Explanatory Statement

Acts Interpretation Act 1901

Civil Aviation Safety Regulations 1998

Part 139 (Aerodromes) Manual of Standards 2019

Purpose
The *Part 139 (Aerodromes) Manual of Standards 2019* (the ***MOS***) sets out the standards for the construction, maintenance and operation of *certified* aerodromes, and the standards for radio communications facilities at *all* aerodromes.

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 the *Civil Aviation Safety Regulations 1998* (***CASR***) are made under the Act.

Under regulation 139.005 of CASR (originally contained in the *Civil Aviation Safety Amendment (Part 139) Regulations 2019*, made on 21 February 2019 and to commence on 22 August 2020), the Civil Aviation Safety Authority (***CASA***) may issue a Manual of Standards for Part 139 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 139. This power is complemented by other provisions, throughout Part 139, which empower CASA to prescribe specific matters in the MOS.

Section 4 of the *Acts Interpretation Act 1901* (the ***AIA***) 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 139.005 of CASR, a regulation that will not commence until 22 August 2020.

Background
Part 139 of CASR established a regulatory model that is designed to achieve the following:

- provide a simplified regulatory system for aerodromes, by replacing the existing 3 regulated aerodrome classifications (‘certified’, ‘registered’ and ‘certain other’) with a single regulated classification of ‘certified aerodrome’;
- focus on the safety risks associated with increasing numbers of air transport passenger movements or aircraft movements at an aerodrome, and provide for scalable regulatory requirements as aerodrome operations become more complex;
- require that, commensurate with increasing levels of risk, aerodrome operators introduce systems for safety management, perform aerodrome emergency planning, and develop risk management plans and wildlife hazard management plans;
- provide a more flexible path for CASA to approve aerodrome operators to adopt alternative means of compliance with regulatory requirements;
- provide an opportunity to modernise the regulatory framework and make compliance easier by recognising developments in technology and international standards since the original Part 139 Manual of Standards was first made in 2003;

- enhance alignment with the Convention on International Civil Aviation (the ***Chicago Convention***) and in particular Annex 14.

The MOS is issued to prescribe matters required, or permitted, by Part 139 of CASR, or matters that are necessary or convenient for carrying out or giving effect to Part 139 and thereby achieve the new regulatory model for aerodromes.

The standards in the MOS will apply to all new aerodrome facilities from 22 August 2020. The previous aerodrome standards, including for the obstacle limitation surfaces (***OLS***) associated with an existing runway, will continue to apply to existing aerodrome facilities, provided those standards are fully complied with, but only until the aerodrome replaces or upgrades the aerodrome facility (or fails to maintain it in accordance with the requirements of this MOS for the same kind of facility), at which point the standards in the MOS apply to the replaced or upgraded facility including, if the facility is a runway, its associated OLS.

However, for processes or systems that are not physical facilities, the standards in the MOS apply to the operators of all new and existing aerodromes from 22 August 2020.

The MOS

As might be expected for subject matter of such engineering and technical complexity as the construction and maintenance of a modern Australian aerodrome, the MOS is highly detailed. It prescribes, often with quantitative dimensional precision, safety standards for a very wide range of technical matters pertaining to the physical construction and maintenance of a certified aerodrome, and the safety of landings, take-offs and surface movements. Consequently, the MOS is a document exceeding 430 pages of technical engineering, design and related standards and illustrations.

More details on the MOS are set out in Attachment B. As far as possible in the context of the material to be addressed, the MOS has been drafted in as plain a style of English presentation as the nature of the material will allow, to ensure that the document is, and is usable as, a practical manual for aerodrome operators and relevant personnel involved in constructing, maintaining and operating a modern aerodrome.

As with any manual of aerodrome engineering and design, its details must be closely read and followed in the construction, maintenance and operation of the aerodrome and the aerodrome facilities. This Explanatory Statement provides a note on, or 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 *Legislation Act 2003* (the ***LA***) but it is not a repeat of the MOS or in any sense a reader's substitute for the MOS. It provides a general explanation of the purpose and operation of the MOS.

In support of the MOS, CASA will publish a suite of freely accessible guidance materials in the form of individual Advisory Circulars under the Part 139 series, 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, models, diagrams and case studies, it will clarify acceptable means of compliance. This material will, therefore, complement the explanations of the purpose and operation of the MOS given in this Explanatory Statement.

The following provides an overview of the structure and content of the Part 139 MOS:

- Chapter 1 provides the name, commencement, authority, and scope of the MOS. It also includes, collected in one place, a listing of the relevant CASR Part 139 empowerments for the MOS.
- Chapter 2 provides for the way the MOS is to apply to new aerodromes and existing aerodromes, with related definitions.

- Chapter 3 provides definitions for the MOS.
- Chapter 4 provides for the aerodrome reference codes which determine the standards an aerodrome facility must meet to be suitable for use by aeroplanes within a particular range of performance and size.
- Chapter 5 provides the information that must be reported to the Aeronautical Information Service (***AIS***) provider about the aerodrome and recorded in the aerodrome manual.
- Chapter 6 provides for the physical characteristics and standards of aerodrome movement facilities including the standards for runways, taxiways, holding bays, aprons, blast and wash facilities and glider facilities.
- Chapter 7 provides the requirements for monitoring, and responding to, obstacles at an aerodrome facility.
- Chapter 8 provides the requirements for visual aids at an aerodrome in the form of markings, markers, signals, signs and wind direction indicators.
- Chapter 9 provides the requirements for aerodrome visual aids in the form of lighting.
- Chapter 10 provides the requirement for an aerodrome to have an aerodrome manual.
- Chapter 11 provides for the information that must be included in the aerodrome manual.
- Chapter 12 provides for the inspection and reporting requirements in relation to an aerodrome's condition and compliance.
- Chapter 13 provides the functions for specific aerodrome personnel.
- Chapter 14 provides the requirements for the control of airside access and vehicle control.
- Chapter 15 provides the requirements for conducting aerodrome works.
- Chapter 16 provides the requirements for preparing, managing and maintaining "method of working plans" (MOWPs) for carrying out works at or on an aerodrome.
- Chapter 17 provides the requirements for managing wildlife hazards at an aerodrome.
- Chapter 18 provides the requirements for maintenance of surfaces and pavements at an aerodrome.
- Chapter 19 provides the requirements for communication, navigation, surveillance systems, and meteorological facilities, used at an aerodrome.
- Chapter 20 provides the requirements for ground earthing points in relation to electrical systems at an aerodrome.
- Chapter 21 provides the requirements for anchoring and tying-down aircraft so that they are securely held at an aerodrome.
- Chapter 22 provides the requirements for radio communication facilities at an aerodrome.
- Chapter 23 provides the requirements for aircraft take-off and landing in low-visibility operations at an aerodrome.
- Chapter 24 provides requirements for aerodrome emergencies, including the establishment of an emergency committee, planning and response.
- Chapter 25 provides the requirements for safety management systems for the overall management of safety at an aerodrome.
- Chapter 26 provides the requirements for establishing risk management plans for an aerodrome.

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 and is, therefore, 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 paragraph 15J (2) (c) of the LA and subsection 98 (5D) of the Act, the MOS applies, adopts or incorporates matters contained in the following international and domestic instruments:

- Annex 3 to the Chicago Convention;
- Annex 4 to the Chicago Convention;
- Annex 10 to the Chicago Convention;
- Annex 14 to the Chicago Convention;
- Federal Aviation Administration (***FAA***) Advisory Circular 150/5345-51, *Specification for Discharge-Type Flashing Light Equipment*;
- International Civil Aviation Organization (***ICAO***) Document 9137, *Airport Services Manual*;
- ICAO Document 9157, *Aerodrome Design Manual*;
- ICAO Document 8643, *Aircraft Type Designators*;
- Part 11 (regulations 11.245 and 11.250) of CASR;
- Part 175 of CASR, Aeronautical Information Management;
- Part 173 of CASR, Instrument Flight Procedure Design;
- Regulation 166E of CAR;
- Australian Standard (***AS***) 2700-2011, *Colour Standards for General Purposes*
- ISO/IEC 17011 (joint International Organization for Standardization/International Electrotechnical Commission requirements for the competence, consistent operation and impartiality of accreditation bodies assessing and accrediting conformity assessment bodies);
- the Aeronautical Information Publication (***AIP***).

Under subsection 98 (5D) of the Act, 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).

The following lists the instruments and documents incorporated by reference into the MOS, describes them, indicates how they are incorporated (invariably "as in force from time to time"), and identifies the organisation responsible for each document and how the document may be obtained.

Document	Description	Manner of incorporation	Source

Document	Description	Manner of incorporation	Source
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.	As the Annex is in force from time to time, in accordance with clause 15 of Part 2 of the CASR Dictionary.	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 4 to the Chicago Convention	Annex 4 defines the obligations of States to make available certain ICAO aeronautical chart types, and specifies chart coverage, format, identification and content including standardised symbology and colour use.	As the Annex is in force from time to time, in accordance with clause 15 of Part 2 of the CASR Dictionary.	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 contains the Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and guidance material on aeronautical communication, navigation, surveillance systems.	As the Annex is in force from time to time, in accordance with clause 15 of Part 2 of the CASR Dictionary.	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 14 to the Chicago Convention	Annex 14 deals with the physical characteristics, obstacle limitation surfaces and technical services provided at airports and heliports including aeronautical data, visual aids, electrical systems, aerodrome operational services, and aerodrome maintenance.	As the Annex is in force from time to time, in accordance with clause 15 of Part 2 of the CASR Dictionary.	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.
FAA Advisory Circular 150/5345-51, *Specification for Discharge-Type Flashing Light Equipment*	Defines the specification for discharge-type flashing light equipment used for lighted visual aids.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to the FAA. It is made available by the FAA free at: https://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5345-51

Document	Description	Manner of incorporation	Source
ICAO Document 9137, *Airport Services Manual*	International operational procedures recommended for the guidance of airport operational services.	A reference in the regulations to an Annex to the Chicago Convention is defined in clause 15 in Part 2 of the CASR Dictionary as being a reference to that Annex as in force from time to time. Analogously with the definition of Annex and the definition in Part 1 of the CASR Dictionary of other AIS-applicable ICAO documents as being, relevantly, those in force from time to time, a reference in the Regulations to ICAO Document 9137 is also taken to be a reference to the document as in force 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 9157, *Aerodrome Design Manual*	International operational procedures recommended for the guidance of aerodrome design.	A reference in the regulations to an Annex to the Chicago Convention is defined in clause 15 in Part 2 of the CASR Dictionary as being a reference to that Annex as in force from time to time. Analogously with the definition of Annex and the definition in Part 1 of the CASR Dictionary of other AIS-applicable ICAO documents as being, relevantly, those in force from time to time, a reference in the Regulations to ICAO Document 9157 is also taken to be a reference to the document as in force 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 8643, *Aircraft Type Designators*	International operational procedures recommended for the guidance of aircraft type designators.	A reference in the regulations to an Annex to the Chicago Convention is defined in clause 15 in Part 2 of the CASR Dictionary as being a reference to that Annex as in force from time to time. Analogously with the definition of Annex and the definition in Part 1 of the CASR Dictionary of other AIS-applicable ICAO documents as being, relevantly, those in force from time to time, a reference in the Regulations to ICAO Document 8643 is also taken to be a reference to the document as in force 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/). However, a shorter, but regularly updated, online version is available free at https://www.icao.int/publications/DOC8643/Pages/Search.aspx See below for further information.
Part 11 of CASR	Part 11 sets out administrative provisions for the regulation of civil aviation, including in relation to: - authorisations; and - exemptions from provisions of these Regulations and the Civil Aviation Orders; and - directions; and - delegation of CASA's powers; and - the issuing of Manuals of Standards.	As in force or existing from time to time. If a direction referred to in section 2.05 is issued under regulation 11.245 of CASR, the direction ceases to be in force in accordance with regulation 11.250 of CASR.	This document is available for free on the Federal Register of Legislation.
Part 173 of CASR	Part 173 provides for the standards that apply to the design of instrument flight procedures, and applies to the persons who want to become, or are, certified designers or authorised designers of terminal instrument flight procedures and certain employees of those persons who design instrument flight procedures other than terminal instrument flight procedures.	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
Part 175 of CASR	Part 175 establishes standards and requirements for the quality and integrity of data and information used in air navigation.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Regulation 166E of CAR	Provides the requirements for operating on or in the vicinity of certified, military, registered or designated non-controlled aerodromes.	As in force or existing from time to time.	This document is available for free on the Federal Register of Legislation.
Australian Standard AS 2700-2011, *Colour Standards for General Purposes*	Defines 206 reference colours to assist with the specification and matching of colours used in industrial, architectural and decorative areas, with particular emphasis on paints and related materials.	As in force or existing from time to time.	This document is publicly available but subject to copyright that belongs to Australian Standards. It is made available by Australian Standards for a fee (https://infostore.saiglobal.com/en-au/Standards/AS-2700-2011-123923_SAIG_AS_AS_268185/) – see below for further information.
Joint International Organization for Standardization/ International Electrotechnical Commission ISO/IEC 17011	The requirements for accreditation bodies accrediting conformity assessment bodies.	As in force or existing from time to time.	This document is freely is available at: https://www.iso.org/standards.html
Aeronautical Information Publication (AIP)	The AIP is published by Airservices Australia (AA) as an Aeronautical Information Service provider, under the *Air Services Regulations 1995*, to disseminate information relevant to aviation participants on matters essential to safe air navigation that are of lasting relevance. Some parts of the AIP are underpinned by legislative instruments, while other parts are not.	The AIP is incorporated into the Part 139 MOS as the AIP exists and is published by AA from time to time.	The AIP is freely available on the AA website at: https://www.airservicesaustralia.com/aip/aip.asp

Further information

Annex 3, Annex 4, Annex 10 and Annex 14 to the Convention on International Civil Aviation, ICAO Documents 9137, 9157 and 8643, and Australian Standard AS 2700-2011, are copyright, commercial products for which there is a cost to obtaining a copy. These costs are not considered to be unreasonably onerous for certified aerodrome 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 for aerodromes in the Part 139 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 139 MOS over a lengthy period of time through the collaborative efforts of the Airspace and Infrastructure Users Group Sub-committee of the Standards Consultative Committee (***SCC***), which was (at the relevant time) the primary CASA/industry consultation forum. A number of meetings were held between 2015 and 2017.

CASA engaged in public consultation on the proposals, in August 2017, through the release of a Notice of Proposed Rule Making (NPRM) outlining the proposed amendments to Part 139 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 109 responses, including 76 individual responses and 33 responses on behalf of organisations. There was majority support among respondents for the proposals.

In October 2018, the Aviation Safety Advisory Panel (***ASAP***, the successor consultation forum to the SCC) convened a CASA/industry technical working group (***TWG***) to evaluate the new Part 139 regulations and the MOS. The TWG made a number of suggestions, the majority of which CASA addressed. On 30 November 2018, the ASAP gave its final confirmation that the matters had been satisfactorily resolved, and stated its support for the making of the regulations (*Civil Aviation Safety Amendment (Part 139) Regulations 2019*) and the new MOS. On 29 July 2019, the Australian Airports Association (***AAA***) raised a concern about the need for grandfathering of the OLS associated with existing runways. CASA addressed this in the MOS to the satisfaction of the AAA.

Regulation Impact Statement

A Regulation Impact Statement (***RIS***) was prepared by CASA for the new Part 139 regulations 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: 24678). A copy of the RIS was included in the Explanatory Statement for the new Part 139 regulations (https://www.legislation.gov.au/Details/F2019L00176/Download).

Statement of Compatibility with Human Rights

A Statement of Compatibility with Human Rights is at Attachment A. 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.

Transitional provisions

The provisions of the MOS commence on 22 August 2020. However, transitional provisions have the effect of grandfathering existing aerodromes (including the OLS associated with an existing runway) that fully comply with the standards that preceded this MOS, until such time as the aerodrome operator replaces or upgrades any particular facility of the aerodrome (or fails to maintain it in accordance with the requirements of this MOS for the same kind of facility), at which point the standards in this MOS apply to the replaced or upgraded facility and, if the facility was an existing runway, its associated OLS. (Ongoing appropriate maintenance does not constitute replacement or upgrade.) However, for processes or systems that are not physical facilities, the standards in the MOS apply to the operators of all new and existing aerodromes from the commencement date of this MOS.

Commencement and making

The MOS commences immediately after the commencement of Part 139 of CASR on 22 August 2020. Part 139 of CASR was created within the *Civil Aviation Safety Amendment (Part 139) Regulations 2019* which was made on 21 February 2019, but does not commence until 22 August 2020. Thus, the empowerment for the MOS in regulation 139.005 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.

ATTACHMENT A

Statement of Compatibility with Human Rights

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

Part 139 (Aerodromes) Manual of Standards 2019

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 139) Regulations 2019* (the ***Regulations***) amends the *Civil Aviation Safety Regulations 1998* (***CASR***) to introduce a new Part 139 under which a Manual of Standards is prescribed for the regulation of the standards for certified aerodromes.

As might be expected for a subject matter of such engineering and technical complexity as the construction and maintenance of a modern Australian aerodrome, or ensuring the continuing safety and viability of existing aerodromes, 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 includes, collected in one place, an exposition of the relevant CASR Part 139 empowerments for the MOS.
- Chapter 2 provides for the way the MOS is to apply to new aerodromes and existing aerodromes, with related definitions.
- Chapter 3 provides definitions for the MOS.
- Chapter 4 provides for the aerodrome reference codes which determine the standards an aerodrome facility must meet to be suitable for use by aeroplanes within a particular range of performance and size.
- Chapter 5 provides the information that must be reported to the Aeronautical Information Service (***AIS***) provider about the aerodrome and recorded in the aerodrome manual.
- Chapter 6 provides for the physical characteristics and standards of aerodrome movement facilities including the standards for runways, taxiways, holding bays, aprons, blast and wash facilities and glider facilities.
- Chapter 7 provides the requirements for monitoring, and responding to, obstacles at an aerodrome facility.
- Chapter 8 provides the requirements for visual aids at an aerodrome in the form of markings, markers, signals, signs and wind direction indicators.
- Chapter 9 provides the requirements for aerodrome visual aids in the form of lighting.
- Chapter 10 provides the requirement for an aerodrome to have an aerodrome manual.
- Chapter 11 provides for the information that must be included in the aerodrome manual.
- Chapter 12 provides for the inspection and reporting requirements in relation to an aerodrome's condition and compliance.
- Chapter 13 provides the functions for specific aerodrome personnel.
- Chapter 14 provides the requirements for the control of airside access and vehicle control.
- Chapter 15 provides the requirements for conducting aerodrome works.

- Chapter 16 provides the requirements for preparing, managing and maintaining "method of working plans" (MOWPs) for carrying out works at or on an aerodrome.
- Chapter 17 provides the requirements for managing wildlife hazards at an aerodrome.
- Chapter 18 provides the requirements for maintenance of surfaces and pavements at an aerodrome.
- Chapter 19 provides the requirements for communication, navigation, surveillance systems, and meteorological facilities, used at an aerodrome.
- Chapter 20 provides the requirements for ground earthing points in relation to electrical systems at an aerodrome.
- Chapter 21 provides the requirements for anchoring and tying-down aircraft so that they are securely held at an aerodrome.
- Chapter 22 provides the requirements for radio communication facilities at an aerodrome.
- Chapter 23 provides the requirements for aircraft take-off and landing in low-visibility operations at an aerodrome.
- Chapter 24 provides requirements for aerodrome emergencies, including the establishment of an emergency committee, planning and response.
- Chapter 25 provides the requirements for safety management systems for the overall management of safety at an aerodrome.
- Chapter 26 provides the requirements for establishing risk management plans for an aerodrome.

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 139 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 in the construction, maintenance and use of aerodromes. 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 in the design, construction and operation of certified aerodromes, 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. For Article 7 of the ICESCR, the MOS also promotes the right to safe and healthy working conditions for all personnel at a certified aerodrome, but particularly those using vehicles or carrying out construction and maintenance works.

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 information that must include the names, postal addresses, telephone numbers, email addresses, website and facsimile numbers of the aerodrome operator and their nominated personnel. The information is required so that the aerodrome administrators and related safety personnel can be identified to CASA for safety regulatory purposes, for example, in the course of safety surveillance, inspections and audits or emergencies.

Chapter 11 of the MOS provides that contact information must be recorded in the aerodrome manual for specified personnel. This information is required so that persons with responsibility for ensuring the proper administration of aerodrome procedures can be readily identified both to CASA and to other persons who have legitimate access to the manual, in the event that they need to be contacted in emergencies or in the course of safety surveillance, inspections and audits.

Chapter 12 of the MOS provides that contact information must be recorded in the aerodrome manual for personnel conducting technical inspections. This information is required so that persons with responsibility for conducting technical inspections can be readily identified and contacted for the same reasons.

Chapter 16 of the MOS provides that contact information must be recorded in the Method of Working Plan for the project manager and works safety officer or officers. This information is required so that persons with responsibility for ensuring the proper administration of the relevant procedures can be readily identified and contacted for the same reasons.

The requirements in the provisions mentioned above involve activities of one 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.

The protections afforded by the *Privacy Act 1988* continue to apply to the 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 *Civil Aviation Act 1988* (the ***Act***), CASR and, in particular, Part 139 of CASR in relation to the safe operation of aerodromes.

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 right to work may be engaged by Chapter 12 (Inspecting and reporting aerodrome condition and compliance), which prescribes technical inspections and the requirements to be satisfied before a person may conduct a technical inspection.

Further, this same right may be engaged at Chapter 13 (Aerodrome personnel functions) prescribing the knowledge requirements of aerodrome personnel including the accountable manager, the reporting officer and the works safety officer.

The same issue may arise under Chapter 22 which prescribes certification requirements for certain kinds of radio operators (certified air/ground radio operators).

However, in the interests of aviation safety, it is necessary that persons performing the relevant functions hold the highest reasonable standard of competency and proficiency, and that they are sufficiently qualified and experienced to achieve the safety outcome of their position.

Therefore, in the circumstances, the requirements themselves are a reasonable, necessary and proportionate requirement under aviation safety law to ensure the integrity of the aviation safety system.

The right of relevant persons to the opportunity to gain their living by work is recognised, however, that right would, of necessity, be lost if the person fails to obtain the qualifications and competence necessary to safely carry out their aviation safety responsibilities. 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, CASR and, in particular, Part 139 of CASR in relation to the safe operation of aerodromes.

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 of aviation operations at aerodromes and to promote the integrity of the aviation safety system which is critically dependent on the existence of safe aerodromes.

ATTACHMENT B

Details of the Part 139 (Aerodromes) Manual of Standards 2019

CHAPTER 1 – PRELIMINARY

Division 1 General

Section 1.01 provides for the naming of the *Part 139 (Aerodromes) Manual of Standards 2019* (the ***MOS***).

Section 1.02 provides that the commencement of the MOS is immediately after the commencement of Part 139 of CASR. Part 139 of CASR was created within the *Civil Aviation Safety Amendment (Part 139) Regulations 2019* which was made on 21 February 2019, but does not commence until 22 August 2020. Thus, the empowerment for the MOS in regulation 139.005 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.

Section 1.03 provides that the purpose of the MOS is to set out the standards for ***certified aerodromes***. However one chapter, namely Chapter 22, sets out certain standards for ***all aerodromes*** but only in respect of radio communication facilities. That the MOS in essence regulates only certified aerodromes reflects the important change in the classification of aerodromes brought about by Part 139 of CASR, which replaced the previous 3 regulated aerodrome classifications (certified, registered and other) with the single classification of certified.

Section 1.04 provides that the MOS only applies in accordance with Chapter 2. As is noted below, Chapter 2 provides the circumstances under which the MOS has effect when it commences – full effect for an aerodrome that comes into operation for the first time after the commencement, and more qualified effect in relation to operators of existing aerodromes or existing aerodrome facilities if the facility is a grandfathered facility.

A grandfathered facility is an existing aerodrome facility (and for a runway, its associated obstacle limitation surfaces) that fully complies with the aerodrome standards that were in force immediately before commencement of the MOS, as long as the aerodrome manual documents how the facility does not comply with the MOS.

For these physical aerodrome facilities, including existing runways and their associated obstacle limitation surfaces, the standards in the MOS only apply if the grandfathered facility is replaced, or upgraded, or not maintained in accordance with the requirements under the MOS for the same kind of facility. Until then, the standards that previously applied to the aerodrome facility continue to apply. However, for processes that are not physical aerodrome facilities, the standards in the MOS apply to the operators of all existing aerodromes from the commencement date of the MOS.

Section 1.05 provides that where a provision of the MOS is inconsistent with a provision of an incorporated document, the MOS provision takes priority and the incorporated provision applies only insofar as it may do so consistently with the MOS provision.

Section 1.06 provides guidance for how Tables, Figures and Notes are to be interpreted in the MOS, with a Figure either merely *illustrating* matters or more substantively *showing* matters. For

ease of reference, Tables and Figures are numbered, not sequentially, but with an anchoring reference to the section or subsection which *first refers* to the Table or Figure.

Section 1.07 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. 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. 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. Further, if a provision of the MOS refers to an ICAO document, then, unless the contrary intention appears, the document is taken to be applied, adopted or incorporated by, into or for the MOS, as the case requires.

A reference to any ICAO document is to be taken as a reference to the document as affected by any difference that Australia has filed with ICAO in relation to the document. A Note explains that details of differences that Australia has filed with ICAO are in Section 1.7 of the Aeronautical Information Publication, General, which may be accessed by navigating from the following link: http://www.airservicesaustralia.com/aip/aip.asp.

A reference to any Federal Aviation Administration (***FAA***) Advisory Circular or any Civil Aviation Safety Authority (***CASA***) Advisory Circular is a reference to the document in the version as in force or existing from time to time. Iterations of FAA documents generally progress through letters of the alphabet appended to the last digit of the numerical reference. A reference to any Australian legislative instrument is a reference to the instrument as in force or existing from time to time.

Section 1.08 provides for the application of references to a matter or thing being "intended, nominated or preferred", and for the meaning of the word "should" in a Note.

Subsection 1.08 (1) provides that references to a matter or thing that is expressed as being "intended" by an operator to be for a purpose is a reference to the operator's intended purpose, expressed or implied.

Subsection 1.08 (2) provides that references to a matter or thing that is "nominated" means nominated by an aerodrome operator, and the nomination is to be recorded in the aerodrome manual.

Subsection 1.08 (3) provides that a reference (however formulated) in a provision or a Table to a matter, thing or value that is "preferred" means that, as far as practicable, the use of the matter, thing or value is required in priority to another matter, thing or value expressed in the provision or Table, or in a related provision or Table. However, the other matter, thing or value expressed must itself be used or observed ***if*** the preferred matter, thing or value is not used because it is impracticable to do so.

Subsection 1.08 (4) provides that, if the preferred matter, thing or value is not complied with, the aerodrome manual must contain a statement to that effect, the reasons for non-compliance, and the alternative matter, thing or value that is complied with.

Subsection 1.08 (5) provides that, unless the contrary intention appears:

(a) where a maximum value is mentioned for something — that value must not be exceeded; and

(b) where a minimum value is mentioned for something — at least that value must be achieved.

Subsection 1.08 (6) provides that if a Note at the end of a provision states that some matter "should" be the case, the Note is to be read as a CASA recommendation but without affecting the meaning of the relevant provision.

Section 1.09 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.

Division 2 Empowerments

Section 1.10 provides that the MOS and all of its provisions are made under the powers conferred on CASA by regulation 139.005 of CASR.

Section 1.11 collects in a single place the specific CASR regulations for which particular requirements in the MOS have been made. This to provide a comprehensive cross-reference at the outset.

CHAPTER 2 – APPLICATION OF STANDARDS

Section 2.01 provides the definitions for Chapter 2 of the MOS.

Section 2.02 provides the circumstances under which the MOS has effect for new aerodromes. It provides that the MOS applies, for an aerodrome that comes into operation for the first time after the commencement of the MOS, and to the operator of such a new aerodrome.

Section 2.03 provides that Chapter 22 applies to and for *all aerodromes*, despite anything else in the MOS.

Subsections 2.04 (1) and (2) provide that the MOS applies to *the operator* of an existing aerodrome or an existing aerodrome facility subject to whether the facility is a grandfathered facility.

Subsection 2.04 (3) provides that the standards of the MOS only apply to a grandfathered *facility* if the grandfathered facility complies, and continues to comply, with the standards which applied to the aerodrome facility and the OLS immediately before the commencement of this MOS, and the facility is neither replaced nor upgraded, nor left unmaintained in accordance with the requirements of the MOS for the same kind of facility. The effect of subsections 2.04 (1), (2) and (3) is that only non-compliance with the preceding standards, or a replacement or upgrade or a maintenance failure with respect to an aerodrome *facility*, will trigger application of relevant standards in the MOS to the replacement or upgrade. However, with respect to processes or systems that are not aerodrome facilities, the standards in the MOS apply from the commencement of the MOS on 22 August 2020.

A Note in subsection 2.04 (3) explains that subsection 2.04 (3) describes when this MOS does not apply to the aerodrome facilities of an existing aerodrome with grandfathered status. Without grandfathered status, all of the requirements of this MOS apply. With grandfathered status, the standards in this MOS for an aerodrome facility (as defined), and the OLS associated with a runway, do not apply and the standards for the aerodrome facility and runway-associated OLS that previously applied continue to apply. Processes or systems are not aerodrome facilities (as defined) and the standards in the MOS for such processes and systems apply to the operators of all new and existing aerodromes from the commencement of the MOS, subject to any possible future transitional provisions in Part 202 of CASR.

Subsection 2.04 (4) provides that the standards that apply in the MOS for an upgrade of an existing aerodrome facility apply only to the upgrading of specific elements of the facility and do not apply to any other elements of the facility that are not being changed. The elements of the facility that are not being changed remain grandfathered until they are either replaced or upgraded.

Subsection 2.04 (5) provides that if a runway is upgraded, the associated OLS must then also comply with the requirements of the MOS for the upgraded runway. If the aerodrome reference code of the OLS associated with a runway that is part of a grandfathered facility is changed, the aerodrome reference code of that runway may remain the same but only as long as the aerodrome reference code of the OLS is not less than that of the runway; or only as long as the changed aerodrome reference code of the OLS does not, in effect, result in an upgrade of the runway.

Subsection 2.04 (6) provides that an operator may opt into the standards of the MOS before a facility is replaced or upgraded, as a means of voluntarily conforming to higher standards.

Section 2.05 provides that CASA may use its powers under regulation 11.245 of CASR if it considers that an activity at an existing aerodrome or an existing aerodrome facility would have an adverse effect on aviation safety if it were not considered to be, or deemed to be, a replacement or an upgrade. CASA may direct the aerodrome operator to apply the MOS to the activity as if the activity were a replacement or an upgrade and/or apply the MOS to another part of the aerodrome or facility as if that other part were directly and significantly affected by the activity.

Subsection 2.05 (2) provides that CASA must notify the aerodrome operator of any proposal to issue a direction and that the operator may object to the proposal.

Subsection 2.05 (3) provides that CASA must not issue a direction within 28 days of notifying the operator of the proposal to issue a direction unless it has considered any objections received from the operator within that 28 day period. This section also provides that CASA may permit a longer time period than 28 days.

Subsection 2.05 (4) provides that CASA may specify a shorter time period than 28 days if it determines that aviation safety requires a sooner consideration of the matter.

Subsection 2.05 (5) provides that all directions, notifications, permissions, objections or determinations mentioned in section 2.05 must be in writing.

Subsection 2.05 (6) provides that if a direction is issued under regulation 11.245 of CASR, the direction ceases to be in force in accordance with regulation 11.250 of CASR.

Subsection 2.05 (7) provides that section 2.05 applies subject to CASA's powers under Subpart 11G of CASR (about CASR Part 11 directions) and may be applied insofar as it is consistent with Subpart 11G.

Section 2.06 provides that CASA may approve in writing that an operator is not required to meet a standard specified in the MOS. CASA may grant an approval under this section if the operator applies in writing and identifies each of the relevant standards by reference to the relevant provisions of the MOS, states the length of the period during which each relevant standard will not be met, provides an accompanying safety assessment which satisfies this section, and satisfies CASA that the approval will not have an adverse effect on aviation safety.

This section further provides that an approval under subsection (1) must specify the provisions to which the approval applies, and may be time-limited or open-ended as to its duration or made subject to conditions.

CHAPTER 3 – DEFINITIONS ETC.

Section 3.01 provides definitions of key words, phrases and abbreviations used in the MOS.

CHAPTER 4 – AERODROME REFERENCE CODE AND DETERMINATION OF AERODROME STANDARDS

Subsection 4.01 (1) provides that the standards an aerodrome facility must meet, if it is to be suitable for use by aeroplanes within a particular range of performance and size, are determined by the aerodrome reference code (ARC) chosen by the operator.

Subsection 4.01 (2) provides the 3 elements that make up the ARC. The elements are the code number, the code letter and the outer main gear wheel span (***OMGWS***).

Subsection 4.01 (3) provides that the aerodrome operator must select from Table 4.01 (3) the code number corresponding to the highest value of the aeroplane reference field length of the aeroplanes which the aerodrome facility is nominated by the operator to serve. Table 4.01 (3) differentiates code numbers 1 to 4 by reference to the aeroplane reference field length.

Subsection 4.01 (4) provides that the aerodrome must select from Table 4.01 (4) the code letter corresponding to the greatest wingspan of the aeroplanes which the aerodrome facility is nominated by the operator to serve. Table 4.01 (4) differentiates code letters A to F by reference to the wingspan of the aeroplane.

Subsection 4.01 (5) provides that the aerodrome operator must select from Table 4.01 (5) the greatest OMGWS of the aeroplanes that the aerodrome or facility is nominated by the operator to serve.

CHAPTER 5 – AERODROME INFORMATION FOR THE AIP AND THE AERODROME MANUAL

Division 1 Information

Section 5.01 provides that an aerodrome operator must report information to the AIS provider about the aerodrome, movement area, visual aids, navigation aids, rescue and firefighting services, ground services, and aerodrome operational procedures. Under section 5.02, this information must be included in the aerodrome manual.

Sections 5.03 to 5.09 provide for the wide range of highly detailed and specific aerodrome information that must be reported to the AIS provider.

Division 2 Standards of information

Sections 5.10 to 5.17 provide the format and standards for the information that must be reported to the AIS provider and included in the aerodrome manual.

CHAPTER 6 – AERODROME PLANNING, DESIGN AND MAINTENANCE – PHYSICAL CHARACTERISTICS OF MOVEMENT FACILITIES

Division 1 Runways

This Division provides the aerodrome planning, design and maintenance specifications for runways including specifications for each of the following:

- the location of a runway threshold (section 6.01)
- runway width (section 6.02)
- runway turn pad and runway bypass pad (section 6.03)
- runway starter extension (section 6.04)
- parallel runways (section 6.05)
- runway longitudinal slope (section 6.06)
- runway sight distance (section 6.07)
- transverse slopes on runways (section 6.08)
- runway surface (section 6.09)
- runway bearing strength (section 6.10)
- runway shoulders (section 6.11)
- characteristics of runway shoulders (section 6.12)
- transverse slope on runway shoulder (section 6.13)
- provision of runway strip (section 6.14)
- composition of runway strip (section 6.15)
- runway strip length (section 6.16)
- runway strip width (section 6.17)
- longitudinal slope on graded area of runway strip (section 6.18)
- longitudinal slope changes on graded area of runway strip (section 6.19)
- radio altimeter operating area (section 6.20)
- runway strip transverse slope (section 6.21)
- surface of graded area of runway strips (section 6.22)
- composition of runway strips (section 6.23)
- objects or structures on runway strips (section 6.24)
- runway strip availability (section 6.25)
- runway end safety area (RESA) (section 6.26)
- clearways (section 6.27)
- location of clearways (section 6.28)
- dimensions of clearways (section 6.29)
- slopes on clearways (section 6.30)
- objects or structures on clearways (section 6.31)
- stopways (section 6.32)
- dimensions of stopways (section 6.33)
- surface of stopways (section 6.34)
- stopway slopes and slope changes (section 6.35)
- bearing strength of stopways (section 6.36).

Division 2 Taxiways

This Division provides the aerodrome planning, design and maintenance specifications for taxiways including specifications for each of the following:

- taxiway width (section 6.37)
- taxiway edge clearance (section 6.38)

- taxiway curves (section 6.39)
- taxiway longitudinal slope (section 6.40)
- taxiway transverse slope (section 6.41)
- taxiway sight distance (section 6.42)
- taxiway bearing strength (section 6.43)
- taxiway shoulders (section 6.44)
- width of taxiway shoulders (section 6.45)
- surface of taxiway shoulders (section 6.46)
- taxiway strips (section 6.47)
- width of taxiway strip (section 6.48)
- width of graded area of taxiway strip (section 6.49)
- slope of taxiway strip (section 6.50)
- objects or structures on a taxiway strip (section 6.51)
- taxiways on bridges (section 6.52)
- taxiway minimum separation distances (section 6.53)

Division 3 Holding bays, runway holding positions, intermediate holding positions and road holding positions

Under sections 6.54 to 6.56, this Division provides the aerodrome planning, design and maintenance specifications for the positions, locations and relevant distances of holding bays, runway holding positions, intermediate holding positions and road holding positions.

Division 4 Aprons

This Division provides the aerodrome planning, design and maintenance specifications for aprons including specifications for the following:

- location of an apron (section 6.57)
- separation distances on aprons (section 6.58)
- alternative aircraft parking position separation (section 6.59)
- slopes on aprons (section 6.60)
- apron bearing strength (section 6.61)
- apron roads (section 6.62)

Division 5 Blast and wash from aircraft propulsion systems

Section 6.63 provides that movement area design must protect people, other aircraft, buildings, vehicles and equipment from any damaging or injurious effects of jet blast, rotor wash or propeller wash.

Section 6.64 specifies the maximum blast and wash air velocities permitted for movement area design of an aerodrome.

Division 6 Glider facilities

Division 6 provides the aerodrome planning, design and maintenance specifications for glider facilities that must be met by an aerodrome operator should glider facilities be provided. The standards also encompass glider parking and staging areas (section 6.65).

Sections 6.66 to 6.68 provide the specifications for the dimensions of glider runway strips, the locations of glider parking areas, and glider runway strip standards.

CHAPTER 7 – OBSTACLE RESTRICTION AND LIMITATION

Division 1 General

Under section 7.01, the airspace around an aerodrome and the manoeuvring area of an aerodrome must be monitored and maintained free from obstacles in accordance with the MOS. The data requirements for terminal instrument flight procedure design must be determined by a certified designer under Part 173 of CASR.

Under section 7.02, objects or structures, other than approved visual and navigational aids, must not be constructed or erected within the obstacle restriction area of an aerodrome without the written approval of CASA. Equipment and installations required for air navigation must be of minimum possible mass and height, frangible including any mountings, and sited to reduce to a minimum any hazard they may present to aircraft. Also, all obstacles must be taken into account in determining the obstacle clear approach and take-off surfaces.

The Division also contains 3 important guidance Notes.

Note 1 warns that some kinds of aerodrome operations may not be authorised or permitted by CASA if the airspace around an aerodrome and the manoeuvring area as described in the MOS is not maintained clear of obstacles.

Note 2 reminds aerodrome operators that they are responsible for monitoring the airspace as described in the MOS and advising CASA of an actual or proposed penetration. The aerodrome operator is responsible for advising the relevant planning authority of the results of a CASA terminal instrument flight procedure assessment, and for liaising with the planning authority to ensure those hazardous obstacles, determined by CASA to pose an unacceptable risk to aviation safety, are not approved, or if present, are appropriately mitigated.

Note 3 is a pointer to section 7.03 in accordance with which obstacles within the aerodrome are to be dealt.

Division 2 Obstacle limitation surfaces (OLS)

This Division provides that an aerodrome operator must establish, monitor and maintain the obstacle limitation surfaces (***OLS***) applicable to the aerodrome. The physical dimensions of the OLS for approach runways are provided for in Table 7.15 (1) and the physical dimensions for take-off runways are provided for in Table 7.16 (1).

The Division provides the technical OLS requirements for the following:

- reference elevation datum (section 7.04)
- outer horizontal surface (section 7.05)
- conical surface (section 7.06)
- inner horizontal surface (section 7.07)
- approach surface (section 7.08)
- transitional surface (section 7.09)
- inner approach surface (section 7.10)
- inner transitional surface (section 7.11)
- baulked landing surface (section 7.12)
- obstacle-free zone (section 7.13)
- take-off climb surface (section 7.14)
- approach runways (section 7.15)

- take-off runways (section 7.16)
- establishment of the OLS (section 7.17)

The Division also provides the procedures for:

- aerodrome operators to deal with obstacles (section 7.18)
- objects or structures that could become obstacles (section 7.19)
- monitoring of obstacles associated with instrument runways (section 7.20)

Division 3 Aerodrome obstacle and terrain charts

This Division provides for when an aerodrome operator must prepare the following:

- a Type A chart (section 7.21) (an obstacle chart which contains information on all significant obstacles within the take-off area of an aerodrome up to 10 km from the end of the runway)
- a Type B chart (section 7.22) (an obstacle chart which provides obstacle data from around the aerodrome)
- a precision approach terrain chart – ICAO (section 7.23)
- an electronic aerodrome terrain and obstacle chart – ICAO (section 7.24)

The requirements for these charts are also established in this Division.

Division 4 Principles of shielding

This Division (in section 7.25) provides that an aerodrome operator must inform CASA in writing of the presence of all obstacles at the aerodrome. It provides that an aerodrome operator may apply in writing for a determination on whether or not an obstacle is shielded by another obstacle. Only CASA may determine whether the new obstacle is shielded, except in instances where an aerodrome operator has conducted an assessment for the purposes of preparing their Type A chart.

CHAPTER 8 – VISUAL AIDS PROVIDED BY AERODROME MARKINGS, MARKERS, SIGNALS, SIGNS, WIND DIRECTION INDICATORS ETC.

Division 1 General

This Division (in section 8.01) provides the general requirements for visual aids, including that visual aids must be clearly visible, designed, sited, marked, placed and maintained in accordance with the requirements under the Chapter.

It further provides, in section 8.02, that on a closed aerodrome, or on a closed part of the movement area of an aerodrome, all markings, markers, signals and signs (other than those indicating unserviceability) must be obscured or removed.

Under section 8.03, colours used in aerodrome markings, markers, signals and signs must meet Australian Standard AS 2700-2011, *Colour Standards for General Purposes*, as in force or existing from time to time, in accordance with Table 8.03 (1).

Section 8.04 deals with the visibility of markings. Section 8.05 deals with the dimensions and tolerances of markings.

Division 2 Markers

Section 8.06 provides that a marker must be lightweight and frangible and, when displayed, must be secured against propeller wash and jet blast to ensure it does not cause a hazard to aircraft.

The Division prescribes various requirements for different kinds of markers including the following:

- where cones can be used as markers, including their colour (section 8.07)
- works limit markers (section 8.08)
- gable markers (section 8.09)
- flush runway strip markers (section 8.10)
- use of markers on a runway strip (section 8.11)
- use of markers on an unsealed runway (section 8.12)
- use of markers on an unsealed taxiway (section 8.13)
- use of markers on an unsealed apron (section 8.14)

Division 3 Runway markings

Section 8.15 of this Division provides the requirements for runway markings including colour, priority and surface finish.

This Division also provides the requirements for the following:

- pre-threshold area markings (section 8.16)
- runway threshold markings (section 8.17)
- runway destination markings (section 8.18)
- runway centreline markings (section 8.19)
- runway end markings (section 8.20)
- runway side-stripe markings (section 8.21)
- aiming point markings (section 8.22)
- touchdown zone markings, including ICAO “A” and simple pattern markings (section 8.23, 8.24, 8.25)
- permanently and temporarily displaced threshold markings (section 8.26, 8.27, 8.28, 8.29, 8.30, 8.31)
- runway land and hold short position markings (section 8.32)
- runway turn pad markings (section 8.33)
- runway starter extension markings (section 8.34)

Division 4 Taxiway Markings

Section 8.35 of this Division provides the requirements for taxiway markings, including colour, width and purpose.

This Division also provides the requirements for the following:

- taxi guideline markings (section 8.36)
- taxi guidelines on runways (section 8.37)
- enhanced taxi guidelines (section 8.38)
- runway holding position markings (section 8.39)
- mandatory instruction markings (section 8.40)
- information markings (section 8.41)
- intermediate holding position markings (section 8.42)

- taxiway edge markings (section 8.43)
- holding bay markings (section 8.44)
- taxiway limit markings (section 8.45)

Division 5 Apron Markings

Section 8.46 of this Division provides the requirements for apron markings, including visibility.

This Division also provides the requirements for the following:

- apron taxi guidelines (section 8.47)
- apron edge markings (section 8.48)
- aircraft type designator markings (section 8.49)
- parking clearance line (section 8.50)
- aircraft apron limit line markings (section 8.51)
- equipment clearance (staging) line markings (section 8.52)
- equipment storage markings (section 8.53)
- vehicle service road markings (section 8.54)
- aircraft parking position markings (section 8.55)
- lead-in lines (section 8.56)
- aircraft parking position designation markings — apron taxiway and taxilane (section 8.57)
- aircraft parking position designations — parking position (section 8.58)
- aircraft type parking restriction designator markings (section 8.59)
- aircraft parking position limit designators (section 8.60)
- pilot turn line markings (section 8.61)
- primary aircraft parking position markings (section 8.62)
- marshaller stop lines (section 8.63)
- pilot stop line markings (section 8.64)
- alignment lines (section 8.65)
- secondary aircraft parking position markings (section 8.66)
- keyhole markings (section 8.67)
- lead-out lines (section 8.68)
- designation characters for taxi and apron markings (section 8.69)
- push-back operator guidance markings (section 8.70)
- aircraft push-back lines (section 8.71)
- tug push-back vehicle parking position line markings (section 8.72)
- towbar disconnect markings (section 8.73)
- push-back limit markings (section 8.74)
- push-back alignment bar markings (section 8.75)
- passenger path markings (section 8.76)
- miscellaneous area line markings (section 8.77)
- hazardous area markings (section 8.78)

Division 6 Movement area guidance signs (MAGS)

This Division provides the visual requirements for both mandatory and information only movement area guidance signs (***MAGS***). Under section 8.79, mandatory MAGS must be white letters on a red background and must be obeyed by pilots. Information signs must be black lettering on a yellow background, or vice versa, and aerodrome operators must consult airlines and CASA Advisory Circulars on the need for such signs in various places around the aerodrome.

The Division also includes the technical requirements for the following:

- naming of taxiway location signs (section 8.80)
- their dimensions and location (section 8.81)
- sign size and location distances, including runway exit signs (section 8.82)
- face width of a sign (section 8.83)
- frangible structure of signs (section 8.84)
- illumination of signs (section 8.85)
- MAGS with mandatory instructions (section 8.86)
- runway designation signs (section 8.87)
- CAT I, II or III runway designation signs (section 8.88)
- runway holding position signs (section 8.89)
- aircraft NO ENTRY signs (section 8.90)
- vehicle STOP signs (section 8.91)
- runway/runway intersection signs (section 8.92)
- MAGS with information (section 8.93)
- taxiway location signs (section 8.94)
- taxiway direction signs (section 8.95)
- destination signs (section 8.96)
- take-off run available signs (section 8.97)
- runway exit signs (section 8.98)
- LAHSO distance-to-go signs (section 8.99)
- parking position identification signs (section 8.100)

Division 7 Wind direction indicators

Under sections 8.101 and 8.102, this Division requires an aerodrome operator to install and maintain at least 1 wind direction indicator at the aerodrome, unless more than 1 is specifically required under the MOS. The requirements and design standards for wind direction indicators, and their location at aerodromes, are set out in this Division.

Division 8 Ground signals

Under sections 8.103 and 8.104 of this Division, a signal area may be provided in conjunction with 1 wind direction indicator. The design standards for signal areas and the ground signals that may appear within them are also prescribed.

Division 9 Markings for unserviceable areas and works areas

Under sections 8.105, 8.106 and 8.108, this Division provides for the markings for an unserviceable area of the following:

- a runway
- a taxiway
- an apron
- a holding bay

It also provides for the markers that show the boundary of an unserviceable area or the limits of a works area. Section 8.107 sets out the particular circumstances in which these markings are not required.

Division 10 Obstacle markings

Under sections 8.109 to 8.111, this Division identifies the objects or structures at an aerodrome that are hazardous and that must be marked unless otherwise determined in writing by CASA. The Division provides for the design standards for the marking of hazardous objects or structures.

Division 11 Frangibility of markers and signs

Under sections 8.112 and 8.113, this Division sets out the frangibility requirements for the materials used in markers and movement area guidance signs so that they do not create a hazard for aircraft in the event of a collision.

Division 12 Helicopter areas on aerodromes

Section 8.114 provides that at aerodromes used by both helicopters and fixed-wing aircraft, the facilities for the exclusive use of helicopters must be marked in accordance with the Division. This includes in relation to the following:

- helicopter touchdown and lift-off area markings (sections 8.115 and 8.116)
- FATO area perimeter markings (sections 8.117 and 8.118)
- helicopter taxiway markings (section 8.119)
- helicopter apron markings (section 8.120)
- helicopter taxi guideline designations (section 8.121)
- helicopter parking designation markings (section 8.122)
- helicopter parking position markings – shoulder-line type (section 8.123)
- helicopter parking position markings – touchdown/positioning circle type (section 8.124)
- helicopter apron edge markings (section 8.125)

Division 13 Marking of glider runway strips on an aerodrome

Under section 8.126, this Division provides for the visual requirements for the marking of glider runway strips.

CHAPTER 9 – VISUAL AIDS PROVIDED BY AERODROME LIGHTING

Division 1 Lighting requirements

This Division sets out the minimum lighting system requirements for aerodromes conducting night operations.

Under section 9.01, if an aerodrome is available for night operations, lighting systems must be provided for the following:

- runways, taxiways and aprons intended for night use
- at least 1 wind direction indicator
- certain obstacles within the applicable obstacle limitation surface area of the aerodrome
- all unserviceable areas

However, retroreflective markings may be used instead of lighting on Code A or Code B taxiways where at least 1 other Code A or Code B taxiway is provided with lighting.

The section also provides for when a visual approach slope indicator system must be provided.

There are requirements for providing approach lighting systems for runways intended to serve CAT II and CAT III precision approach operations. An approach lighting system may also be omitted, or truncated, if CASA agrees in writing that it is physically impossible to comply with Divisions 6, 7 and 8 of Chapter 9.

The Division further provides design standards for the following:

- electrical circuitry (section 9.02)
- primary electrical power supply (section 9.03)
- secondary electrical power supply (section 9.04)
- switch-over time for secondary power supply (section 9.05)
- stand-by power supply (section 9.06)
- portable runway lights (section 9.07)
- portable lights on taxiways and apron edges (section 9.08)
- light fixtures and supporting structures (section 9.09)
- standardisation of aerodrome lighting (section 9.10)
- elevated and inset lights (section 9.11)
- lighting intensity and control (section 9.12)
- colours for aeronautical ground lights (section 9.13)
- chromaticity for incandescent lights (section 9.14)
- chromaticities for solid state (LED) lights (section 9.15)
- discrimination between incandescent coloured lights (section 9.16)

Division 2 Commissioning

Under sections 9.17 and 9.18, this Division provides the requirements for commissioning a lighting system for an aerodrome. It provides that before an aerodrome lighting system is first used, the system must be commissioned through a ground check and, where applicable, a flight check, in accordance with the Division. Written evidence of the commissioning must also be provided to CASA. Section 9.17 sets out the requirements for a ground check and section 9.18 sets out the requirements for a flight check.

Division 3 Pilot-activated lighting systems

This Division provides that a pilot-activated lighting system (a ***PAL***) must turn on all the lighting facilities required for aircraft operations at night unless the lighting facility is turned on by other means. Section 9.19 sets out the actual system requirements for a PAL. The Division also includes the technical requirements for the following:

- VHF carrier activation code (section 9.20)
- VHF carrier receiver (section 9.21)
- inputs to the PAL (section 9.22)
- fail-safe arrangements with the PAL (section 9.23)
- access to manual switches (section 9.24)
- receiving antenna (section 9.25)
- PAL with audio acknowledgement (section 9.26)

Division 4 Obstacle lighting

This Division provides the night-time lighting requirements for hazardous objects and structures.

Under section 9.27, for a runway intended to be used at night, certain artificial objects or structures are identified as hazardous obstacles that must be provided with obstacle lighting.

The Division also sets out requirements for the following:

- lighting for natural obstacles (section 9.28)
- lighting for temporary artificial obstacles (section 9.29)
- the different types of obstacle lighting and their use (section 9.30)
- location of obstacle lights (section 9.31)
- characteristics of low-intensity obstacle lights (section 9.32)
- characteristics of medium-intensity obstacle lights (section 9.33)
- characteristics of high-intensity lights (section 9.34)
- floodlighting of hazardous obstacles (section 9.35)
- serviceability of obstacle lights (section 9.36)

Division 5 Aerodrome lighting systems

Under section 9.37 of this Division, an aerodrome operator may provide an aerodrome beacon. The section sets out the requirements for the beacon's location, colour flashes, frequency, visibility, and light intensity.

Section 9.38 sets out the requirements for the use of an illuminated wind direction indicator. If an aerodrome is intended for night use, at least 1 primary wind direction indicator must be lit in accordance with the lighting requirements provided under section 9.38.

If an additional wind direction indicator (***WDI***) is provided in the vicinity of the threshold of an instrument runway, the WDI must be lit at night as an *illuminated* WDI (***IWDI***). However, this requirement does not apply if surface wind information is available through a broadcast aerodrome weather information service or a relevant person; or if the instrument approach procedure for the runway is restricted to daytime operations only.

Division 6 Simple approach lighting

Sections 9.39 and 9.40 of this Division set out the design standards to be applied should an aerodrome operator opt to provide a simple approach lighting system (***SALS***) to serve a non-precision approach, or non-instrument, runway. The Division sets out the requirements, and additional requirements, of a SALS.

Division 7 Precision approach CAT I, II and III lighting systems

Under this Division, precision approach CAT I, II and III runways must be provided with CAT I, II and III lighting systems. The specific technical requirements for these lighting systems are provided in sections 9.41 and 9.42 of the Division.

Division 8 Isocandela diagrams of approach lighting

Section 9.43 of this Division sets out technical lighting intensity standards, essentially in terms of the ratio between the average light intensities of the ellipse defining the main beam of relevant runway lights.

Division 9 Visual approach slope indicator systems

This Division provides the installation requirements for each type of visual approach slope indicator system (***VASIS***) on a runway. Section 9.44 identifies the relevant types of VASIS. Section 9.45 provides that for each threshold on a runway where a VASIS is provided, an

obstacle assessment surface (OAS) must be identified from an obstacle survey and assessment and it must meet the design standards for the system.

The Division also provides for the following:

- design standards for T visual approach slope indicator system (***T-VASIS***) and abbreviated T-VASIS (***AT-VASIS***) (section 9.46)
- characteristics of T-VASIS light units (section 9.47)
- requirements for precision approach path indicator systems (***PAPI***) (section 9.48)
- requirements for the approach slope and elevation setting of PAPI light units (section 9.49)
- standards for the siting of a PAPI or a double-sided PAPI (section 9.50)

Division 10 Runway lights

Division 10 sets out the design standards, characteristics and requirements for the following kinds of runway lights:

- runway edge lights — for different kinds of runways (sections 9.51, 9.52 and 9.53)
- runway threshold lights (including displaced lights) — for different kinds of runways (sections 9.54 to 9.63)
- runway end lights — for different kinds of runways (section 9.64 to 9.66)
- runway turn pad, runway bypass pad and runway starter extension edge lights (section 9.67)
- stopway lights (section 9.68)
- hold short lights (section 9.69)
- runway centreline lights (section 9.70)
- simple touchdown zone lights (section 9.71)
- runway touchdown zone lights (section 9.72)

The following are also provided in this Division:

- the method for calculating the photometric characteristics of runway lights (section 9.73)
- the requirements for installation and aiming of light fittings (section 9.74)
- isocandela diagrams of runway lighting (section 9.75)
- illustrations of runway lighting (section 9.76).

Division 11 Taxiway lights

This Division provides the circumstances in which taxiway lights and markers (taxiway centreline lights or taxiway edge lights) must be, and must not be, provided. The use of different types of taxiway lights, control of lights on taxiways, location, spacing, installation and characteristics of taxiway lights, are also provided in sections 9.77 and 9.78 of the Division. The Division further deals with the use and characteristics of:

- taxiway markers (sections 9.79, 9.94 to 9.97)
- taxiway lights (sections 9.80 to 9.93)
- runway guard lights (sections 9.98 to 9.101)
- intermediate holding position lights (sections 9.102 to 9.104)
- stop bars (sections 9.105 to 9.107)
- no entry bars (section 9.108).

The following are also provided in this Division:

- the method for calculating the photometric characteristics of taxiway lights (section 9.109)
- the requirements for installation and aiming of light fittings (section 9.110)
- isocandela diagrams of taxiway lighting (section 9.111)
- illustrations of taxiway lighting (section 9.112)

Division 12 Apron lights

Under section 9.113, this Division provides the standards for apron floodlighting where it is provided, including the following:

- where it must be provided (section 9.114)
- location of apron floodlighting (section 9.115)
- characteristics of apron floodlighting (section 9.116)

Division 13 Aircraft parking position lighting

This Division provides for the provision and characteristics of lighting for aircraft parking positions, including for the following:

- visual docking guidance systems (VDGS) (sections 9.117 and 9.118)
- advanced visual docking guidance systems (A-VDGS) (sections 9.123 and 9.124)
- aircraft parking position manoeuvring guidance lights (section 9.125)

The Division further provides for the location and characteristics of the following:

- azimuth guidance unit (sections 9.119 and 9.120)
- stopping position indicators (section 9.121 and 9.122)
- parking position identification signage (section 9.126)

Division 14 Works and unserviceable area lighting

Under section 9.127, this Division provides the requirements for lighting associated with closed and unserviceable areas. Sections 9.128 and 9.129 provide the requirements for lighted visual aids to indicate a temporary complete runway closure and their associated design characteristics. Section 9.130 provides the relevant lighting intensity isocandela diagram.

Further, this Division provides the requirements for movement area access in the vicinity of unserviceable areas and the characteristics of unserviceability lights (sections 9.131 and 9.132).

Division 15 Other lights on an aerodrome

This Division provides the requirements for other aerodrome lights that may be provided by an aerodrome operator including the following:

- works limit lights (section 9.133)
- road-holding position lights (section 9.135)

Section 9.134 is a reserved section titled “Road and car park lighting”. However, a Note explains that CASA does not regulate the lighting of roads and car parks (other than ensuring that they do not cause an aviation hazard: see section 9.143). If road and car park lighting is required on an aerodrome, the aerodrome operator is advised to consult the relevant local roads authority or the relevant Australian Standard (AS 1158.1.1 and 1158.1.2, as in force or existing from time to time).

Division 16 Monitoring, maintenance and serviceability of aerodrome lighting

Under section 9.136 of this Division, an aerodrome operator must frequently and regularly monitor and maintain all aerodrome lighting to the prescribed standard. Standards for determining the unserviceability of apron lighting, T-VASIS, PAPI, and interleaved circuitry are provided in the Division.

Section 9.137 describes the circumstances in which aerodrome lighting is deemed to be on outage. The section also provides when outages must be the subject of a NOTAM.

Section 9.138 provides the circumstances where apron lighting is considered to be on outage or unserviceable.

Section 9.139 provides the circumstances where a T-VASIS is considered to be unserviceable.

Section 9.140 provides the circumstances where a PAPI is considered to be unserviceable.

Section 9.141 provides the circumstances where interleaved circuitry is considered to be unserviceable.

Section 9.142 provides the maintenance requirements for a movement area guidance sign (MAGS) including the obligation of fixing any unserviceability in the lamp units which illuminate the sign.

Section 9.143 provides the circumstances where other lighting on the aerodrome, which exceeds the maximum light outputs as detailed in Figure 9.144 (2), must be reported to CASA for assessment. The section also provides that an aerodrome operator must not proceed with any proposed installation or use of equipment or lasers which exceed the maximum light outputs as detailed in Figure 9.144 (2), unless CASA has assessed and approved in writing the proposed lighting intensity of the installation, equipment or laser.

This section also requires that an aerodrome operator must notify CASA in writing of any proposal for any installation, equipment or laser within the aerodrome boundary that has or may have multiple light colours emitting from a single source, any rapid changes in light colour or flashing lights.

Section 9.144 describes the light requirements for certain aerodrome zones.

CHAPTER 10 – AERODROME MANUAL

This Chapter provides that an operator of a certified aerodrome must have an aerodrome manual that complies with the requirements set out in the MOS (section 10.01). The aerodrome operator must operate the aerodrome in accordance with the procedures set out in the manual unless the requirements of safety temporarily require non-compliance. Specifically, the Chapter makes provision in relation to the following:

- form, contents and updating of the manual (section 10.02)
- requirements for version control and changes to the manual (section 10.03)
- application or adoption of other material by the manual (section 10.04)

CHAPTER 11 – INFORMATION THAT MUST BE INCLUDED IN THE AERODROME MANUAL

This Chapter deals with the content of aerodrome manuals. Under section 11.01, the information specified in Chapter 5 of the MOS (aerodrome information for the AIP and the aerodrome manual) must be recorded in the manual. Chapter 5 contains detailed information and specifications that an aerodrome operator must also report to the AIS provider about the aerodrome, the movement area, the visual aids, the navigation aids, the rescue and firefighting services, the ground services, the aerodrome operational procedures and the aerodrome site.

Other matters that must be included in the aerodrome manual include the following:

- particulars of the management and administration of the aerodrome, including details of individuals responsible for operations, safety functions, maintenance and manual control (section 11.02)
- procedures for carrying out aerodrome serviceability inspections, and identification of responsible positions in the organisational structure (section 11.03)
- procedures for carrying out aerodrome lighting inspections and maintenance, monitoring and use of backup power supplies, maintaining relevant records, monitoring hazardous lights etc., and identification of responsible individuals or positions (section 11.04)
- procedures for notifying the AIS provider, the NOTAM Office, and ATC (where relevant) of any changes to aerodrome information, the condition of an aerodrome facility or to aerodrome hazards, and identification of responsible individuals or positions (11.05)
- procedures for monitoring and managing risks from obstacles, and identification of responsible individuals or positions (section 11.06)
- procedures for planning, and safely carrying out, aerodrome works, and identification of responsible individuals or positions (section 11.07)
- procedures for wildlife hazard management, and identification of responsible individuals or positions (section 11.08)
- details of the safety management system or risk management plan if required under Chapters 25 and 26, respectively (section 11.09)
- procedures for carrying out aerodrome technical inspections, if required, and identification of responsible individuals or positions (section 11.10)
- procedures for preventing unauthorised entry onto the movement area (***airside***) of persons, vehicles, equipment, mobile plant or animals (including land-based wildlife) or other things that may endanger aircraft safety (this is without prejudice to any federal or state legislative requirements concerning airport security or border control) (section 11.11)
- aerodrome emergency procedures and identification of responsible individuals or positions (section 11.12)
- procedures for removing disabled aircraft on or near the movement area (section 11.13)
- procedures for airside vehicle control (section 11.14)
- procedures for aircraft parking control (section 11.15)
- procedures for protection of communication, navigation, surveillance and meteorological facilities (section 11.16)
- procedures for managing ground activities at an aerodrome where low-visibility operations are conducted (section 11.17).

CHAPTER 12 – INSPECTING AND REPORTING AERODROME CONDITION AND COMPLIANCE

Division 1 Serviceability inspections

Under section 12.01 the operator of any aerodrome must carry out an aerodrome serviceability inspection after severe weather, if a hazard may be on the manoeuvring area, and when requested by CASA or ATC. For an aerodrome with scheduled air transport operations, an aerodrome serviceability inspection must be carried out on each day that an air transport movement is scheduled.

Section 12.02 provides for the timing of aerodrome serviceability inspections, which must be conducted before the first movement for a scheduled passenger air transport operation.

Section 12.03 provides that if objects that could have an adverse impact on the safety of an aircraft (significant objects) are found in the course of an inspection, they must be reported to ATC (where applicable). The section also provides that a serviceability inspection must check particular matters, and for a range of risks, relevant to aviation safety, for example:

- the presence of foreign objects (subsection 12.03 (1) and (2))
- the surface conditions of the movement area (subsection 12.03 (3))
- the aerodrome markings, lightings, wind direction indicators and ground signals (section 12.03 (4))
- the general cleanliness of the movement area (subsection 12.03 (5))
- any obstacles infringing the take-off, approach, transitional and PANS-OPS surfaces (subsection 12.03 (6))
- wildlife on, or in the vicinity of, the movement area (subsection 12.03 (7))
- empirical assessment of the bearing strength of unrated runway pavements and runway strips (subsection 12.03 (8))
- the aerodrome fencing and signage (subsection 12.03 (9))
- the aerodrome frequency response units (subsection 12.03 (10))
- the currency of NOTAMs (subsection 12.03 (11))
- inspection records (section 12.03 (12))

Section 12.04 provides that aerodrome operators must, as soon as possible, report “reportable occurrences" to the NOTAM Office. Reportable occurrences include the following:

- changes (whether temporary or permanent) in the published runway information
- aerodrome works affecting the manoeuvring area or the obstacle limitation surfaces
- outage or unserviceability of aerodrome lighting or obstacle lighting that is not rectified immediately
- temporary obstacles (unless removed immediately)
- any significant increase in, or concentration of, wildlife hazards unless dispersed immediately
- any change within the take-off climb area that is due to a new or changed obstacle which relevantly changes the gradient (unless dealt with immediately)
- the emergence of new obstacles (unless removed immediately)
- changes to the status of radio navigation or landing aids
- any other event which affects the safety of aircraft unless the event is ceased immediately

Division 2 Aerodrome technical inspection programs

Section 12.05 introduces aerodrome technical inspection programs.

Sections 12.06 and 12.07 use the number of air transport passenger movements, or actual aircraft movements, as the defining triggers to determine when aerodrome technical inspections must be implemented for higher or lower volume movement aerodromes.

Section 12.08 sets out certain requirements for the conduct of an aerodrome technical inspection, for example, it must check for any non-compliance with standards in this MOS and for any defects or deterioration in the condition of the movement area or visual aids and related equipment.

Section 12.09 expands on these requirements by listing the mandatory matters to be included in a technical inspection, for example:

- an instrument survey of the approach, take-off and transitional surfaces
- a check of other applicable surfaces associated with the OLS
- a check of the adequacy of the aerodrome operator's monitoring of instrument approach procedure-critical obstacles
- inspection and assessment of the movement area pavements, drainage and associated strips
- inspection and testing of the aerodrome lighting and electrical reticulation systems
- inspection and assessment of visual aids and markings
- inspection of equipment or facilities used for wildlife hazard management and aerodrome emergencies
- a check that the safety management system or risk management plan (as applicable) is up-to-date and functioning as documented
- an inspection of airside vehicle control arrangements (if applicable)
- a check that personnel appointed as a reporting officer or a works safety officer are competent

Section 12.10 sets out the range of relevant qualifications and experience that a person must have before conducting aerodrome technical inspections.

Section 12.11 sets out the triggering requirements for annual aerodrome manual validations and reports by aerodrome operators for whom the conduct of an aerodrome technical inspection is not required because they fall below the relevant triggering thresholds for aerodrome technical inspections.

Records of annual validations must be kept for at least 3 years. Records of persons conducting a validation and their qualifications and experience must be maintained in the aerodrome manual or in the report for the annual aerodrome manual validation.

CHAPTER 13 – AERODROME PERSONNEL FUNCTIONS

Sections 13.01 to 13.04 list in detail the knowledge and training requirements for an aerodrome operator's key personnel to be able to carry out their functions in a safe and competent manner. The key personnel are the accountable manager, the reporting officer and the works safety officer. Functional information about these personnel must be recorded in the aerodrome manual.

CHAPTER 14 – CONTROL OF AIRSIDE ACCESS AND VEHICLE CONTROL

Section 14.01 sets out the training requirements relating to drivers operating an airside vehicle on aerodromes with or without scheduled air transport operations.

Section 14.02 provides that an aerodrome that exceeds the passenger or aircraft movement trigger criteria must establish an airside access permit system, verify the competence of airside drivers and ensure compliance with the established airside rules.

Section 14.03 provides rules-of-the-road type requirements for airside vehicles.

Section 14.04 provides the requirements for surveillance equipment installed on an airside vehicle.

Section 14.05 provides the lighting requirements for an airside vehicle, including the colour, location and flashing requirement for lights installed on an airside vehicle.

CHAPTER 15 – AERODROME WORKS

Under section 15.01 the operator of a certified aerodrome must ensure that aerodrome works do not create hazards to aircraft or cause confusion to pilots. Apart from certain specified circumstances, there must be a method of working plan (***MOWP***) for aerodrome works and a NOTAM must be requested as early as possible.

Section 15.02 provides the standards and requirements for preparation of an MOWP, and identifies who must be consulted and who must be supplied with a copy of the MOWP.

Section 15.03 provides when aerodrome works can be carried out as time-limited works and sets out the time-limits for carrying out these works. Further, this section specifies the reporting requirements for certain types of time-limited works.

Section 15.04 provides for the appointment of a works safety officer to carry out the function of ensuring safe conduct of aerodrome works.

Section 15.05 provides the requirements for returning a runway to operational status following works.

Section 15.06 contains special rules for works on runway strips, particularly if close to the runway edge, in order to minimise hazards to aircraft.

CHAPTER 16 – METHOD OF WORKING PLANS

Section 16.01 provides that the MOWP must be presented in sections addressing various matters in sequence, from title page to the distribution list, and including works information, aircraft restrictions to aircraft operations, personnel and equipment, aerodrome markers, markings and lights, and administration.

Section 16.02 provides that the MOWP must identify the scope of the works and which aerodrome facilities are affected by works.

Section 16.03 provides the MOWP must have a dedicated section indicating how aircraft operations are restricted by the works and including the text of all planned NOTAMs.

Section 16.04 provides that the MOWP must indicate when personnel and equipment must leave the movement area for certain aircraft operations, and identify the routes to and from a works area.

Section 16.05 provides for MOWP drawings to show the installation, alteration or removal of markers, markings or lights, and requires the MOWP to include procedures for ensuring that electrical services and control cables are not damaged.

Section 16.06 provides that the MOWP must detail any special requirements during or on completion of works.

Section 16.07 provides that the MOWP must include relevant contact details for the project manager and works safety officer including after hours.

Section 16.08 provides that the MOWP must include a declaration that all works must be carried out in accordance with the MOWP. It further provides that each MOWP must have an expiry date, must be authorised and signed by the aerodrome operator's accountable manager (or project manager if so empowered) and must be complied with.

Section 16.09 provides for the various drawings that must be included in a MOWP.

Section 16.10 provides the minimum distribution list for circulation of a MOWP.

CHAPTER 17 – WILDIFE HAZARD MANAGEMENT

Section 17.01 provides that the aerodrome operator must monitor and record the presence and behaviour of wildlife on the aerodrome.

Section 17.02 provides that any wildlife detected must be assessed for potential risk to aircraft operations.

Section 17.03 provides for implementation of a wildlife hazard management plan dependent on certain numbers of air transport passenger movements or aircraft movements as triggers.

Section 17.04 provides for the preparation of a wildlife hazard management plan, including who must prepare it and what it must contain.

Section 17.05 provides for wildlife hazard reporting to the AIS provider so that appropriate warning notices may appear in the AIP-ERSA in accordance with Chapter 5 of the MOS. Pilots must also be advised of abnormally risky or short-term wildlife hazards by NOTAM.

Section 17.06 provides for the aerodrome operator to implement controls to mitigate wildlife hazard risks.

Section 17.07 provides for the training (and training records) of the personnel in charge of monitoring, reporting and removing wildlife hazards.

CHAPTER 18 – PAVEMENT MAINTENENCE

Section 18.01 provides that an aerodrome operator must ensure that all paved runway, taxiway and apron surfaces are kept clear of foreign objects or debris that could cause damage to aircraft.

Section 18.02 provides the requirements for runway surface friction or texture, including that the aerodrome operator must maintain runways in accordance with the surface and friction standards of the MOS.

CHAPTER 19 – COMMUNICATION, NAVIGATION, SURVEILLANCE (CNS) AND METEOROLOGICAL (MET) FACILITIES

Division 1 General

This Division deals with how aerodrome developments must not adversely impact on communications, navigation, surveillance or meteorological facilities (***CNS or MET facilities***).

Section 19.01 provides that an aerodrome operator must refer development proposals to the CNS or MET service provider for a hazard and impact assessment. The operator must not proceed with any development that is assessed by the CNS or MET provider as likely to create a hazard to aircraft, or likely to affect line of sight to an air traffic control or aviation rescue firefighting facility, or likely to impact adversely on the operation of a CNS or MET facility.

Section 19.02 provides that an aerodrome operator must document procedures for the maintenance of the areas around CNS and MET facilities on the aerodrome.

Section 19.03 provides that unless it is for air navigation purposes, equipment and installations must not be located within movement areas or obstacle limitation surfaces.

Division 2 CNS facilities

This Division provides specific requirements for protection of the following CNS facilities:

- VOR facilities (section 19.04)
- DME facilities (section 19.05)
- instrument landing systems (section 19.06)
- marker beacons (section 19.07)
- non-directional beacons (section 19.08)
- ground-based augmented systems (section 19.09)
- radar sensor sites (section 19.10)
- wide area multilateration (WAM) and automatic dependent surveillance – broadcast (ADS-B) sensors (section 19.11)
- VHF/UHF communication facilities (section 19.12)
- HF communication facilities (section 19.13)
- satellite ground stations (section 19.14)
- microwave links (section 19.15)

Section 19.16 provides the requirements for locating CNS facilities within an aerodrome boundary.

Division 3 Meteorological facilities

Under Division 3, section 19.17 provides for the protection of MET facilities within an aerodrome boundary.

Section 19.18 provides the requirements for locating MET facilities within an aerodrome boundary.

CHAPTER 20 – EARTHING POINTS

Under section 20.01, an aerodrome operator may provide ground earthing points at an aerodrome. Each earthing point on an apron must be tested, inspected and marked in accordance with the requirements under the section.

CHAPTER 21 – LIGHT AIRCRAFT TIE-DOWN FACILITIES

Under section 21.01, an aerodrome operator may provide light aircraft tie-down facilities at an aerodrome in accordance with the section's technical requirements.

CHAPTER 22 – RADIO COMMUNICATION FACILITIES

Section 22.01 deals with the requirements for provision of a certified air/ground radio service (***CA/GRS***). It provides that a CA/GRS must provide specified weather and related aviation information to pilots and that a CA/GRS may only be provided by a certified air/ground radio operator.

Section 22.02 provides that the operators of certain non-controlled aerodromes must provide a ground-based aerodrome frequency confirmation system which is either an aerodrome frequency response unit (***AFRU***), a CA/GRS or a UNICOM service.

Section 22.03 provides that if a UNICOM or CA/GRS is provided, it must operate from 30 minutes before arrival to 30 minutes after departure of each scheduled air transport operation.

Section 22.04 provides the operating rules for AFRUs, where they are provided. If provided, they must comply with the Australian Communications and Media Authority Equipment Compliance Requirements.

Section 22.05 provides that an indication of the presence or failure of the AFRU primary power supply must be evident on the unit's external housing or by remote monitoring.

Section 22.06 defines a UNICOM service and sets out its limitations.

CHAPTER 23 – LOW-VISIBILITY OPERATIONS

Section 23.01 provides that for aircraft operations in reduced visibility or low cloud, the operator of a controlled aerodrome must establish low-visibility procedures (***LVP***). It further provides that the operator of a non-controlled aerodrome may establish LVP in accordance with this Chapter for the safety of low-visibility departures.

Section 23.02 sets out detailed requirements for developing low-visibility procedures.

Section 23.03 sets out detailed requirements for implementing low-visibility procedures.

Section 23.04 sets out the requirements for operators to regularly review their LVP, for relevance and effectiveness.

Section 23.05 provides for the location of electronic runway visual range sensors for use in various kinds of low visibility and precision approach operations.

Section 23.06 provides the conditions for when a runway can be nominated for particular kinds of precision approach operations.

Section 23.07 provides for runway visibility assessments, their procedures and methods.

Section 23.08 provides for the qualifications and attributes of appointed runway visibility (***RV***) assessors.

Section 23.09 provides the requirements and procedures an appointed RV assessor must follow when conducting a runway visibility assessment.

CHAPTER 24 – AERODROME EMERGENCY PLANNING AND RESPONSE

Section 24.01 provides that if there are scheduled international air transport operations, or if certain air transport passenger movement triggers are met, the relevant aerodrome must have an aerodrome emergency committee. The committee must prepare, maintain, implement and review the aerodrome emergency plan.

Section 24.02 provides that if there are scheduled international air transport operations, or if certain air transport passenger movement or aircraft movement triggers are met, the relevant aerodrome must have an aerodrome emergency plan. The section identifies emergency scenarios that must be considered by an aerodrome emergency plan, and provides that such a plan must describe the following:

- the composition of the aerodrome emergency committee
- procedures for liaison with emergency response authorities
- notification procedures to initiate an emergency response
- the role and function of the aerodrome operator's personnel during an emergency
- the emergency facilities and equipment
- procedures for an operational response to an emergency
- for a controlled aerodrome — procedures for a local stand-by
- procedures to return the aerodrome to operational status after an emergency plan
- arrangements for periodic review of the aerodrome emergency plan

Section 24.03 provides that aerodromes which are not required to have an emergency plan must be clearly identified within the applicable local or state emergency response plan, and have specified emergency response arrangements.

Section 24.04 provides that an aerodrome operator must make location details or maps of the aerodrome and its immediate vicinity available to emergency agencies.

Section 24.05 provides for testing and review of the aerodrome emergency plan.

Section 24.06 provides that an aerodrome that is not required to have an aerodrome emergency plan must have, and review, procedures for emergency preparedness involving local emergency responders.

CHAPTER 25 – SAFETY MANAGEMENT SYSTEM (SMS)

Section 25.01 defines a safety management system (***SMS***).

Section 25.02 provides that, subject to certain numbers of air transport passenger movements or aircraft movements, an aerodrome operator must have an SMS. The section sets out requirements for the preparation, implementation and review of the SMS.

Section 25.03 describes the matters which must be addressed in the SMS. These include documented details of the aerodrome operator's:

- commitment to and responsibility for safety
- safety policy and safety objectives
- procedures for appointing safety management personnel
- procedures for relevant third-party relationships and interactions
- procedures for coordination of an emergency response plan
- procedures for identification of, and access to, documentation relevant to the SMS
- risk management processes, including hazard identification and risk assessment/mitigation
- safety assurance processes, including safety performance monitoring and measurement, internal safety investigation, management of change, and continuous improvement of the SMS
- safety training and promotion processes, including SMS training and education and SMS safety communication

The SMS must provide for, and include documented details of, the safety accountabilities of the aerodrome operator's managers.

Section 25.04 provides for additional matters to be addressed in the SMS of an operator whose aerodrome has scheduled international air transport operations. These include procedures and documentation in relation to the following:

- management commitment
- safety objectives
- safety accountabilities and responsibilities
- primary person responsible for the SMS
- third party interfaces
- coordination of emergency response planning
- SMS documentation
- hazard identification
- safety risk assessment and control
- safety performance monitoring and measurement
- internal safety investigation
- management of change
- continuous improvement of the SMS
- SMS training and education
- safety communication

CHAPTER 26 – RISK MANAGEMENT PLANS

Section 26.01 provides that certain aerodromes that are not yet required to have an SMS, but that have certain numbers of air transport passenger movements or aircraft movements, must have a risk management plan (***RMP***) that is prepared, implemented, maintained and reviewed.

The plan must address the following:

- hazard identification
- risk assessment and control
- creation and management of relevant risk management plan documents, including a risk register and records of any dedicated risk assessments.