption data (subsection 19.03 (1))
- operational requirements etc. (subsection 19.03 (2)).

Section 19.04 sets out the amount of fuel that must be carried for a flight, and obliges the pilot in command of an aircraft to ensure that the aircraft is carrying on board at least the specified amounts of usable fuel:

- when a flight of the aircraft commences (subsection 19.04 (1))
- at any point of in-flight replanning (subsection 19.04 (2))
- at any time to continue the flight safely (subsection 19.04 (3)).

Subsection 19.04 (4) also requires the pilot in command to re-analyse the planned use of fuel for the remainder of the flight and adjust the parameters of the flight if necessary, if after commencement of the flight fuel is used for a purpose other than that originally intended during pre-flight planning.

Section 19.05 requires the pilot in command of an aircraft for a flight ensure that the quantity of usable fuel on board the aircraft is determined before the flight commences and that fuel quantity checks are carried out at regular intervals throughout a flight.

Section 19.06 sets out the procedures the pilot in command must follow if the amount of usable fuel onboard an aircraft will be, or is likely to be, less than the fuel required to continue the flight safely,

Section 19.07 (1) provides for certain operators (Part 141 and Part 142 operators, aerial application operators and aerial work operators) to use an operational variation for the calculation of certain fuel, so long as certain conditions are satisfied.

Subsections 19.07 (2) - (4) provide that the operators may use an operational variation, specified in the operator’s operations manual or exposition, that relates to the calculation of certain fuel to be carried onboard an aircraft so long as certain requirements are met.

Subsections 19.07 (5) and (6) provide the matters that a relevant operator must submit to CASA before using an operational variation. The purpose of this is to ensure the operational variation will maintain or improve aviation safety and ensure a specific safety risk assessment has been adequately conducted.

Subsection 19.07 (7) requires the operator’s operations manual or exposition (as applicable) to include procedures in relation to the use of the operational variation.

CHAPTER 20 SAFETY OF PERSONS AND CARGO ON AIRCRAFT

Division 20.1 Seating for persons on aircraft

Section 20.01 provides for circumstances where an offence, that would otherwise arise for non-fitment of seatbelts or shoulder harnesses, is avoided. The prescribed circumstances are that the flight must be a medical transport operation using alternative prescribed means of passenger restraint.

Division 20.2 Restraint of infants and children

Section 20.02 provides that this Division prescribes the requirements for the restraining an infant or a child when a direction is given to passengers to fasten seatbelts or shoulder harnesses.

Section 20.03 sets out the circumstances in which an infant or a child may be considered to be safely restrained.

Section 20.04 sets out the requirements for child restraint systems that are not seatbelts but nevertheless are safe forms of restraint.

Division 20.3 Safety briefings and instructions

Section 20.05 provides that the purpose of this Division is to prescribe the requirements for a passenger safety briefing and instructions before an aircraft takes off for a flight.

Section 20.06 provides the requirements for the content of passenger safety briefings and instructions.

Division 20.4 Carriage of animals

Section 20.07 is reserved for future use.

CHAPTER 21 RADIO FREQUENCY, BROADCAST AND REPORTING REQUIREMENTS

Division 21.1 Use of certain frequencies — radio qualifications required

Section 21.01 is reserved for future use.

Division 21.2 Use of radio — broadcasts and reports

Section 21.02 provides that the purpose of this Division is to prescribe the requirements for broadcasts and reports relating to a flight that the pilot in command of an aircraft must make during the flight of an aircraft that is fitted with or carries a radio.

Section 21.03 provides that the broadcasts and reports required must be made on the relevant published radio frequency, unless ATS agrees to the use of a different frequency for special flight circumstances.

Sections 21.04 – 21.08 and their associated Tables stipulate the situations in which the pilot in command of an aircraft must broadcast prescribed reports, including:

- broadcasts on the CTAF from aircraft at, or in the vicinity or, a non-controlled aerodrome (section 21.04 and Table 21.04 (1))
- reports on the ATS from aircraft in Class A, B, C or D airspace, or an IFR flight in Class E airspace (section 21.05 and Table 21.05 (1))
- reports on the ATS from IFR aircraft in Class G airspace (section 21.06 and Table 21.06 (1))
- reports on the ATS from VFR aircraft in Class E or G airspace (section 21.07 and Table 21.07 (1))

  reports of all FL deviations of 300 ft or more from the aircraft's assigned level for an aircraft conducting a flight in RVSM airspace within the Australian FIR must be made in accordance with procedures published in the authorised aeronautical information (section 21.08).

CHAPTER 22 PERFORMANCE BASED NAVIGATION (PBN)

Section 22.01 prescribes the two navigation specifications, RNP AR APCH and RNP AR DP, that may be used with CASA approval.

CHAPTER 23 INTERCEPTION OF AIRCRAFT

Section 23.01 provides that this Chapter prescribes requirements that must be met if an aircraft is intercepted by another aircraft during a flight.

Section 23.02 sets out the requirements, namely that the pilot in command of the aircraft must comply with the applicable procedures for an intercepted aircraft as set out in certain Appendices of ICAO Annex 2.

CHAPTER 24 TAKE-OFF PERFORMANCE

Section 24.01 provides that this Chapter prescribes the requirements relating to the take-off performance for a flight of an aircraft.

Section 24.02 requires the pilot in command of an aeroplane during and after take-off to ensure that, until the aeroplane reaches the required minimum height for the flight, the aeroplane has the necessary performance to clear all obstacles by a safe margin. This section also outlines how the performance of the aeroplane must be determined, and the factors that the pilot in command must take into account in determining performance.

Section 24.03 requires the pilot in command of a rotorcraft during and after take-off to ensure that, until the rotorcraft reaches the required minimum height for the flight, the rotorcraft has the necessary performance to clear all obstacles by a safe margin. This section also outlines how the performance of the rotorcraft must be determined, and the factors that the pilot in command must take into account in determining performance.

Section 24.04 sets out the performance requirements that must be satisfied for a Category A rotorcraft to take-off in a populous area that is a non-certified aerodrome or an aerodrome that is not used for the regular take-off or landing of aeroplanes.

Section 24.05 sets out the performance requirements that must be satisfied for a Category B rotorcraft to take-off in a populous area that is a non-certified aerodrome or an aerodrome that is not used for the regular take-off or landing of aeroplanes.

CHAPTER 25 LANDING PERFORMANCE

Section 25.01 provides that this Chapter prescribes the requirements relating to the landing performance for a flight of an aircraft.

Section 25.02 requires the pilot in command of an aeroplane during approach and landing to ensure that, from the time the aeroplane descends below the minimum height for the flight, the aeroplane has the necessary performance to clear all obstacles by a safe margin. This section also outlines how the performance of the aeroplane must be determined, and the factors that the pilot in command must take into account in determining performance.

Section 25.03 requires the pilot in command of a rotorcraft during approach and landing to ensure that, from the time the rotorcraft descends below the minimum height for the flight, the rotorcraft has the necessary performance to clear all obstacles by a safe margin. This section also outlines how the performance of the rotorcraft plane must be determined, and the factors that the pilot in command must take into account in determining performance.

Section 25.04 sets out the requirements that must be satisfied for a Category A rotorcraft to land in a populous area that is a non-certified aerodrome or an aerodrome that is not used for the regular take-off or landing of aeroplanes.

Section 25.05 sets out the requirements that must be satisfied for a Category B rotorcraft to land in a populous area that is a non-certified aerodrome or an aerodrome that is not used for the regular take-off or landing of aeroplanes.

CHAPTER 26 EQUIPMENT

Division 26.1 General

Section 26.01 provides that the purpose of this Chapter is to prescribe the requirements relating to the fitment and non-fitment of equipment to an aircraft, the carrying of equipment on an aircraft and equipment that is fitted to, or carried on, an aircraft. This Chapter is lengthy and contains highly detailed technical requirements relating to equipment, including Tables and Figures. Section 26.01 also includes some definitional provisions, in particular that, for any reference to the fitment or carriage of equipment, the equipment referred to must be operative unless a contrary intention appears.

Division 26.2 Approvals, visibility and inoperative equipment

Division 26.2 prescribes requirements relating to:

- the circumstances in which aircraft equipment carried or fitted on an aircraft must be compliant, or not compliant, with Part 21 of CASR or, for foreign registered aircraft, the NAA equivalent (section 26.02)
- the visibility and accessibility of pilot-operated equipment and emergency equipment (section 26.03)
- the circumstances in which an aircraft may begin a flight with equipment that is inoperative, despite a requirement under this Chapter that equipment must be fitted to, or carried on, the aircraft for the flight.

Division 26.3 Flight instruments - aeroplanes

Division 26.3 only applies to an aeroplane (section 26.05). This Division sets out the equipment that an aeroplane must be fitted with, and the technical requirements for such equipment, for the following types of operations:

- aeroplane VFR flight by day (section 26.06)
- aeroplane VFR flight by night (section 26.07)
- aeroplane IFR flight (section 26.08).

Division 26.4 Rotorcraft-specific requirements

Division 26.4 only applies to a rotorcraft (section 26.09). This Division sets out the equipment that a rotorcraft must be fitted with, and the technical requirements for such equipment, for the following types of operations:

- rotorcraft VFR flight by day (section 26.10)
- rotorcraft VFR flight by night (section 26.11)
- rotorcraft IFR flight (section 26.12).

Division 26.5 Experimental and light sport aircraft and Australian registered aircraft

Division 26.5 sets out a number of exclusions or "carve-outs", in which specified equipment requirements set out in Divisions 26.2 – 26.4 do not apply to certain experimental and light sport aircraft if the aircraft is fitted with equipment which provides the pilot with equivalent information. Specifically:

- aeroplane VFR flight requirements set out in sections 26.06 and 26.07 do not apply to certain light sport aircraft (section 26.13)
- aeroplane VFR and IFR flight requirements set out in sections 26.06 - 26.08 (except for subsection 26.08 (1)) do not apply to certain experimental aeroplanes (section 26.14)
- rotorcraft VFR and IFR flight requirements set out in sections 26.10 - 26.12 (except for subsections 26.11 (2) and 26.12 (1) and (2)) do not apply to certain experimental rotorcraft (section 26.15)
- VFR and IFR flight requirements set out in Divisions 26.3 or 26.4 do not apply to certain Australian-registered aircraft that are not an experimental or light sport aircraft. (section 26.16).

Section 26.17 requires an aircraft to which section 26.13, 26.14 or 26.15 applies, and that is fitted with certain electronic system(s), to have a back-up source of power for the system(s). This section also provides requirements for such back-up power sources thereby improving the level of aviation safety in the absence of the equipment requirements otherwise applicable.

Division 26.6 Operational equipment

Section 26.18 sets out the circumstances in which an aircraft for a flight must be fitted with radiocommunication systems, and the capabilities of such systems.

Section 26.19 sets out the circumstances in which an aircraft, for which a radiocommunication system is required, may begin a flight with an inoperative radiocommunication system.

Section 26.20 requires an aeroplane conducting an IFR fight above FL 490 to be fitted with equipment to measure and display the total cosmic radiation received in the aeroplane's cabin. This section also provides the requirements for such equipment.

Division 26.7 Lighting systems

Division 26.7 sets out detailed requirements for the lighting systems required to be fitted or carried on an aircraft, including what each lighting system must be used for and when the lighting equipment must be displayed. Specifically, this Division sets out the requirements for:

- cockpit and cabin lighting for an aircraft (section 26.21)
- anti-collision lights for an aircraft operating by day or night (section 26.22)
- landing lights for an aircraft operating by night (section 26.23)
- navigation lights for an aircraft operating by night or in poor visibility (section 26.24).

Division 26.8 Alerting and warning system requirements

Section 26.25 provides the circumstances in which aircraft must be fitted with altitude alerting equipment for IFR flight, and the specific alerts that the altitude alerting equipment must convey to the flight crew members.

Section 26.26 provides the circumstances in which the altitude alerting equipment is permitted to be inoperative at the beginning of an IFR flight.

Sections 26.27 to 26.29 are reserved for future use.

Division 26.9 Flight recording equipment

Division 26.9 sets out the circumstances in which flight recording equipment must be fitted to an aircraft. For this Division, flight recording equipment comprises a flight data recorder (***FDR***), or a cockpit voice recorder (***CVR***), or a combination recorder which combines the capabilities and functions of an FDR and CVR (section 26.30).

Sections 26.31 and 26.33 sets out the circumstances in which an FDR must be fitted to an aeroplane and rotorcraft, respectively.

Sections 26.32 and 26.34 sets out the circumstances in which an CVR must be fitted to an aeroplane and rotorcraft, respectively.

Section 26.35 sets out the circumstances in which the requirements in sections 26.30 – 26.34, if requiring an aircraft to be fitted with both 1 FDR and 1 CVR, may be met by the fitment of alternative combinations of equipment.

Section 26.36 sets out the technical requirements that an FDR, CVR or a combination recorder must comply with, including the requirements for the duration and occasions of data retention.

Section 26.37 sets out the requirements for when an FDR, CVR or combination recorder must begin and cease recording.

Section 26.38 sets out the circumstances in which an FDR, CVR or combination recorder fitted to an aircraft under Division 26.9 may be inoperative at the beginning of a flight.

Section 26.39 is reserved for future use.

Division 26.10 Aircraft interior communications systems

Section 26.40 sets out the circumstances in which an aircraft is required to have a flight crew intercommunications system for flight under the VFR, and the requirements for such a system.

Section 26.41 sets out the circumstances in which an aircraft is required to have a flight crew intercommunications system for flight under the IFR, and the requirements for such a system.

Section 26.42 sets out the circumstances in which an aircraft is required to have a public address system when it begins a flight, and the requirements for such a system.

Division 26.11 Oxygen equipment and oxygen supplies

Division 26.11 sets out detailed requirements for the oxygen equipment and oxygen supplies required to be fitted or carried on an aircraft, including specific requirements relating to the use of each type of equipment. Specifically, this Division sets out the requirements for:

- supplemental oxygen for an aircraft operated at a pressure altitude above 10 000 ft (section 26.43)
- oxygen mask usage for a pressurised aircraft that is flown above FL 250 at any time during the flight (section 26.44)

- protective breathing equipment for flight crew members (section 26.45)
- portable protective breathing equipment for flight crew members (section 26.46)
- first aid oxygen equipment — up to immediately before 2 December 2023, with revised requirements after that date (section 26.47).

Division 26.12 Emergency locator transmitters

Section 26.48 provides the requirements for when an aircraft is required to carry an emergency locator transmitter (***ELT***), whether an automatic ELT or a survival ELT and whether or not the aircraft is one that is required to carry life rafts.

Section 26.49 provides basic technical requirements for what constitutes an ELT for this Division.

Section 26.50 provides the definition of ***automatic ELT*** for this Division, and sets out the technical requirements that an automatic ELT must meet.

Section 26.51 provides the definition of ***survival ELT*** for this Division, and sets out the technical requirements that a survival ELT must meet.

Section 26.52 sets out the circumstances in which an aircraft may begin a flight with an inoperative automatic ELT or an inoperative survival ELT, and the requirements to be met.

Division 26.13 Portable emergency equipment

Division 26.13 sets out the requirements for the carriage of portable emergency equipment, namely hand-held fire extinguishers.

Section 26.53 provides the circumstances in which an aeroplane with a MTOW above 5 700 kg must carry hand-held fire extinguishers, the number of extinguishers to be carried, and where the extinguishers must be located.

Section 26.54 provides the circumstances in which a rotorcraft certified in the transport category must carry hand-held fire extinguishers, the number of extinguishers to be carried, and where the extinguishers must be located.

Division 26.14 Equipment for flights overwater

Division 26.14 sets out the equipment requirements for flights over water, including requirements for when:

- a sea anchor or other equipment for mooring must be carried on an aircraft, and equipment for making the sound signals under the International Regulations must be caried (section 26.55)
- life jackets must be carried onboard an aircraft (section 26.56), and the stowage requirements for each life jacket (section 26.57)
- a person on board certain aircraft must wear a life jacket (sections 26.58 and 26.59)
- life rafts must be carried on an aircraft (26.60), and the stowage requirements for life rafts required to be carried on an aircraft (section 26.61)
- survival equipment and signalling equipment must be carried (26.62).

Division 26.15 Remote areas

Section 26.63 provides definitions of remote areas for this Division.

Section 26.64 sets out the survival equipment that must be carried for a flight in or through a remote area as defined.

Section 26.65 provides the meaning of remote area in relation to Central Australia, the Snowy Mountains and Tasmania and includes figures illustrating each of these remote areas.

Section 26.66 is reserved for future use.

Division 26.16 Transponders and surveillance equipment

Division 26.16 sets out the circumstances in which transponders and surveillance equipment must be carried on an aircraft for a flight, and contains detailed technical requirements that must be met by the equipment.

Section 26.67 provides the definitions for a range of technical equipment relevant to the Division.

Section 26.68 sets out the circumstances in which an aircraft conducting specified operations in corresponding classes of airspace must be fitted with transponders and surveillance equipment. This section also sets out the technical requirements that such equipment must meet.

Section 26.69 sets out the general requirements for the operation of a transponder, and includes a Table of Mode A standard codes for nominated flight situations.

Section 26.70 sets out the specific requirements for an approved Mode S transponder or an approved ADS-B OUT equipment configuration fitted to an aircraft (involving relevant data entry) related, including technical requirements for such transponders and how the transponder must transmit.

Section 26.71 sets out the requirements, for certain aircraft, as to what would constitute an alternate GNSS position source in place of ADS-B Out, including certification and specification requirements.

Section 26.72 provides the requirements for an alternate ADS-B OUT equipment configuration, including certification and specification requirements.

Section 26.73 sets out the circumstances in which an approved transponder may be inoperative at the beginning of a flight.

CHAPTER 27 EXPERIMENTAL AND LIGHT SPORT AIRCRAFT PLACARDS

Section 27.01 prescribes the requirements for a placard that must be displayed inside an experimental aircraft carrying a passenger.

Section 27.02 prescribes the requirements for a placard that must be displayed inside a light sport aircraft.

CHAPTER 28 REQUIREMENTS FOR MINIMUM EQUIPMENT LISTS

Section 28.01 provides that this Chapter prescribes the requirements relating to a minimum equipment list (***MEL***) for an aircraft.

Section 28.02 provides the definitions for this Chapter.

Section 28.03 the prescribed the detailed contents that an MEL for an aircraft must include.

Section 28.04 requires that an MEL for an aircraft must be based on the master MEL (***MMEL***) for the aircraft type, and stipulates that for a flight with an inoperative item the MEL must not have any less restrictive a rectification interval, conditions or limitations than the MMEL in the same circumstances unless the regulations provide otherwise.

Section 28.05 provides that an MEL must not permit the operation of an aircraft for a flight with an inoperative item if the flight would be in contravention of the civil aviation legislation.

Section 28.06 provides that MEL for an aircraft must not permit the operation of the aircraft for a flight with an inoperative item in contravention of any of the conditions, limitations or emergency procedures specified in the AFM.

Section 28.07 provides that if the MMEL for an aircraft type does not specify a rectification interval for an inoperative item, the rectification interval for the item in an MEL for an aircraft of the type must clearly reflect the significance of the item for the safe operation of the aircraft.

Section 28.08 provides that if a repair or modification is made to an aircraft and the approval for the repair or modification places a new condition or limitation on the operation of the aircraft for flight with an inoperative item, the conditions or limitations specified in the MEL for the inoperative item must be at least as restrictive as the conditions or limitations specified in the approval for the repair or modification.

Section 28.09 sets out the periods by which an extendable original rectification period may be extended.