Australian Government
Civil Aviation Safety Authority

CASR PART

133 AUSTRALIAN AIR TRANSPORT OPERATIONS ROTORCRAFT

PLAIN ENGLISH GUIDE

VERSION 1.0 | JULY 2025

About this guide

Part 133 of the Civil Aviation Safety Regulations 1998 (CASR) and its associated Manual of Standards (MOS) sets out the applicable rules for air transport in rotorcraft.

This Civil Aviation Safety Authority (CASA) plain English guide summarises and restates these regulations from Part 133, its associated MOS and relevant advisory documents. This guide reorganises the information contained in these documents to make it easier for you to find, understand and apply the flight crew licensing rules.

This guide also includes, as is applicable, Part 119 of CASR which sets out the certification and management rules for air transport. Many of the rules are scalable for operations of different sizes and complexities.

By following this guide, it is expected you will comply with the Part 133 and Part 119 of CASR rules that are applicable to air transport operations in rotorcraft. The guide provides references to the corresponding legislation so you can easily refer to the full text of the CASR and the MOS. The current legislation can be found on the Federal Register of Legislation website.

We are committed to providing you with accurate, consistent and clear information to help you understand your legal obligations. All efforts have been made to ensure the information contained in this guide was correct at the time of publication. However, the information is subject to change without notice. You should ensure you are using the most current version of the guide, which can be found on the CASA website. Please visit the CASA website regularly for updates.

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Who is this guide for?

This plain English guide is for pilots and operators of a rotorcraft for an Australian air transport operation.

Part 133 of CASR applies to air transport operations in rotorcraft. A rotorcraft is defined as an aircraft that is a helicopter, a gyroplane or a powered-lift aircraft.

Part 133 establishes a regulatory framework for air transport operations in rotorcraft. Its primary purpose is to ensure the safety of passengers carried by these operations and to protect third-party persons on the ground.

Part 119 of the Civil Aviation Safety Regulations 1998 (CASR) prescribes requirements relating to the organisational aspects of air transports operations. Part 119 applies to operators conducting or intending to conduct Part 133 operations for the transport of passengers and cargo, and for medical transport operations.

How to use this guide

In this guide, certain words have been defined to avoid repetition and improve readability.

Unless stated otherwise, the word 'you' refers to a person or organisation that holds an air operator's certificate (AOC) for a rotorcraft transport operation.

A list of abbreviations and acronyms can be found in Appendix A and a full list of definitions in Appendix B.

Where we do not define a word in this document, consider its meaning to be that given in the regulations or if none is given, the Macquarie Dictionary.

For improved understanding, the guide includes exceptions, notes, lightbulbs and explainers.

Exceptions – certain regulations set out a principal legal requirement that in certain circumstances can be varied, or in some cases ignored. You must read these exceptions to understand the requirements fully.

Notes – are included to provide additional information or context.

Lightbulbs – provide useful extra information and are generally based on CASA's advisory circulars (ACs) and other guidance material.

Explainers – provide a more detailed explanation and are based on CASA's ACs, definitions, or other useful information.

The following terminology table has been created to improve readability:

Term	Meaning
approval	an approval provided in writing by CASA under Part 133.015 or Part 91.045 For a foreign-registered aircraft operating in Australian territory, approval means that given under the laws of the state of the registry of the operator of the aircraft. Contact your closest CASA regional office for guidance on approvals. See the CASA website for regional office contact details
equipment	any reference to equipment being required, fitted, carried or accessible means equipment which is operative or serviceable
exposition	the terms operations manual and exposition are synonymous
may	indicates an option in the context of the requirement
MOS	refers to the Part 133 Manual of Standards unless indicated otherwise
must	indicates an obligation or necessity (i.e. a mandatory requirement)
operations manual	the terms operations manual and exposition are synonymous
operator (of an aircraft)	if the operation of the aircraft is authorised by an AOC – the holder of the AOC or if the operation of the aircraft is not authorised by an AOC – the person, organisation or enterprise that makes the aircraft available to the aircraft's PIC for a flight (CASR Dictionary) See section 1.1 of this guide.
Part	unless otherwise specified refers to a part of the CASR
person	can include the pilot, an operator, a passenger, a ground support person or another person
a pilot	refers to any flight crew member (not necessarily the pilot in command)
PIC (pilot in command)	the pilot designated as being in command and charged with the safe conduct of the flight
radio	as with other equipment, which is required to be fitted or carried, a reference to radio or a radio communications system means one which is operative Where a radio is required, the pilot must be qualified to use it (see 91.625)
regulations	refers to the Australian civil aviation legislation, noting specific reference is made to the Federal Aviation Authority (FAA) (United States) and European Aviation Safety Agency (EASA) (European) regulations where necessary

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CHAPTER 1
PRELIMINARY

1.1 Overview

(133.005)

Part 133 CASR applies to the operation of a rotorcraft for an Australian air transport operation.

An air transport operation is:

- a passenger and/or cargo transport operation conducted for hire and reward
- a medical transport operation conducted for hire and reward including the transport of:
  - medical supplies
  - medical personnel.

CASA may add to this definition using an instrument. Currently there is no related instrument.

The term 'air transport' has replaced the terms:

- charter
- regular public transport (RPT)
- air ambulance when conducted for hire or reward.

The definition of medical transport operation requires consideration of the 'primary purposes of the operation'. The primary purpose is to transport medical patients, medical personnel, blood, tissue or organs for transfusion, grafting or transplantation or a kind prescribed by the Part 119 MOS. The purpose of an operation is determined at the start of the first flight for that operation. If the primary purpose is medical transport, this will include the flights or sectors:

- from your home base to the location from which a patient is intended to be retrieved
- to a drop-off location for a patient
- to your home base.

Note: Transporting non-crew member medical personnel is also a medical transport operation. However, the transport of medical transport specialist crew members is not a medical transport purpose as these crew members are assigned by you to perform a specific role on the aircraft and the transport is incidental to the operation not the primary purpose.

You will also need to refer to Part 119 which deals with the general certification and organisational aspects of air transport operations. Where applicable this has been included in this guide or a reference given.

When a flight is not an air transport operation the requirements of Part 133 do not apply. In such circumstances, it is your and the flight crew's responsibility to ensure the applicable regulations prescribed by Parts 91, 138, 141 and 142 of CASR are adhered to.

Please note Part 133 may add to or turn off some Part 91 requirements – either completely or partially. See table 1 for the Part 91 regulations that do not apply because the corresponding provision in Part 133 takes precedence.

Table 1: Part 133 – Australian air transport operations – rotorcraft

Provisions of Part 91	Provisions of Part 133	Section in this guide
Night vision imaging system (NVIS) flights (91.085)	Regulation 133.265	section 23.1
Compliance with Flight manual (91.095)	Regulation 133.030	section 7.3
Minimum height rules populous areas and public gatherings (91.265) Minimum height rules other areas (91.267) Minimum Heights visual flight rules (VFR) at night (91.277) Minimum heights instrument flight rules (IFR) flights (91.305)	Regulation 133.167	section 11.7
Fuel requirements (91.455) Oil requirements (91.460)	Division 133.D.6	chapter 12
Fuelling aircraft – persons on aircraft boarding or disembarking (91.510)	Regulation 133.195	section 12.9
Passengers – safety briefings and instructions (91.565)	Regulation 133.240	section 13.9
Performance (Subpart 91.F)	Subpart 133.F	chapter 15
Weight and balance (Subpart 91.J)	Subpart 133.J	chapter 16
Equipment (Subpart 91.K)	Subpart 133.K	chapter 17
Cabin crew (Subpart 91.P)	Subpart 133.P	chapter 19

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1.2 Approvals by CASA

For Part 133

(133.015)

CASA is authorised to issue approvals under Part 133 where a regulation refers to a CASA approval. All approvals granted by CASA under Part 133 are subject to the procedural requirements of CASR Part 11 (regulatory administrative procedures). This part requires CASA to have regard for the safety of air navigation and the applicant's history and suitability when considering the issue of approvals.

Note: A regulation 133.015 approval is also a significant change. An application for a regulation 133.015 approval will need to be accompanied by a copy of your exposition (or relevant section) clearly identifying the change. See section 2.8 of this guide.

For Part 119

(119.025)

CASA is authorised to issue approvals under Part 119 where a regulation refers to a CASA approval. All approvals granted by CASA under Part 119 are subject to the procedural requirements of CASR Part 11 (regulatory administrative procedures). This part requires CASA to have regard for the safety of air navigation and the applicant's history and suitability when considering the issue of approvals.

Note: Regulations 119.135 and 119.145 state that an approval must be applied for in writing to CASA. CASA must then grant the approval if the application meets the applicable standards and regulation 11.055 Grant of authorisation.

Note: If the approval is a significant change, your written application to CASA will need to be accompanied by a copy of your exposition (or relevant section) clearly identifying the change. See section 2.8 of this guide.

Application forms can be found on the forms and templates page on the CASA website.

1.3 Issue of a Manual of Standards

(133.020 and 119.045)

Part 133 and Part 119 each allows CASA to prescribe standards in a Manual of Standards (MOS) where it is necessary for giving effect to the respective Parts of the CASR.

A MOS is a document that supports the CASR by providing detailed technical material, such as technical specifications or standards. The MOS allows CASA to keep the standards up to date in a timely manner to meet the demands of the ever-changing environment while retaining the legislated change process that includes general and industry consultation. At this time, there is no Part 119 MOS.

1.4 Permitted categories of rotorcraft

(133.025)

You may only permit the operation of a rotorcraft in air transport operations if the rotorcraft is type certificated in at least one of the following operational categories:

› transport

› normal.

A transport category rotorcraft is certificated in accordance with Part 29 of the United States Federal Aviation Regulations (FARs), European Union Aviation Safety Authority (EASA) CS-29, or an equivalent airworthiness certification code of another International Civil Aviation Organization (ICAO) contracting state.

A normal category rotorcraft is certificated in accordance with Part 27 of the FARs, EASA CS-27, or an equivalent airworthiness certification code of another ICAO contracting state.

A rotorcraft's type certificate data sheet (TCDS) will describe its airworthiness category, certification basis and its state of design authority.

Note: Regulation 133.025 also states that operational categories may be listed in the MOS. Currently the MOS does not prescribe any additional categories.

Type certification is part of the aircraft certification process and leads to issue of a type certificate or equivalent document. Other categories may include utility and acrobatic.

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

1.5 What is an Australian air transport operation?

(119.010 and 119.030)

Flying or operating a rotorcraft for an Australian air transport operation is recognised as a specific, defined activity, otherwise known as a prescribed purpose. This recognition has legal and/or regulatory implications, such as requiring certain permissions or meeting specific standards.

An operation is considered an Australian air transport operation if it meets any of the following conditions:

› it is conducted by an Australian operator using a registered rotorcraft

› it involves both:

  » a flight into or out of Australia, or within Australia

  » a flight conducted by an Australian operator using a foreign-registered rotorcraft

› it is conducted by an Australian operator using a rotorcraft that is provided for by the Australia and New Zealand mutual recognition agreements (ANZA)

› it is conducted by a foreign operator using a foreign-registered rotorcraft and is conducted entirely within Australia, and not part of a flight into or out of Australia.

Note: There are rotorcraft operations that are similar to the above but are not considered an Australian air transport operation: They are:

› the operation of a rotorcraft under a permission under either:

  » section 25 (non-scheduled flights by foreign registered aircraft) of the Act

  » section 27A (permission for operation of foreign registered aircraft without an air operator's certificate (AOC)) of the Act.

› an air transport operation authorised by a New Zealand AOC with ANZA privileges that is in force for Australia

› an operation of an aircraft to which Part 129 (foreign air transport operations) of these regulations applies.

1.6 What is an Australian air transport air operator's certificate and an Australian air transport operator?

(119.015)

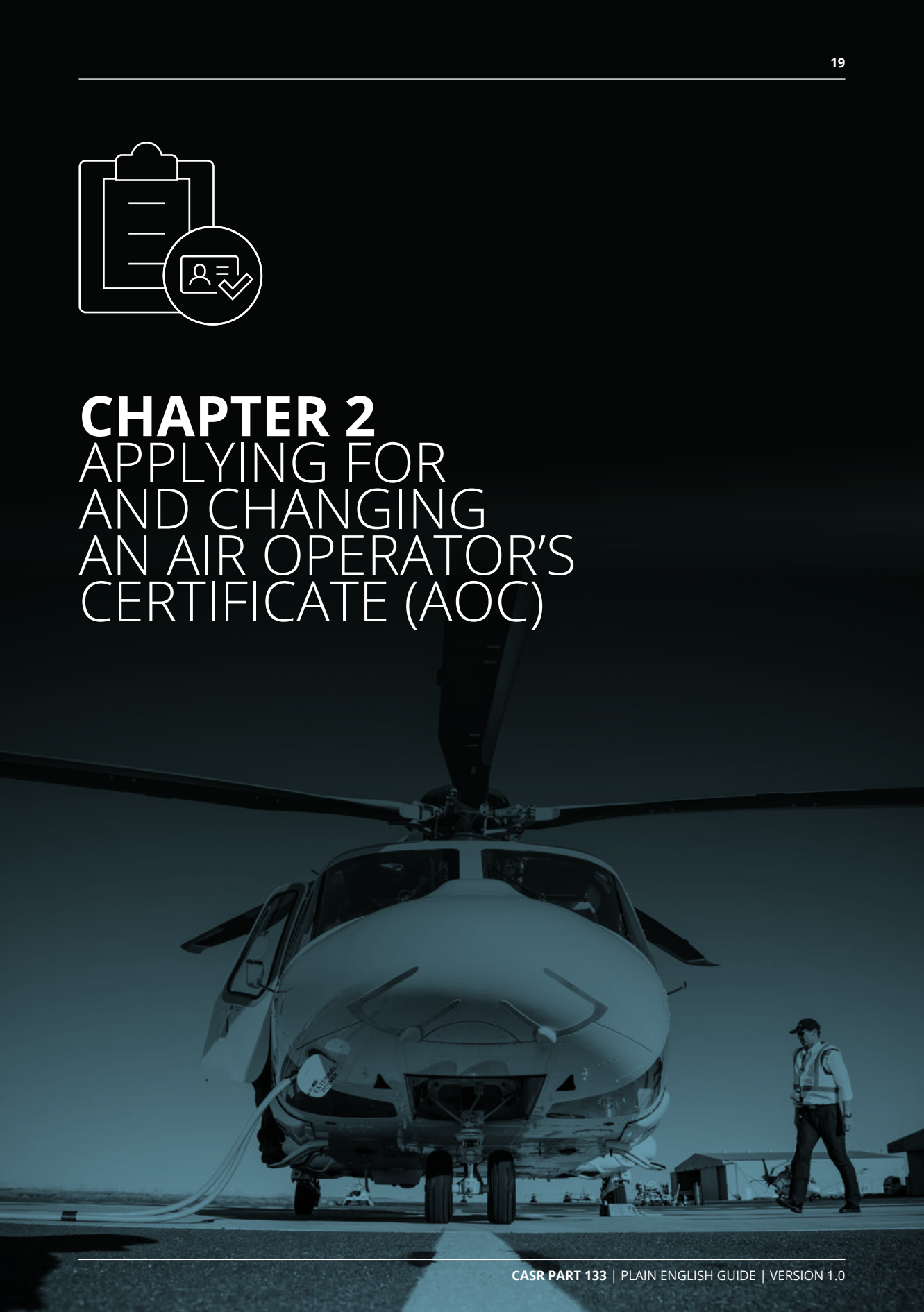
An Australian air transport air operator's certificate (AOC) authorises the operation of a rotorcraft for an Australian air transport operation. An Australian air transport operator is a person who holds an Australian air transport AOC.

1.7 Maximum period for use of foreign registered aircraft in Australia

(119.260)

You may only operate a foreign registered aircraft for a maximum total period of 90 days, or as approved by CASA, in any 12-month period.

CHAPTER 2
APPLYING FOR AND CHANGING AN AIR OPERATOR'S CERTIFICATE (AOC)



2.1 Overview

This chapter details the requirements for the grant of an Australian air operator's certificate (AOC) for conducting air transport operations in Australia and includes:

- AOC applications, compliance, conditions and responsibilities
- exposition approvals
- significant and non-significant operational changes
- CASA oversight
- restrictions on authorisations.

2.2 When is an Australian air transport AOC required?

(119.050)

If you wish to conduct an Australian air transport operation you must hold an Australian AOC.

2.3 Complying with and conditions of your AOC

(119.055 and 119.060)

You must abide by any condition imposed on your AOC. If you contravene a condition of your AOC, you may face significant penalties.

2.4 Applying for your AOC

(119.065)

When applying for an AOC, your application must be accompanied by a copy of your proposed exposition signed by the Chief Executive Officer (CEO) (or proposed CEO). It must also include:

- your name (as the applicant including any operating or trading name), contact details and ABN (if any)
- the address of your operational headquarters if different from your mailing address
- a statement from your CEO (or proposed CEO) that they will hold that position if you are applying as an individual i.e. you are not a corporation
- the name of each of the directors of the corporation (where applicable)
- the ACN and the address of the registered office (if an Australian corporation) or if not registered in Australia, the place where incorporated or formed
- details of the Australian air transport operations covered in the application
- a written undertaking from the CEO, or person proposed to the CEO, that they are capable of operating and will operate in accordance with your exposition and all relevant civil aviation legislation.

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2.5 Conditions for issue

(119.070)

CASA will issue you an Australian air transport AOC once CASA is satisfied:

- your exposition complies with section 3.2 of this guide: Content of exposition
- operations will be conducted safely
- operations will comply with your exposition and civil aviation legislation
- key personnel and directors (if any) are fit and proper persons
- key personnel meet the legislated qualification and experience requirements
- operations will comply with all continuing airworthiness legislation for each type and model of aircraft you propose to operate.

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In approving the AOC, CASA considers:

- the exposition and your capacity, as the operator, to comply with it
- any relevant previous or current suspensions or cancellations of an Australian or foreign civil aviation authorisation
- your corporate and organisational structures
- any other relevant information accompanying your application.

CASA may consider any of the following relevant when deciding if a person is a fit and proper person:

- the person's:
  - criminal records (if any)
  - bankruptcy status (if applicable)
  - history of serious behavioural problems
  - verified attitudes of compliance with civil aviation legislation or transport or safety-critical legislation in Australia or overseas
- any breaches of civil aviation legislation or transport or safety-critical legislation in Australia or overseas by the person
- if the person is (or was) a director of a corporation or holds (or has held) a position equivalent to a key personnel (in Australia or overseas) the corporation's:
  - records of insolvency, receivership, or winding-up involving any key personnel
  - investigations or comments by a statutory authority that regulates share dealing or financial affairs of corporations
- other matters relating to the capacity to hold an Australian air transport AOC or be the director of a corporation that holds an Australian air transport AOC.

2.6 Approval of your exposition

(119.075)

If CASA issues you an Australian air transport AOC, your proposed exposition is also approved.

All AOCs are issued for a specified term. As the AOC holder you must apply for, and be issued with, a new AOC to continue operating after the specified term expires.

2.7 Compliance as the AOC holder

(119.080)

You must not contravene:

- your AOC
- a condition of your AOC
- a direction or obligation imposed by CASA.

For all rotorcraft operated under your AOC, you must be the registered operator or hold an approval for that rotorcraft under regulation 119.025. See section 1.2 of this guide.

All key personnel positions must be occupied. If you are a sole operator, you must be the nominated Chief Executive Officer (CEO). See section 4.6 of this guide.

You are also responsible for ensuring that your personnel comply with all directions given by CASA (under a provision of the regulations) and all provisions of the civil aviation legislation that apply to your operations under your AOC.

Exemption: CASA EX68/24 Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2024 allows certain air transport operators to operate aircraft without being the registered operator, which is normally required under regulation 119.080(1)(h) of CASR. The exemption enables an AOC holder to be neither the registered operator or owner of the aircraft they operate but does include specific safety conditions that must be followed. You should review section 7AB of this exemption for details.

2.8 Significant and non-significant changes

Significant change

(119.020, 119.090 and 119.100)

You must not make a significant change without prior approval from CASA. An application for approval of a significant change must:

- be in writing
- set out the change
- be accompanied by a copy of the part of your exposition affected by the change, clearly identifying the change.

A change in relation to any of the following is deemed a significant change:

- the location and operation of your main operating bases, including the opening or closing of main operating bases
- your key personnel (see section 4.5 of this guide)
- a person authorised to carry out the responsibilities of any of the key personnel if the position holder is absent from the position or cannot carry out the responsibilities of the position (this person is commonly referred to the alternate)
- the formal reporting lines for a managerial or operational position with safety functions and responsibilities that reports directly to any of the key personnel
- your process for making changes that relate to the safe conduct and management of air transport operations
- the kinds of Australian air transport operations you are authorised to conduct under your Australian air transport AOC
- your areas of operation or routes, including beginning to operate in a new area or on a new route (but not including ceasing to operate in an area or on a route)
- the types and models of aircraft used in your Australian air transport operations, including the addition of a new type or model (but not including ceasing to operate a type or model)

- a change in relation to any of the following that does not maintain or improve, or is not likely to maintain or improve, aviation safety:
  - the plans, processes, procedures, programs and systems for the safe conduct and management of your Australian air transport operations
  - the qualifications, experience and responsibilities required by you for any key personnel
  - any other aeronautical or aviation safety related services provided to you by third parties
  - any change to the registration of an aircraft used in your Australian air transport operations
  - any leasing or other arrangements for the supply of an aircraft used in your Australian air transport operations
- a change required to be approved by CASA (other than a change resulting in the reissue or replacement of an instrument previously issued by CASA), in which the conditions or other substantive content of the instrument are unchanged.

Non-significant change

(119.100)

Non-significant changes do not require CASA approval but must comply with operational safety standards. Such changes include minor modifications that do not affect safety-critical aspects of the operation. You are responsible for assessing the impact of any non-significant change and ensuring compliance with all relevant regulations.

Approval of significant changes

(119.095)

CASA may approve a significant change if satisfied the requirements for an AOC will continue to be met. When CASA approves a significant change, the amended exposition is also considered to be approved.

2.9 How and when to make changes to your exposition

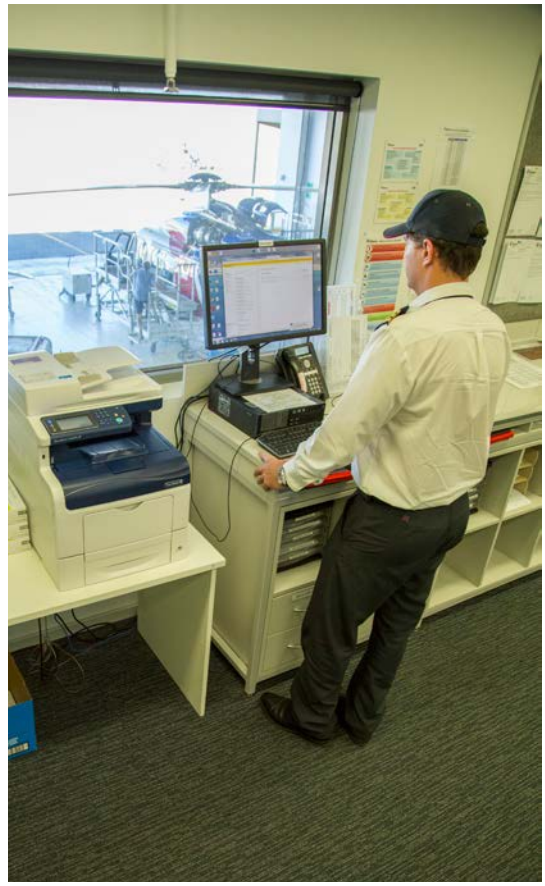
(119.020, 119.085 and 119.100)

All changes to an exposition must be made in accordance with your documented management of change process. Your exposition must document this change management processes.

You must submit a written notice to CASA and include a copy of the amended sections of your exposition if the following are changed:

- operating or trading name
- contact details
- operational headquarters address (if different to your mailing address)
- any other change that is a significant change.

See section 2.8 of this guide.



2.10 CASA directions relating to exposition or key personnel

(119.105)

CASA may direct you to:

- remove, include or vary information, procedures or instructions in your exposition
- remove any key personnel from a position if CASA believes the person is not carrying out the responsibilities of the position
- remove the CEO from the position if not properly managing matters they are accountable for.

All CASA directions to you must be in writing and will state the time within which compliance is required.

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2.11 Dealings in relation to cancelled, suspended, varied, pending or refused civil aviation authorisations

(119.255)

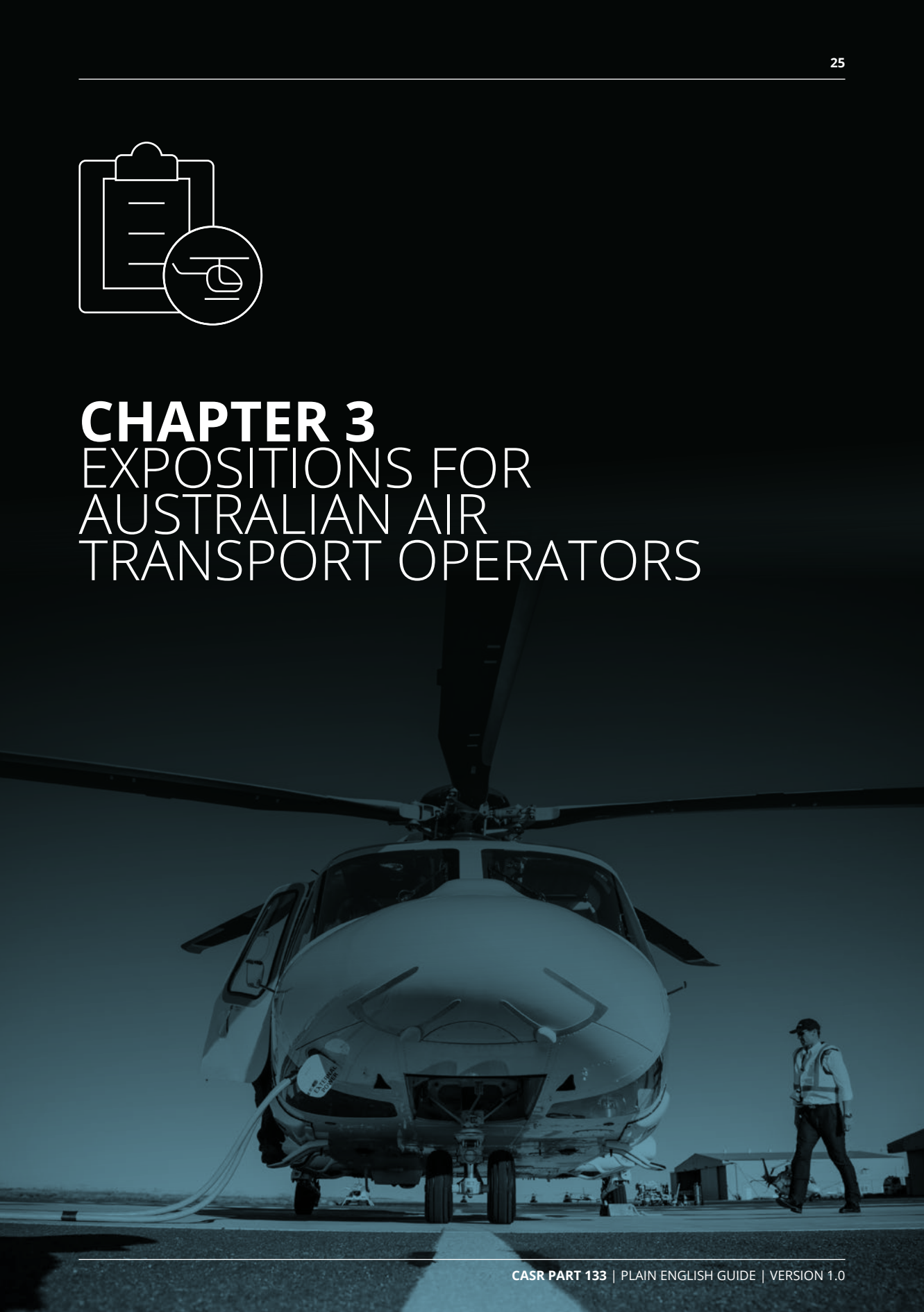
Unless you have CASA approval, you must not enter into an agreement with another person and carry out any of the following activities if their authorisation has been cancelled, suspended, varied, is pending, or has been refused:

- using a rotorcraft with a cancelled authorisation
- employing a person who was employed by the person at the time of the cancellation of the authorisation
- conducting an operation (or part of an operation) which was authorised by a cancelled authorisation held by the person.

Note: In this section:

- cancelled authorisation means a civil aviation authorisation that has been cancelled otherwise than on the application or request of the holder of the authorisation
- employ includes engage, whether by contract or other arrangement
- suspended authorisation means a civil aviation authorisation that has been suspended otherwise than on the application or request of the holder of the authorisation
- varied authorisation means a civil aviation authorisation that has been varied otherwise than on the application or request of the holder of the authorisation.

CHAPTER 3
EXPOSITIONS FOR AUSTRALIAN AIR TRANSPORT OPERATORS



3.1 Overview

An Australian air transport operator must have a CASA-approved exposition. This chapter outlines:

- the required content, including key personnel, operations, aircraft, safety, airworthiness, leasing, change management and CASA requirements
- your obligations to provide relevant sections to personnel and ensure compliance to your exposition and the regulations.

3.2 Content of exposition

(119.205)

You must have an exposition which includes:

- your name (including any operating or trading name), contact details, and ABN (if any)
- the address of your operational headquarters
- the main operating bases you fly to
- the facilities you have for your operation
- a description of your organisational structure including a diagram showing formal reporting lines, including key personnel
- if your business is a corporation, a description of the corporate structure
- key personnel information:
  - qualifications, experience and responsibilities
  - name of the person appointed to the position
  - name of each person authorised to carry out the responsibilities when the position holder is absent and a description of how responsibilities will be managed during absences
  - any additional responsibilities and accountabilities of the CEO
- an outline of your air transport operations, including areas of operation and routes
- details of your plans, processes, procedures, programs, and systems for safe operations (for example, safety plans and systems)
- for each aircraft you operate:
  - the type, model, and registration mark of each registered aircraft
  - the type, model, nationality, and registration mark of each foreign registered aircraft
- a description of the arrangements for managing the continuing airworthiness of the aircraft
- a description of leasing or other arrangements for the supply of rotorcraft related to operational control or airworthiness of the rotorcraft
- a description of the process for making changes (change management) including identifying significant and non-significant changes, and how you inform CASA and your personnel
- a description of any additional requirements as approved or requested CASA
- any other matter required under the regulations (see this guide for information regarding your exposition content requirements).

3.3 Complying with the exposition

(119.210, 119.215 and 119.220)

As the operator, you are required to:

- meet the requirements of your exposition
- make your exposition available (or relevant parts of the exposition) to any of your personnel who are subject to a requirement of your exposition. You must do this prior to the person first carrying out any relevant duties
- ensure all personnel who have specific requirements mentioned in your exposition meet those requirements.

You are responsible and accountable for understanding your policies and procedures. If you choose to use a manual or technical writer, it is important you know and understand what is in your manual and ensure it reflects your operations.

CHAPTER 4
KEY PERSONNEL

4.1 Overview

Establishing effective systems and processes is essential for compliance and efficient operations. The operator's exposition must outline procedures ensuring safe and effective management of the operation.

This chapter covers information on key personnel and their training and compliance requirements.

4.2 Organisation and personnel

(119.110)

Your organisational structure must effectively manage your operations taking into consideration the size, nature and complexity of your organisation.

Your key personnel must abide by your exposition, the requirements of the position, and Part 119.

Key personnel are your:

- chief executive officer (CEO) or equivalent title e.g. managing director
- head of flying operations (HOFO)
- head of training and checking (HOTC)
- safety manager (SM).

4.3 Key personnel – additional qualification and experience requirements

(119.165)

CASA may require key personnel to have additional qualifications or experience to those listed in the legislation and may request key personnel to:

- undertake an examination
- be interviewed by CASA
- complete a specific training course.

For this, CASA must consider whether your Australian air transport operations can be safely conducted in accordance with your exposition and relevant legislation by considering:

- the nature and complexity of your operation
- the required leadership, management and standards setting skills
- the person's recent aviation skills
- if the person can exercise the privileges of the required civil aviation authorisations.

4.4 Familiarisation training for key personnel

(119.120)

You must ensure all your key personnel have completed familiarisation training necessary to fulfil the responsibilities of the position prior to commencing any duties. The familiarisation training must be outlined in your exposition. This includes the syllabus of the training conducted and the records of any required assessment.

4.5 When key personnel cannot carry out responsibilities

(119.090 and 119.115)

You must inform CASA if you become aware any of your key personnel cannot carry out, or are unlikely to be able to carry out, the responsibilities of the position for a period of more than 35 days.

You must inform CASA within:

- 24 hours if there is not another person authorised to carry out the responsibilities for all or part of the period of absence
- 3 days if there is another person authorised (an approved alternate) to carry out the responsibilities for all or part of the period of absence.

A new permanent appointment or an acting appointment (for a period greater than 35 days) of any key personnel is a significant change. See section 2.8 of this guide. In this situation, you must apply to CASA for approval of the change within 7 days of the change being made.

The regulations highlight the importance of having additional people approved to act in key personnel positions. This ensures the operational continuity and compliance of your business. The most common alternative key positions are an alternate for the roles of the CEO, head of flying operations, and safety manager.

4.6 Chief executive officer

Minimum experience required

(119.025 and 119.125)

Your CEO must have:

- sufficient relevant experience in organisational, operational, financial and people-management of air operations to capably lead, manage and set standards so you can conduct safe operations in accordance with your exposition and the civil aviation legislation
- a satisfactory record in the conduct or management of air operations.

The CEO sets the tone, vision, standards and culture of the organisation. CASA may grant special consideration to a CEO with other experience.

Responsibilities and accountabilities

(119.130)

The CEO is accountable to you, as the AOC holder and CASA for ensuring the safe conduct of operations in accordance with your exposition and relevant legislation. In particular, the CEO must ensure you:

- have sufficient suitably experienced, qualified and competent personnel
- have a suitable management structure
- are adequately financed and resourced
- comply with civil aviation legislation
- comply with the aviation safety laws of each foreign country (if any) where you conduct Australian air transport operations
- have procedures to ensure all your personnel understand your safety policy
- have an organisational structure that ensures your safety manager is independent and not subject to undue influence
- set and maintain standards for flight and ground operations
- inform CASA of any changes to leasing, financing, or other arrangements for your aircraft that may impact the safe conduct of your air transport operations

- inform CASA of any breach against the law of the country in which the aircraft is registered (if applicable)
- maintain all foreign registered aircraft in accordance with the law of the country in which the aircraft is registered (if applicable)
- establish and regularly review safety performance indicators and targets (if any)
- monitor and constantly improve your exposition
- conduct training and checking of safety-critical personnel who are non-flight crew in accordance with your exposition
- monitor key personnel to ensure they carry out the responsibilities in accordance with civil aviation legislation and your exposition.

4.7 Head of flying operations

Minimum qualifications and experience

(119.135)

Your head of flying operations (HOFO) must:

- hold either:
  - a commercial pilot licence (CPL) (for single pilot operations only) endorsed for the type or classes of aircraft predominantly used by the operation
  - an air transport pilot licence (ATPL) (for any operations) endorsed for the type or classes of aircraft predominantly used by the operation
- have a satisfactory record in the conduct or management of air operations
- have sufficient safety and regulatory knowledge to enable safe operations in accordance with the exposition and relevant legislation
- have at least 500 hours flight time on the type of rotorcraft use in a significant proportion of your air transport operations
- have at least 6 months experience in the conduct or management of the air operations conducted under your AOC or equivalent foreign authorisation.

However, if you have been issued a specific approval from CASA, then the minimum hours of flight time required to be met are as set out in the approval.

Lower experience levels of the head of flying operations can only be granted if this preserves the level of aviation safety with no adverse effect.

The HOFO (or proposed HOFO) may be required by CASA to undertake an assessment to demonstrate the suitability for the role. This may include a flight assessment in an applicable rotorcraft.

Martin Bass

Responsibilities

(119.140)

The HOFO is responsible for safely managing your flying operations, which includes:

- monitoring, maintaining and reporting to the CEO on operational compliance (being the civil aviation legislation and your exposition)
- ensuring flight crews are provided with the necessary information and documentation to fulfil the responsibilities
- allocating and deploying the appropriate rotorcraft and personnel for your air transport operations
- providing a compliant reference library.

4.8 Head of training and checking

Minimum qualifications and experience

(119.036 and 119.145)

You must nominate a person to oversee your training and checking who is a member of your key personnel.

The head of training and checking (HOTC) must:

- hold either:
  - for single pilot operations only: a commercial pilot licence (CPL) or an air transport pilot licence (ATPL) endorsed for the type or classes of aircraft predominantly used by the operation
  - for any operations: an air transport pilot licence (ATPL) endorsed for the type or classes of aircraft predominantly used by the operation
- have a satisfactory record in the conduct or management of air operations
- have sufficient safety and regulatory knowledge to enable safe operations in accordance with your exposition and relevant civil aviation legislation
- have at least 500 hours flight time on the type of rotorcraft use in a significant proportion of your air transport operations
- have at least 6 months experience in the conduct or management of the air operations conducted under your AOC or equivalent foreign authorisation.

However, if you have been issued a specific approval from CASA, then the minimum hours of flight time required to be met are as set out in the approval.

The HOTC (or proposed HOTC) may be required by CASA to undertake an assessment to demonstrate the suitability for the role. This may include a flight assessment in an applicable rotorcraft or flight simulation training device.

Responsibilities

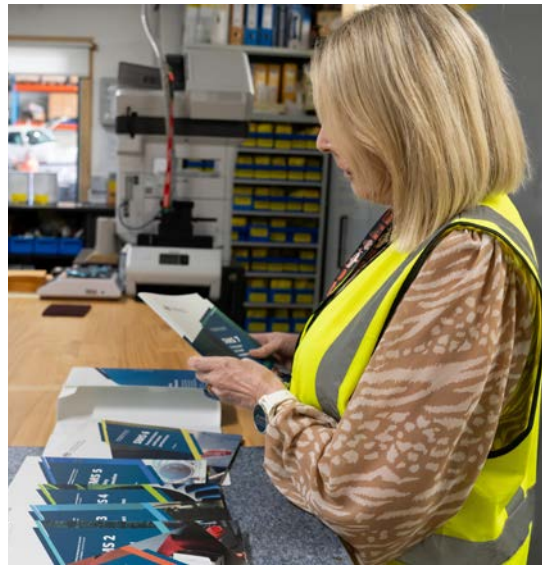
(119.150)

The HOTC reports to the HOFO and is responsible for safely managing the training and checking activities of your flight crew, including:

- ensuring you comply with the relevant civil aviation legislation that relates to the qualifications, training or checking of flight crew
- reporting to the HOFO on your compliance with the provisions of the civil aviation legislation that relate to qualifications, training or checking of flight crew
- ensuring that training and checking of flight crew is conducted in accordance with your exposition.

If you have a contract with a Part 142 training and checking organisation to provide training for flight crew, then you must:

- ensure the contractor is authorised under Part 61 to conduct the activities involved in your required training or checking
- notify the Part 142 operator, in writing, of any change to your exposition relating to the training and checking activities the Part 142 operator conducts.



4.9 Safety manager

Experience

(119.035 and 119.155)

You must nominate a person to oversee your safety management system who is a member of your key personnel.

The safety manager (SM) is responsible for the day-to-day operation of the Safety Management System (SMS) and for ensuring you are kept appropriately informed on safety matters.

They should have:

- sufficient relevant safety management experience to capably lead, manage and set standards to enable you to safely implement your SMS according to your exposition
- a satisfactory record in the conduct or management of air operations
- sufficient safety and regulatory knowledge to enable you to conduct your Australian air transport operations safely and in accordance with your exposition and civil aviation legislation.

CASA EX73/24 – Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2024.
If you are an operator who, prior to 2 December 2021 held an AOC or was applying for an AOC you may not need to nominate a safety manager. Operators should read Part 2 and Part 4 of the exemption in detail to determine if this exemption is applicable to their operations.

Responsibilities

(119.160)

The Safety Manager is responsible for the management of your SMS. These responsibilities must be documented in your exposition and include:

- managing the operation of the SMS including managing corrective, remedial and preventative action in relation to the SMS
- regularly reporting to the CEO on the effectiveness of the SMS
- managing the maintenance and continuous improvement of the SMS and fatigue risk management system (FRMS), if any.

Martin Bass

CHAPTER 5
SAFETY MANAGEMENT

5.1 Overview

An Australian air transport operator must implement a Safety Management System (SMS) tailored to their operations. This chapter outlines:

- the SMS Requirements for Safety policies, risk management, safety assurance, training, and emergency response planning
- the requirements for a Flight Data Analysis Program (FDAP) for certain rotorcraft, ensuring flight data is collected, analysed, and protected to enhance safety.

CASA has developed an SMS kit for aviation. The kit includes downloadable booklets and outlines the structure of an SMS that follows International Civil Aviation Organization's safety management principles. You can adapt the kit to suit your organisation's needs by downloading either the entire kit or its individual booklets.

5.2 Safety management system requirements

(119.190)

Your SMS must consist of the following components and elements:

- a safety policy and objectives including:
  - management commitment to, and responsibility for, safety
  - safety accountabilities of managers (including key personnel)
  - appointment of safety management personnel
  - coordination of an emergency response plan
- SMS documentation
- a safety risk management process including:
  - a hazard identification process
  - a safety risk assessment and mitigation process
- a safety assurance system including processes for:
  - safety performance monitoring and measurement
  - how you manage change (you need to include a process)
  - continuous improvement of your SMS
- a safety training and promotion system including:
  - SMS training and education
  - how the SMS and the outcomes are communicated to personnel
- a flight data analysis program (if applicable).

CASA EX73/24 – Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2024. If you are an operator who, prior to 2 December 2021 held an AOC or was applying for an AOC you may not need a formal safety management system or to submit those documents to CASA. Operators should read Part 2 and Part 4 of the exemption in detail to determine if this exemption is applicable to their operations.

5.3 Flight data analysis program requirements

(119.195)

You must have a flight data analysis program (FDAP) if your rotorcraft type requires a flight data recorder (FDR), (see section 17.7 of this guide) and your rotorcraft has either:

- a maximum take-off weight (MTOW) greater than 7,000 kg
- more than 9 passenger seats.

If you require a FDAP, you or another appropriate provider must provide an FDAP that:

- regularly records and analyses flight data of individual and aggregated operations to improve the safety of flight operations
- protects the identity of the person who is the source of the data, from disclosure to anyone who is not:
  - a person who is required to access and analyse the operations flight data solely for the purpose of the data analysis
  - a pilot you have appointed to liaise with flight crew on matters arising from the FDAP
- ensures no punitive action is taken against the person who provided the data.

If the program is provided by another provider, you are still responsible for ensuring the program's effectiveness.

The identity of the person who provided the data can only be disclosed:

- with the written consent from the person
- if required by CASA
- as otherwise required or authorised by the law.

CHAPTER 6
PERSONNEL RECORDS AND DOCUMENTS

6.1 Overview

This chapter details your obligations for managing and retaining records and covers:

- requests for copies of records by personnel and other operators
- time frames required when providing copies of records
- the retention periods for personnel records.

6.2 Personnel training and checking records

(119.030 and 119.225)

A training and checking record must be completed within 21 days after personnel carry out any training, checking or qualification activity as detailed in figure 1.

The record must include:

- the date the activity was completed, or the qualification or certificate was obtained
- whether the training, check, flight test, flight review or assessment was successful.

If a member of your personnel requests a copy of their personal records, you must provide those records within 7 days of receiving the request.

If another operator requests copies of a training record and the person has given consent for their record to be shared, then you must provide it to the other operator within 7 days of the request.

6.3 Retention periods for personnel records

(119.225, 119.235 and 119.240)

You must retain the required records for personnel as detailed in figure 1.

Figure 1: Retention periods for operator personnel records

Personnel	Required records and retention periods
 **Flight crew**	While the person is employed as a flight crew member: ☑ flight crew licence ☑ medical certificate
	From the time the record is created until 5 years after the person ceases employment: ☑ general emergency training ☑ general emergency check of competency ☑ conversation training (for the operator) ☑ line training ☑ line check ☑ differences training (if required) ☑ recurrent training and checking ☑ remedial training (if required) ☑ training program for a training pilot, check pilot or training and check pilot (if applicable) ☑ pilot in command responsibilities training (if applicable) ☑ flight crew member proficiency check ☑ flight crew member line check
 **Cabin crew**	From the time the record is created until 1 year after the person ceases employment: ☑ general emergency training ☑ general emergency check of competency ☑ conversion training (for the operator) ☑ line training ☑ line check ☑ differences training (if required) ☑ recurrent training and checking ☑ remedial training (if required) ☑ cabin crew member proficiency check ☑ training program for a training cabin crew member, check cabin crew member or training and check cabin crew member (if applicable)

Personnel	Required records and retention periods
 **Air crew member**	From the time the record is created until 5 years after the person ceases employment: ☑ general emergency training ☑ general emergency check of competency ☑ conversion training (for the operator) ☑ line training ☑ line check ☑ differences training (if required) ☑ recurrent training and checking ☑ remedial training (if required) ☑ air crew member proficiency check ☑ training program for a training air crew member, check air crew member or training and check air crew member (if applicable)
 **Medical transport specialist**	From the time the record is created until 1 year after the person ceases employment: ☑ general emergency training ☑ general emergency check of competency ☑ conversion training (for the operator) ☑ line training ☑ line check ☑ differences training (if required) ☑ recurrent training and checking ☑ remedial training (if required) ☑ medical specialist proficiency check ☑ training program for a training medical transport specialist, check medical transport specialist or training and check medical transport specialist (if applicable)
 **Ground support crew**	From the time the record is created until 1 year after the person ceases employment: ☑ training (as required)

6.4 Retention periods for flight-related documents

(119.245 and 119.250)

You must keep the following records for the required period as mentioned in table 2.

Table 2: Retention periods for flight related documents

Kind of record for a flight	Period after the end of the flight
operational flight plan	3 months
authorised weather forecasts	3 months
authorised aeronautical information	3 months
flight technical log	6 months
journey log	6 months
weight and balance documents	3 months
statement about cargo that may require special or unusual handling, for example, dangerous goods	3 months
passenger list	3 months
a notice of action, taken in an emergency by the pilot flying the aeroplane, that involves a contravention of civil aviation legislation	3 months
report of an exceedance of a duty time limit and reduction of a rest period	3 months
record of fuel remaining in fuel tanks at the end of a flight	6 months

A person responsible for continuing airworthiness for a rotorcraft has certain obligations under Part 42 for retaining records in the flight technical log. You should refer to those regulations to ensure compliance.

CHAPTER 7
OPERATIONAL DOCUMENTS

7.1 Overview

This chapter outlines the required documents for your exposition, ensuring compliance with civil aviation legislation for safe rotorcraft operations. It covers:

- the required aviation legislation, guidelines, and safety information for the reference library
- flight manual and minimum equipment list (MEL) compliance
- checklist availability for normal, abnormal, and emergency operations
- document requirements and carriage
- exposition accessibility
- flight preparation
- defect and incident reporting.

7.2 Required material for your reference library

(119.040)

Your reference library may include both hard and electronic copies of documents.

The documents required are:

- civil aviation legislation and parts of the AIP relevant to your operations
- a document or documents equivalent to the AIP (if you conduct operations in one or more foreign countries) for each country in which you conduct operations
- information about the safe operation of each type and model of rotorcraft you operate
- any other publications, information or data specified in your exposition.

7.3 Compliance with the flight manual

(133.030 and MOS 2.02)

You must ensure your aircraft are operated in accordance with the aircraft flight manual's (AFM's) requirements and limitations.

Note: The PIC must operate a rotorcraft in accordance with the AFM unless the requirement or limitation restricts the operation of the rotorcraft inside the rotorcraft's avoid area of the high voltage (HV) envelope.

If there is a conflict between the flight manual and the exposition, the flight manual takes precedence.

Note: Compliance with the flight manual does not apply if the rotorcraft is conducting or being flown in the following prescribed circumstances:

- a medical transport operation (MTO) either:
  - at a medical transport operating site, and the rotorcraft's operator has risk-assessed the operation and found the site to be a suitable place to operate the rotorcraft safely
  - involving an external load operation involving winching a person or load, and the rotorcraft's operator has applied the risk assessment and management processes stated in the operator's exposition to the external load operation
- in performance class 2 with exposure (PC2WE) during the take-off stage, or approach and landing, or baulked landing stage, of a flight.

Winching means the pick-up, or lowering, of an object or person to, or from, the rotorcraft by means of a winch or hoist fitted to the rotorcraft.

A reference to a flight manual includes an AFM or any other document that contains the aircraft's limitations and information for the safe operation of the aircraft, including all amendments and supplements and includes:

- normal, abnormal and emergency procedures for the aircraft
- any operating limitations, instructions, markings and placards relating to the aircraft
- all amendments and supplements to the AFM or other documents required for the safe operation of the aircraft.

The AFM may be referred to as the pilot's operating handbook (POH), owner's handbook, owner's manual or rotorcraft flight manual (RFM).

The flight manual is as important as any other critical part of the aircraft and is a part of the type design.

Note: If a flight manual amendment or flight manual supplement has already been approved by the national aviation authority (NAA) responsible for issuing the type certificate (TC) for an aircraft, there is no requirement for additional approval by CASA.

7.4 Minimum equipment list for certain flights

(133.035)

You are required to develop a minimum equipment list (MEL) for each aeroplane that you operate under the IFR and for which there is a master MEL. The MEL is based on the manufacturer's master minimum equipment list (MMEL) for the rotorcraft. When developing an MEL, consider all items specified by the rotorcraft manufacturer and include all operational requirements relevant to your operations.

You must ensure there is an MEL for each rotorcraft in either or both of the following circumstances:

- an instrument flight rules (IFR) flight
- the flight begins or ends at an aerodrome outside of Australian territory.

Note: The MEL should always remain with the rotorcraft and must be carried on the flight so it can be accessed by the flight crew.

7.5 Checklists

(133.040)

You must ensure normal, abnormal and emergency checklists are available to all crew members before they carry out their duties for the conduct of a flight.

Martin Bass

Explainer: Checklists

Checklist requirements

Checklists should include the procedural steps of the normal, abnormal and emergency procedures from the flight manual. To meet the requirements, you must have processes and instructions published in your exposition for establishing, using and maintaining checklists.

Checklists may be in hard copy or electronic format (sometimes integrated with the flight management system). If electronic, a back-up or hard copy should also be readily available to the crew.

Establishing checklists

Checklists may be externally sourced, such as those produced by aircraft manufacturers. Alternatively, you could produce your own checklists. In all cases, you are responsible for ensuring the checklists meet the requirement of regulation 133.030 and should include in the exposition a process for verifying checklist conformity with the flight manual procedures.

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

The full procedures published in the flight manual, including amplifying content, are sometimes referred to as 'expanded checklists' and should be available to crew for reference and study.

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

You should manage the accessibility of checklists to minimise the risk associated with loose articles jamming controls or falling from the aircraft.

Using checklists

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

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

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

Maintaining checklists

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

A checklist is considered part of your exposition so you should apply your change management process to any changes or amendments.

AC 91–22 Aircraft checklists contain further information on aircraft checklists.

7.6 Electronic documents

(133.045)

Any document required to be carried on a flight may be carried as an electronic copy.

> **Note:** Electronic documents for flights that begin or end outside Australian territory may not comply with the law of a foreign country.

Where electronic documents are stored and/or downloaded from a 'cloud' or any other source, you and the PIC must ensure a copy of the current electronic document is stored on the applicable device. The material must be accessible when the device is in 'flight mode'.

General guidance on electronic certifications, record keeping and management systems is available in AC 11–03 Electronically formatted certifications, records and management systems.

7.7 Availability of parts of your exposition

(133.050)

All parts of your exposition relevant to a crew member for a flight must be made available to the crew member before the flight begins.

This includes any part that is:

- relevant to the duties of the crew member for the flight
- required for the conduct of the flight.

You should encourage all crew to regularly refresh and review their knowledge of your exposition. Make sure the exposition is accessible, especially during flight planning and preparation.

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7.8 Carrying documents

(133.055, 133.060, 133.065 and MOS 3.01)

Both you and the PIC must ensure all the required documents are carried on the rotorcraft for a flight. Table 3 lists the required documents.

Table 3: Carriage of documents

Document **Note:** See details below this table for more information.	**VFR flights within 50 NM of the departure aerodrome** * may be carried on the flight OR available immediately before the flight.	**All flights greater than 50 NM from the departure aerodrome**	**VFR flights at night**	**IFR flights**	**All flights partly or wholly outside Australian Territory**
aircraft flight manual	✔	✔	✔	✔	✔
either: › the flight technical log › the maintenance release for the rotorcraft if Part 42 does not apply to the rotorcraft	✔	✔	✔	✔	✔
minimum equipment list (if any)				✔	✔
operational flight plan (if applicable)		✔	✔	✔	✔
the journey log for the flight	✔	✔	✔	✔	✔
for each flight crew member: › a medical certificate (if required) › a commercial or air transport pilot licence or a certificate of validation (as is applicable) › passport or a photographic ID issued by a commonwealth, state or territory authority or agency	✔	✔	✔	✔	✔
authorised aeronautical information for the flight which can include scale maps and aeronautical charts for the route showing: › certified and non-controlled aerodromes › the lateral and vertical limits of controlled airspace, and prohibited, restricted or danger areas › topographical information to enable navigation to a suitable landing area	✔	✔	✔	✔	✔
flight notification (as required by Part 91)	✔*	✔	✔	✔	✔
weight and balance documents for the flight	✔*	✔	✔	✔	✔
NOTAMS for the flight	✔*	✔	✔	✔	✔
aeronautical information service (AIS) briefing documents for the flight	✔*	✔	✔	✔	✔

Document **Note:** See details below this table for more information.	**VFR flights within 50 NM of the departure aerodrome** * may be carried on the flight OR available immediately before the flight.	**All flights greater than 50 NM from the departure aerodrome**	**VFR flights at night**	**IFR flights**	**All flights partly or wholly outside Australian Territory**
authorised weather forecasts for: › the planned route of the flight › the planned area of operation for the flight › the destination alternate aerodrome if one is required	✔*	✔	✔	✔	✔
if there is a person on board who may require special consideration, a statement identifying the person and the nature of the special consideration	✔*	✔	✔	✔	✔
forms for reporting as required by the safety management system	✔*	✔	✔	✔	✔
operating instructions for computerised navigation equipment (if fitted)	✔*	✔	✔	✔	✔
certificate of airworthiness					✔
certificate of registration					✔
radio licence copy (if any)					✔
passenger list containing the details described in section 2.2 of this guide					✔
cargo manifest for flights carrying cargo (other than passenger baggage)					✔
a certified true copy of the operator's Australian air transport AOC a copy of the operations specifications issued to the operator specific to the operator's Australian air transport AOC					✔
any other document required by a foreign country					✔

Note: An alternative document to the aircraft flight manual may be carried if the document contains the relevant airworthiness standards that are normally found in the aircraft flight manual. This alternative document must be carried onboard the aircraft in place of the aircraft flight manual and must not contain information that alters or conflicts with information contained in the aircraft fight manual.

Note: An alternative checklist (for normal, abnormal and emergency procedures) to the checklists in the aircraft flight manual may be carried as an alternative to the aircraft flight manual checklists. The alternative checklists must be carried onboard the aircraft in place of the aircraft flight manual and must not contain information that alters or conflicts with information contained in the aircraft fight manual.

Note: The cargo manifest must include a detailed declaration of the cargo carried and a statement as to whether any cargo requires special or unusual handling.

The above requirements for flights operating partly outside Australia do not apply to a flight that:

- begins at a helideck outside Australian territory and ends in Australia and the flight is not part of a multi-flight journey that begins or ends at an aerodrome outside Australian territory
- begins in Australia and ends at a helideck outside of Australian territory and the flight is not part of a multi-flight journey that begins or ends at an aerodrome outside Australian territory.

Note: If for any reason the flight crew member cannot carry their medical certificate and/or flight crew licence on the flight, they must give CASA written notice either:

- before the fight begins
- within 24 hours if not practicable to do so before the flight.

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

Note: You may substitute the aircraft flight manual (or sections of the aircraft flight manual) or checklists with an equivalent document (for example, the exposition) if:

- it is carried on the flight
- does not contradict the source documents.

Photographic ID can be an Australian driver licence, aviation security identification card (ASIC) or aviation identification (AVID).

Any document can be carried in electronic format if it is readily available when required (see section 7.6 of this guide).

7.9 Journey logs

(133.075)

You are required to have procedures detailing when the PIC must have completed the journey log for the flight, and the how this shall be achieved. The PIC is responsible for ensuring the required information is recorded when required.

You must also ensure that the journey log has a place for the PIC to verify the entries for the flight.

Note: You are not required to have a separate document specifically named 'journey log' if the required information detailed in this section is recorded and accessible, when required, elsewhere.

The journey log must contain:

- at the pre-flight stage:
  - the rotorcraft's registration mark
  - the flight number (if any)
  - the date of the flight
  - for each crew member, their name (or other identifier) and assigned duties
  - the place of departure
  - the time the flight begins
  - the amount of fuel added to the rotorcraft's fuel tanks before the flight begins (if any)
  - the amount of fuel added in the rotorcraft's fuel tanks before the flight begins
  - the total amount of fuel in the rotorcraft's fuel tanks when the flight begins
- post flight:
  - the place of arrival
  - the time the fight ends
  - the duration of the flight
  - the amount of fuel in the fuel tanks when the flight ends
  - any incidents or observations relevant of the flight.

Note: Due to the urgent nature of some medical transport flights pre-flight entries in the journey log (or its equivalent documentation) might not be possible before the flight begins. It is therefore permitted for the flight to begin without completing the required information in the journey log if the flight is a medical transport operation and:

- the flight is of an urgent nature
- the PIC is satisfied, when the flight begins, that failure to complete any or all the information in the journey log will not affect the safety of the aeroplane
- the information is recorded in the journey log as soon as practicable after the flight ends.


Martin Bass

You must also ensure the journey log has a place for the PIC to verify the entries for the flight.

The journey log must be completed as soon as practicable after the end of the flight, but prior to the next flight of the rotorcraft.

Note: Pre-flight entries in the journey log (or its equivalent documentation) for the departure time of the flight are not required if it is completed as soon as practicable after the end of the flight, but prior to the next flight of the rotorcraft.

Note: Post-flight entries in the journey log (or its equivalent documentation) for the place of arrival and any incidents or observations relevant to the flight are not required if they are completed as soon as practicable after the end of the flight, but prior to the next flight of the rotorcraft.

7.10 Keeping and updating documents

(133.070, 133.075 and MOS 3.03)

These requirements apply to passenger air transport operations for multi-flight journeys where the passenger manifest requires updating, and it is not practicable to keep a copy of the updated document on the ground.

You may conduct a series of flights away from the company administrative base involving changes in the passengers who are aboard. For these situations, your exposition must contain procedures to ensure that updated information continues to be recorded and accessible to your nominated person on the ground. These procedures must include:

- the method to ensure updated information continues to be recorded and is accessible to a person on the ground
- the procedures and circumstances in which a person on the ground may provide the information contained in the documents to another person.

The information can be updated by physical completion, or by electronic transmission for example, email, radio or datalink.

7.11 Passenger lists

(133.080)

A passenger list is required for every passenger transport operation. This list must include the following information unless it is available in another readily accessible document or system:

- the registration mark of the rotorcraft
- flight number (if any)
- the date and estimated departure time of the flight
- the names of all passengers, noting the places where they are scheduled to embark and disembark
- the total number of infants carried.

Note: You are not required to have a separate document specifically named 'passenger list' or 'passenger manifest' if the required information detailed in this section is recorded and accessible, when required, elsewhere.

Medical transport operations are not required, by this section, to prepare a passenger list. However, for flights that begin or end outside Australian territory a passenger list must be carried.

7.12 Flight preparation forms for flights outside Australian territory

(133.085)

Before a flight begins or ends outside Australian territory, the PIC must sign a flight preparation form confirming that:

- the rotorcraft is being operated according to its configuration deviation list (if applicable)
- the crew has received all relevant parts of the exposition related to the flight and their duties before departure
- the flight can be conducted in compliance with the requirements and limitations outlined in the exposition
- the flight meets the requirements for the carriage of documents as set out in the regulations
- all necessary equipment required is either installed or carried onboard, as is applicable (see chapter 13 of this guide), and is either:
  - operative
  - inoperative, and permitted to be inoperative for the flight
- during take-off, en route, and landing, the performance capabilities meet the necessary requirements for the expected conditions
- the weight and balance remains within the allowable limits for the entire flight.

Helidecks on vessels or installations that are not in Australian territory or in a foreign country do not trigger these requirements.

7.13 Reporting and recording defects and incidents

Procedures for reporting and recording defects

(133.090 and 133.095)

Your exposition must include procedures for reporting and recording any of the following that occur during a flight:

- abnormal instrument indications
- abnormal flight conditions
- abnormal behaviour by the rotorcraft
- exceedance of an operating limit specified in the aircraft flight manual or POH
- defects in the rotorcraft.

It is the applicable crew member's responsibility to make the report.

Martin Bass

CHAPTER 8
OPERATIONAL PROCEDURES

8.1 Overview

This chapter defines operational procedural requirements and includes information on:

- flight preparation and planning
- personal electronic devices (PED)
- guidelines for transporting animals, including safety and compliance
- safety measures required for medical transport involving winching
- protocols for cold weather operations and managing icing conditions
- information about search and rescue, emergency, and survival equipment
- crew responsibilities for safe operations
- ground support personnel competency
- crew briefing and station authorisation.

8.2 Operational control and procedures

(133.125)

Your exposition must include procedures for determining how operational control is exercised and by whom. For example, operational control responsibilities may change under flight test or examination conditions, and during winching operations.

Operational control is defined as having authority over starting, continuing, changing or ending a flight to ensure the safety of the aircraft and the efficiency of the operation. Under almost all circumstances, operational control rests with the PIC.

8.3 Flight preparation and planning requirements

(133.130)

Your exposition must include procedures for complying with flight preparation, such as weather assessments and alternate aerodrome requirements.

8.4 Flight planning – operational flight plans

(133.135, MOS 4.01 and 4.02)

You and the PIC must create a flight plan for all flights that:

- are flown under instrument flight rules (IFR)
- are flown under visual flight rules (VFR) at night
- are flown more than 50 NM from the departure aerodrome.

The flight plan must consider:

- the safety of the rotorcraft and the people on board
- the rotorcraft's performance
- the expected operating limitations and conditions for the flight
- the weather conditions for the flight.

The flight plan must include:

- the rotorcraft's registration mark
- the flight number (if there is one)
- the date of the flight
- the name or identification of the departure aerodrome
- the name or identification of the planned destination aerodrome
- whether the flight is VFR flight at night, IFR, or both
- the amount of fuel required and the actual amount of fuel on board (refer to chapter 12 of this guide for more specific information regarding this requirement)
- the route of the flight, including waypoints, distances and tracks.
- for night VFR or IFR flights, the Lowest Safe Altitudes (LSALTs) for each route segment
- the planned cruising speed and flying times between waypoints
- the planned altitudes or flight levels for each flight segment.

After the flight, the PIC must ensure the flight log shows:

- the estimated time flown over waypoints required to be reported to Air Traffic Services (ATS)
- fuel calculations (see chapter 12 of this guide)
- the final landing aerodrome.

You and the PIC must ensure this information is recorded in the operational flight plan before the flight ends or as soon as possible afterwards.

A journey log, as described in section 7.9 of this guide, can be used to meet these recording requirements.

Destination alternate details

If a destination alternate aerodrome is required, it must be included in the flight plan and the route required. If details of a destination alternate aerodrome cannot be added to a flight plan due to last-minute changes, procedures must be in place for you to notify the PIC of the details before take-off.

Availability of flight planning information

(133.140)

Before a flight begins the PIC and all personnel involved in planning the flight must have access to the information detailed below.

Throughout the duration of the flight, the PIC and any personnel involved in flight re-planning or operational control must continue to have access to:

- authorised weather forecasts and authorised weather reports in relation to the flight and the destination alternate (if one is required)
- NOTAMs for the flight
- the suitability of the planned departure, destination and alternate aerodromes for take-off or landing.

If an exact landing location is not known during pre-flight planning, there is flexibility to allow the PIC to select a safe landing location upon arrival in the general vicinity of the planned destination.

8.5 Cold weather operations

Polar operations

(133.290)

For operations conducted in a polar region, your exposition must contain procedures for:

- monitoring and dealing with fuel freezing
- ensuring communication capability for the duration of the flight
- training the rotorcraft's flight crew in polar operations
- mitigating crew member and passenger exposure to cosmic radiation during solar flare activity.

For flights in a polar region:

- not flown over water: you must ensure each person on the rotorcraft wears a serviceable, cold weather, anti-exposure suit that is appropriate for the temperatures for the flight
- flown over water: you must ensure each person onboard wears an immersion suit that is appropriate for the temperatures.

Procedures relating to ice

(133.275)

Your exposition must include the following relating to icing:

- procedures for the inspection of the rotorcraft by the PIC before a flight if frost or freezing conditions exist
- procedures for carrying out de-icing and anti-icing measures (if required for the flight)
- procedures for using de-icing and anti-icing equipment (where fitted) during the flight.

8.6 Portable electronic devices

(133.280)

Your exposition must include procedures for the operation of portable electronic devices (PEDs) by both passenger and crew.

A PED is any lightweight, electrically-powered equipment. Examples include laptops, tablets, e-readers, and smart phones and electronic games. Information relating to PEDs should be included in the applicable sections of the exposition, including the following:

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

Training programs should include:

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

All portable electronic flight bags (EFBs) are considered to be PEDs. Electing to use an EFB for operations still requires consideration of Division 91.C.8, which addresses the carriage and use of PEDs in aircraft.

8.7 Carrying animals

(133.285)

Your exposition must include procedures for the carriage of animals for a flight of the rotorcraft.

CASR 91.620 places the responsibility for ensuring the safety of the flight when an animal is carried on an aircraft onto the PIC and the operator. The operator's policy may be to never allow animals to be carried.

You must provide instructions for carrying animals in your exposition, including any limitations or requirements you expect personnel to observe and respect. The PIC must take all reasonable steps to ensure carrying the animal will not adversely affect aviation safety before giving any permission. In general, carrying an animal is no different to carrying cargo. Animals carried in the cabin must not block, impede access to, or escape through, an emergency exit. Refer to AC 91-03 Carriage of assistance animals for detailed guidance on the carriage of assistance animals on aircraft.

8.8 External load operations involving winching a person

General requirements

(133.295 and MOS 5.03)

When conducting an external load operation involving winching a person during a medical transport operation you must ensure:

- the rotorcraft has a performance capability that allows it, with one engine inoperative from 300 ft above the site, to:
  - carry out a positive climb of at least 150 ft per minute at 1,000 ft above the medical transport operating site for the external load operation
  - clear any obstacles in the flight path until it reaches the minimum flight altitude for a point on the route for the flight
- during the flight, the person can only be carried outside the rotorcraft for the minimum time necessary to achieve the operation's objective.

Martin Bass

Risk considerations by the PIC

(133.295 and MOS 5.04)

The PIC must identify and consider the risks associated with this type of operation.

Risks must be considered in the context of the nature, size and complexity of the operation, and reasonably satisfy the PIC that the operation:

- is within the capability of the rotorcraft
- does not involve an unacceptable level of risk.

The process required for the PIC to consider risks is to be specified in your exposition.

Ongoing risk monitoring

(133.295 and MOS 5.05)

As a result of identified risks, the PIC must develop appropriate safe risk strategies.

The PIC must, during the external load operation:

- actively monitor the hazards and risks
- identify:
  - any new operationally relevant information
  - any changed considerations, assessments or circumstances that may arise during the operation
  - any unforeseen matters that may arise during the operation
  - any new, or emerging, hazards and risks relevant to the operation, identified by the pilot in command, or that the pilot in command has been informed of by another crew member for the flight
- liaise with the other crew members to modify if required the safe risk strategies for the operation
- conduct ongoing risk-monitoring to ensure the operation is safe to continue.

Compliance requirements

(133.295 and MOS 5.06)

The external load equipment, fittings, lines, safety harnesses, restraint straps and rescue harnesses must meet the requirements of or be approved under the regulations.

Airworthiness approvals are required for external load equipment. The following equipment has been approved by CASA in accordance with Part 21:

- Yates Air Rescue Vest (ARV) Model 908/908M – Class III victim extrication device – approved for use 19 December 2022.

For more information about the approval of equipment used for carriage of persons external to a rotorcraft refer to AC 21-32.

If you conduct medical transport or search and rescue operations and currently do not have approval for equipment you use, you can seek a permission letter from CASA under an instrument of general application for some additional time.

CASA EX91/24 – Use of Certain External Load Equipment in SAR and Medical Transport Operations – Exemption Instrument 2024 includes details on how to apply for permission.

Exposition requirements

(133.295 and MOS 5.07)

Your exposition must include the following relating to external load operations:

- procedures to ensure the safe conduct of the operation
- the processes to be followed by the PIC in complying with the requirements for the operation detailed in section 8.8 of this guide
- procedures to ensure the flight crew members, air crew members, and any medical transport specialists, for the flight, are familiar with the risks considered, and safe risk strategies developed, for the operation.

8.9 Search and rescue services and emergency and survival equipment information

Information about search and rescue services

(133.100)

You must provide flight crew members with information about search and rescue services before a flight commences.

The ERSA is the primary source of information within the Australian flight information region (FIR).

Outside the Australian FIR, you should refer to the equivalent document from the relevant national aviation or airspace authority. In remote areas, additional details about local services (such as available boats, nearby populated areas, operational unregistered airstrips, and active radio frequencies) may be important.

You should document this information and provide it to the flight crew in a way that is practical and useful for the crew's needs. These documents are considered part of your exposition.

Information about emergency and survival equipment

(133.105 and MOS 3.04)

You must have at minimum, information about the items listed in table 4 available for communication to a rescue coordination centre.

Table 4: Information about emergency and survival equipment

Equipment	Information
a life raft	the number, colour and type
a signalling device	the number, colour and each type
a first-aid kit	details of the emergency medical supplies in the first-aid kit
a survival ELT	the type and frequency of each survival ELT
water supplies carried as an item of survival equipment	details of the water supplies

Note: A survival ELT in table 4 requires you to hold information on the type of each emergency locator transmitter (ELT), it is recommended you describe each type as per the definitions below:

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

Contact telephone numbers for the rescue coordination centre can be found in AIP GEN – Search and Rescue. It is recommended the information be held at a designated place, familiar to relevant personnel, until the completion of the flight.

The carriage and use of life jackets, life rafts and first-aid kits are set out in chapter 17 of this guide.

8.10 Crew activities necessary for safe operation

(133.110)

Only activities necessary for conducting the flight safely are to be performed during take-off, initial climb, final approach or landing.

This does not apply during medical transport flights. A medical transport specialist can provide patient care if the crew member decides it is an essential activity and it does not affect the safety of the aircraft.

8.11 Competence of ground support personnel

(133.115 and 119.170)

Any personnel carrying out ground support duties for a flight must have successfully completed training and been assessed as competent to perform the assigned ground support duties.

Your exposition must include information, procedures and instruction on how the training and checking system will comply with the regulations for ground support personnel.

You do not need to perform the training and assessment. You may contract these activities to another organisation. When doing so you need to be satisfied the training and assessment of ground support personnel is appropriate, and the trainees are competent to conduct the duties.

If you engage the services of a contracted training provider, you must maintain auditable records of:

- the person contracted
- the training/checking activities covered by the contract
- how you ensure the contractor is complying with your training and checking system.

Your exposition must describe how you will ensure the contractor is providing the required services and how the training/checking is confirmed to be meeting the required elements.

CASA EX68/24 – Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2024.
This exemption applies to rotorcraft operations with either or both:

- a maximum take-off weight of more than 3,175 kg
- more than 9 passenger seats.

You are exempt from the requirements in this section for certain operational safety-critical personnel provided you have a training and checking system that explains:

- how you ensure exempted personnel are competent in their duties and do not pose a risk to aviation safety
- how you will take immediate action if someone loses competence or becomes a safety risk.

This exemption does not apply to flight and cabin crew or other crew members with duties directly relate to flying or aircraft safety. Consider reviewing sections 14 and 15 of the exemption.

8.12 Crew station authorisation and briefing

(133.120)

Crew stations (crew seats) may only be occupied during a flight by:

- flight crew members assigned by you
- other crew members if authorised by you and the PIC to occupy the crew station
- an authorised officer who is carrying out an audit, check, examination, inspection or test.

A non-crew member may occupy a crew station provided they are permitted in your exposition to do so and have been briefed by the PIC on the relevant safety procedures.

Martin Bass


EXTERNAL
POWER

CHAPTER 9
FLIGHT PREPARATION

9.1 Overview

This chapter discusses flight preparation, planning and availability requirements for rotorcraft and covers the details required for:

› alternate aerodromes

› fuel considerations when diverting.

9.2 Flight preparation requirements

(133.130)

Your exposition must include procedures for complying with flight preparation (weather assessments and alternate aerodrome) requirements.

You must tailor your exposition procedures to suit your individual circumstances and to meet the requirements of the regulations regarding safety briefings, instructions, demonstrations and NVIS flights.

The procedures contained within the exposition should require the PIC to follow a flight preparation process that includes obtaining and interpreting weather forecasts using this data to determine fuel and alternate requirements. This process should outline to flight crew your recommended methods of obtaining, using and updating this information.

In larger or more complex operations, these duties may be delegated to other personnel. They would follow a standardised procedure written in your exposition to provide the flight crew with an operational plan after assessing the weather and alternate requirements. In this case, the exposition would need a procedure for the PIC to verify that the preparation met regulatory requirements.

9.3 Flight planning

Operational flight plans

(133.135 and MOS 4.01)

This section discusses flight planning for the following types of flights:

› an IFR (Instrument Flight Rules) flight

› a VFR (Visual Flight Rules) flight at night

› a flight where the rotorcraft will travel more than 50 NM from the departure airport.

The flight plan must be prepared, considering:

› the safety of the rotorcraft and the people on board

› the performance of the rotorcraft

› the expected operating limitations and conditions for the flight

› the weather conditions for the flight.

The flight plan must contain:

› the rotorcraft's registration mark, and flight number (if any)

› the date of the flight and name or identification of the departure aerodrome, and planned destination aerodrome

› whether the flight is planned, either in whole or part, to be a VFR flight at night, an IFR flight or both

› the amount of fuel required to be carried on board for the flight and the actual amount carried for the planned route, refer to section 7.4 in this guide:

  » the route and route segments of the flight, including waypoints, distances and tracks

  » for a VFR flight at night or IFR flight, the published or calculated lowest safe altitude (LSALT) (whichever is applicable), for each route segment

  » the planned cruising speed and flying times between waypoints

  » the planned altitudes or flight levels for each segment.

9.4 Destination alternate details

(MOS 4.01)

If a destination alternate aerodrome is required, the operational flight plan must include details of the destination alternate aerodrome, and the routes or route segments required to reach it. However, this does not apply if:

- there is a last-minute change:
  - to the destination alternate aerodrome required for the flight or
  - requiring a destination alternate aerodrome to be planned for the flight
- it is not reasonably practicable to update the flight plan to include either or both
- in the case where the information identifying the destination alternate aerodrome is not included, your exposition must contain procedures to ensure the PIC is notified of the destination alternate aerodrome details before departure.

You and the PIC must ensure the information prescribed above is recorded in the operational flight plan before the flight ends or as soon as practicable after it ends.

As soon as practicable after the flight, the PIC must also ensure the flight log shows:

- the estimated time the rotorcraft flew over waypoints that were required to be reported to ATS
- fuel calculations made in compliance with the fuel requirements (see chapter 12 of this guide)
- the aerodrome of final landing for the flight.

A journey log as described in section 7.9 of this guide is an example of an acceptable means to comply with these requirements.

9.5 Availability of flight planning information

(133.140)

You must make flight planning information available, before and during the flight, to the PIC and any person whose responsibilities include flight planning, inflight replanning or operational control.

This may include access to a dedicated flight planning facility, or making use of suitable electronic equipment such as laptops, tablets and electronic flight bags (EFBs).

Your exposition should contain specific procedures for personnel on accessing and using flight planning information when flight planning at:

- your base of operations
- all satellite locations
- ad-hoc facilities.

> **Note:** If international operations are conducted, the procedures must include how flight planning information is accessed when operating at the international locations.

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

The following relevant information is required to be accessible:

- authorised weather forecasts and authorised weather reports for:
  - the flight
  - a destination alternate aerodrome (if required)
- NOTAMs
- the suitability for a take-off or landing for:
  - the departure and planned destination aerodrome
  - a destination alternate aerodrome (if required).

> **Note:** Once the flight begins, the flight can continue to another suitable aerodrome without the required information concerning the suitability of the destination aerodrome if:
>
> - when the flight begins, the rotorcraft is carrying sufficient fuel to allow the flight to continue to another aerodrome known to be suitable for safe landing if the rotorcraft cannot land at the planned destination aerodrome
> - before starting an approach to land at the planned destination aerodrome, the PIC determines that the planned destination aerodrome is suitable to land at.
>
> See chapter 10 (aerodromes) of this guide.

This flexibility might be especially useful if your operations include conducting a flight to a remote or other sparsely populated area where the exact landing location is not known in advance but selected upon arrival in the area.

The requirements of this section are relevant only to the pre-flight planning phase. Once a flight begins, the PIC is able to change the planned destination to a different location, provided the new location is also safe to land at, the route is safe to divert along and the aircraft continues to have enough fuel to reach that location with minimum fuel reserves left intact.

Explainer: Fuel considerations when diverting

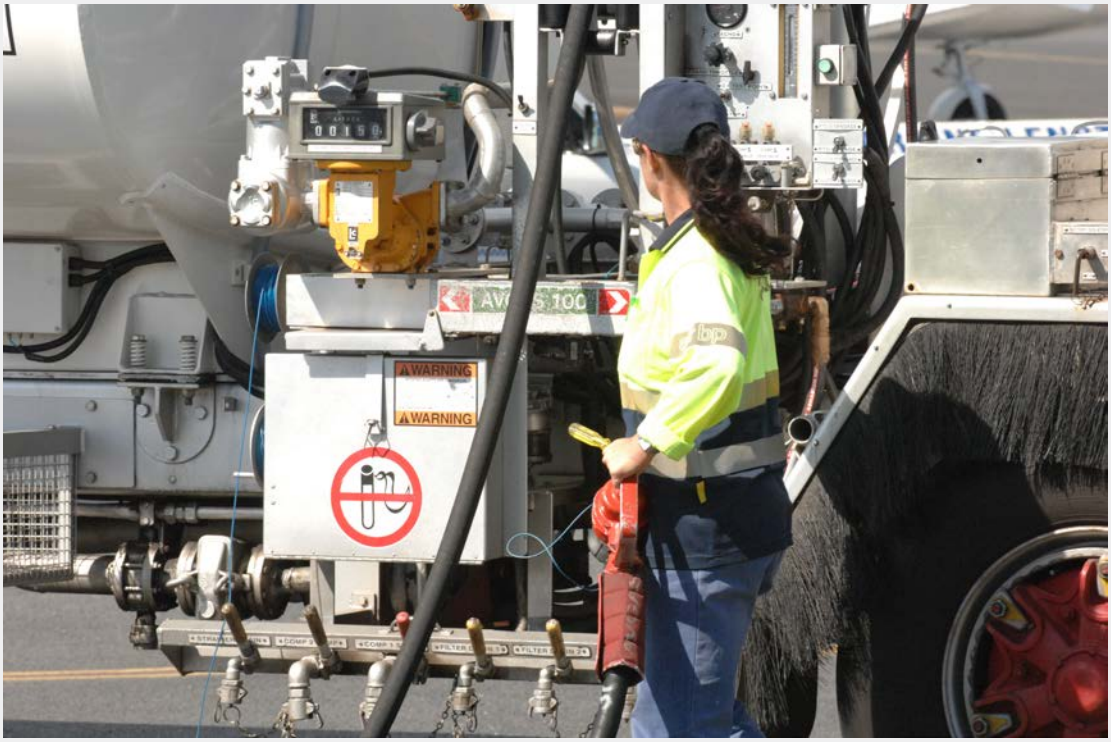
This example illustrates what to consider when diverting.

The aircraft departs from the base with the plan to not refuel before arriving back at the base. The base is therefore the final planned destination for fuel and pre-flight planning purposes. However, the operational plan for the flight is to stop at several places (the accident site to pick up the patient via a winch retrieval and then the hospital heliport to drop off the patient) before landing back at the base.

The winch retrieval occurs in a medical transport operation operating site using your risk assessment and management processes and winching standard operating procedures (SOP). The weather and alternate requirements are covered by a return to base if needed.

The hospital arrival and departure are conducted in performance class 2 with exposure (PC2WE), using your PC2WE risk assessment procedures for the heliport and the crew using your PC2WE SOPs. The weather and alternate requirements are again covered by a return to base if needed with an associated ground transport plan for the patient.

If things change during the flight (for example more fuel may have been used positioning and conducting the winch), then the final destination can be altered in-flight. This is provided the aircraft still has sufficient fuel onboard to safely land at the alternative final location with minimum required fuel reserves remaining. Consideration would need to be given to the weather for the route or area of operations and at the expected new destination aerodrome, and any alternate aerodrome requirements which may be applicable.



CHAPTER 10
AERODROMES

10.1 Overview

This chapter provides information and details on the:

- procedures required to determine information about aerodromes
- safety procedure requirements when operating at an aerodrome.

10.2 Determining information about aerodromes

(133.170)

Your exposition must include procedures for determining and using the information listed below for all departure, destination and (if required) alternate destination aerodromes:

- final approach and take-off area dimensions, directions, slopes, surface types and ground or water types for the aerodrome
- touch down and lift-off area dimensions, limitations and location
- the location of taxiways and turning nodes (if any)
- the aerodrome's elevation
- the location of the aerodrome reference point (if any)
- the location of the aerodrome's windsocks (if any)
- any aids to navigation and communication facilities available at the aerodrome
- any limitations on the use of the aerodrome
- any special procedures in use at the aerodrome, in flight or on the ground or water
- a contact person capable of providing information about the condition of the aerodrome
- any special procedures and restrictions you require the flight crew to use at the aerodrome, including:
  - engine failure procedures
  - obstacle clearance procedures.

Aerodrome information for certified, registered and military aerodromes is published in the ERSA and Jeppesen Airways Manual, with updates provided via NOTAMs. Other aerodromes, such as aircraft landing areas (ALAs) or certain helicopter landing sites (HLS), are uncertified and may have little or no information published. These aerodromes may not be subject to regular inspection or notifications by NOTAM. In some cases, you may require permission from the owner or occupier of the area prior to use.

CASA recommends you compile an HLS register and include this required information in your exposition.

10.3 Safety at aerodromes

(133.175)

Your exposition must include procedures when the rotorcraft is being operated at an aerodrome that include:

- the safety of persons in the vicinity of the rotorcraft when any of the following circumstances apply:
  - embarking and/or disembarking people from the rotorcraft
  - loading or unloading the aircraft
  - operating the rotorcraft at an aerodrome
- the minimum distance required to ensure the safety of a person, animal or thing:
  - when on the ground and the rotorcraft's rotors are turning
  - within the movement area while the rotorcraft is landing or taking off and any hazard created by the downwash from the rotorcraft
  - due to hazards created by the rotorcraft downwash.

CHAPTER 11
FLIGHT RULES

11.1 Overview

This chapter covers details regarding:

- take-off and landing minima
- flights to/from foreign countries that do not use ICAO procedures
- authorised instrument approach procedures not listed in the AIP
- exposition requirements for low-visibility operations
- IFR flights without destination alternate aerodromes
- minimum height rules for medical transport operations.

11.2 Take-off and landing minima

(133.145)

Your exposition must include procedures for determining take-off and landing minima for IFR flights.

For take-off:

- the take-off minima must not be less than those prescribed for the aerodrome
- the take-off minima must be sufficient to enable the PIC to control the rotorcraft, in an emergency, preventing any undue hazard to a person on the ground or water under the flight path
- for a multi engine rotorcraft:
  - » flown in performance class 1: the take-off minima must be sufficient to enable the PIC to reject or continue a take-off safely if one engine fails
  - » flown in performance class 2: the take-off minima must be sufficient to enable the PIC to:
    - manoeuvre the rotorcraft safely to reach a suitable forced landing area
    - continue a take-off if one engine fails after the defined point after take-off
  - » flown in performance class 2 with exposure: the take-off minima must be sufficient to enable the PIC to continue a take-off if one engine fails after the defined point after take-off.

For landing:

- the landing minima must not be less than the landing minima prescribed for the aerodrome, including for an approach with visual circling
- for IFR flights to or from an aerodrome with an approach involving visual circling, your exposition must include procedures for determining the landing minima.

11.3 Flights to or from foreign countries that do not use ICAO procedures

(133.150)

Before you permit operations that are IFR flight in IMC in a country not aligning with ICAO Document 8168 (PANS OPS):

- your exposition must contain the departure and approach procedures published by the national aviation authority of the country
- each pilot assigned to the flight must have successfully completed training in the country's instrument approach and departure procedures.

> **Note:** The flight must be conducted in accordance with the instrument approach and departure procedures contain in your exposition.

11.4 Authorised instrument approach procedures not published in the AIP

(133.155)

If your operations include instrument approach procedures that are not published in the AIP, they must be included in your exposition.

Part 173 of CASR allows organisations to develop their own instrument approach procedures or have them developed by an authorised or certified Part 173 design organisation.

11.5 Exposition requirements for low-visibility operations

(133.160)

Low-visibility operations are:

› a low-visibility take-off (LVTO) – a take-off with a runway visual range of less than 550 m

› an approach using minima less than the category (CAT) I minima published in the AIP for the runway in use.

For low-visibility operations, your exposition must include:

› the type of low-visibility operation that may be conducted

› the aircraft systems required

› the aerodrome facilities required

› the training and qualifications required by the flight crew members

› the requirements to be met by the flight crew members during the operation.

If you do not intend to conduct low-visibility operations, this should be clearly stated in your exposition.

11.6 IFR flights planned without destination alternate aerodromes

(133.165)

This section applies to an IFR flight where the operational flight plan does not include a destination alternate at the time of the flight.

If the PIC receives, in flight, an authorised weather forecast and because of that forecast a destination alternate is now required then a reachable alternate destination must be declared and flown to, unless:

› the revised weather information is received less than thirty minutes before arrival at the planned destination

› the weather at the planned destination is still above the landing minima, even though it is below the alternate minima requirements.

Flight to an alternate destination is not required if the rotorcraft carries sufficient fuel to hold near the destination until 30 minutes after the forecast visibility and cloud-base are expected to be at or above the landing minima.

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11.7 Minimum height rules for medical transport operations

(133.167 and MOS 5.10)

For medical transport flights flown under the IFR, or at night under the VFR, the normal minimum height requirements described in CASR Part 91 (91.277 and 91.305) do not apply, provided:

- the rotorcraft is operated in visual meteorological criteria (VMC)
- if conditions below VMC are encountered, the rotorcraft immediately commences a climb to resume operations above the minimum height
- before descent, the PIC is satisfied the area is clear of obstructions and obstacles that might endanger it
- other than at a medical transport operating site, the rotorcraft is operated in performance class 2 with exposure or a higher performance class
- at a medical transport operating site:
  - you ensure that risk consideration, monitoring, and management procedures for such operations are stated in your exposition
  - you and the PIC follow the procedures
- only essential crew, medical patients or medical personnel are carried below the minimum height, and then only:
  - for the time necessary for the rotorcraft to descend below, or climb away from below, the minimum height to embark or disembark, the patient or person
  - for medical reasons if the PIC is satisfied it is operationally safe to do so
- flight below the minimum height:
  - is essential for the operation
  - minimises the time the rotorcraft is unable to achieve a suitable forced landing, or safe continuation of flight, if an engine failure occurs
  - shall not create a hazard to persons (not involved in the operation)
- for night operations, the flight is conducted in accordance with the requirements in section 14.6 of this guide.

See section 23.4 of this guide for minimum height under the NVFR or the IFR for medical transport operations using NVIS.

Regulations 91.277 gives the minimum height requirements for VFR flights. 91.305 gives the minimum height requirements for IFR flights. See the Part 91 plain English guide for general operating and flight rules.

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11.8 Flights over populous areas or public gatherings for medical transport operations

(MOS 5.11 and 5.12)

For medical transport flights flown over a populous area or public gathering, the normal minimum height requirements described in CASR Part 91 (91.265) do not apply, provided:

- you conduct a pre-flight risk assessment, or, for an urgent medical transport operation, an in-flight risk assessment. The risk assessment must be appropriate to the nature, size and complexity of the operation. It must also confirm the flight can be conducted safely and is within the capability of your operation
- the flight is conducted in VMC. If the flight is at night, the PIC must safely use NVIS, provided they are qualified
- the rotorcraft does not create a hazard to a person, or property, on the ground or water under the rotorcraft's flight path in the event of an engine failure or other emergency
- the rotorcraft is flown in performance class 2 with exposure or a higher performance class, other than at a medical transport operating site
- if the flight includes winching a person or load during a medical transport operation, and the rotorcraft cannot meet certain performance standards, it only flies over areas where it can safely land in an emergency without endangering people or property below.

For medical transport flights not flown over a populous area or public gathering, the normal minimum height requirements described in CASR Part 91 (91.267) do not apply, provided:

- you conduct a pre-flight risk assessment, or, for an urgent medical transport operation, an in-flight risk assessment. The risk assessment must be appropriate to the nature, size and complexity of the operation. It must also confirm the flight can be conducted safely and is within the capability of your operation
- the rotorcraft does not create a hazard to a person, or property, on the ground or water under the rotorcraft's flight path in the event of an engine failure or other emergency.

Regulations 91.265 gives the minimum height requirements over populous areas and 91.267 gives the minimum height requirements for other areas. See the Part 91 plain English guide for general operating and flight rules.

CHAPTER 12
FUEL AND OIL REQUIREMENTS

12.1 Overview

This chapter contains details on fuel and oil requirements for flight planning purposes and includes:

- determining the oil quantity for a flight
- fuel management procedures to complete a flight safely
- the fuel required before, during and after the flight
- emergency fuel state situations
- fuelling safety procedures.

12.2 Oil requirements

(133.185)

You and the PIC must ensure there is enough oil on board for the planned flight. In determining the quantity required, consideration should include items such as:

- the length of the intended flight
- historical oil consumption data for all rotorcraft equipment including engines and/or auxiliary power units (APU) (if fitted)
- the method of recording both the consumption and the last level checked
- the number of flights required before a re-supply of oil is required/obtainable
- procedures for and ability to carry or obtain oil for multi-sector flights.

The PIC must know how much oil is on board and be able to estimate oil consumption based on expected flight time and known or published oil consumption rates.

For multi-stage flights it may be necessary to plan an oil uplift between stages.

12.3 Fuel procedures

(133.180)

Your exposition must include fuel management procedures to ensure there is sufficient fuel onboard to complete the flight safely. The PIC is responsible for monitoring fuel usage and determining there is sufficient usable fuel remaining at any time during flight.

12.4 Fuel requirements

(133.190, MOS 6.01, 6.03, 6.04 and 6.05)

Your exposition must contain procedures to ensure that before a flight begins the PIC has the amount of usable fuel required for the flight on board the rotorcraft.

You and the PIC are responsible for ensuring that prior to any flight, the amount of usable fuel is determined and recorded on the appropriate documentation. Table 5 details the minimum usable fuel required to be on board a rotorcraft for a flight.

Table 5: Usable fuel to be carried on board for a flight

	When a flight commences	At any point of in-flight replanning	At any time to continue the flight safely	If diverting to the planned alternate (unable to land at the planned destination)
taxi fuel	✔			
trip fuel	✔			
trip fuel from that point		✔		
trip fuel from that time			✔	
destination alternate fuel (if required)	✔	✔	✔	
destination alternate fuel from that time				✔
holding fuel (if required)	✔	✔	✔	✔
contingency fuel	✔	✔		
final reserve fuel (see table 6 of this guide)	✔	✔	✔	✔
additional fuel, if applicable	✔	✔	✔	

Note: Any deviation from the planned fuel usage will require in-flight fuel replanning.

During a flight, the PIC must perform regular in-flight fuel checks, and at each check:

- determine the amount of usable fuel remaining
- compare planned fuel consumption with actual fuel consumption
- if you have specified a point of in-flight replanning and the flight has not proceeded past that point, determine whether the remaining usable fuel is sufficient to meet:
  - the remaining trip, contingency, holding, alternate and additional fuel requirements
  - if no point of in-flight fuel replanning has been specified (or the point has been passed), then as above, but without the contingency fuel requirement
- determine the amount of usable fuel expected to be remaining when the rotorcraft lands at the destination aerodrome.

Table 6: Final reserve fuel requirements

Kind of flight	Speed	Height above aerodrome elevation in ISA conditions	Final reserve fuel flight time
IFR flight	the holding speed for the rotorcraft	1,500 ft	30 minutes
VFR flight	the range speed for the rotorcraft	1,500 ft	20 minutes
VFR flight by day	the range speed for the rotorcraft	1,500 ft	20 minutes
VFR flight by night	the range speed for the rotorcraft	1,500 ft	30 minutes

Explainer: Fuel data and operational conditions

Fuel consumption data

When determining the quantity of usable fuel required for a flight, you and PIC must each use the following fuel consumption data sources:

- the most recent rotorcraft-specific fuel consumption data derived from your fuel consumption monitoring system, if available
- the manufacturer's data for the rotorcraft.

The rotorcraft manufacturer's data may include electronic flight planning data. The manufacturer's data may be in the flight manual, cruise performance manuals or other publications.

Operational conditions

In determining the quantity of usable fuel required, you, and PIC must each consider the effect of the operating conditions for the proposed flight, including the following:

- the actual (if known or available), or anticipated, weight of the rotorcraft
- relevant NOTAMs
- relevant meteorological reports and forecasts
- relevant ATS procedures, restrictions and anticipated delays
- the effects of deferred maintenance items and configuration deviations
- the potential for deviations from the planned flight because of unforeseen factors.

12.5 Monitoring fuel before and during flight

(133.180 and MOS 6.05)

Before the flight you and the PIC must check how much usable fuel is on board, record the amount and ensure it is enough to conduct the flight safely.

During the flight the PIC must ensure regular fuel checks are conducted to confirm there is enough fuel to complete the flight.

When conducting in flight fuel checks the PIC must:

- check how much usable fuel remains
- compare the actual fuel usage to the planned fuel usage
- confirm there is enough fuel left to meet safety requirements if the flight diverts to an alternate aerodrome
- estimate how much fuel will be left by the time the rotorcraft lands.

Your exposition must include procedures that explain how and when the pre, during and post flight fuel checks are performed.

12.6 Procedures if the fuel for a destination aerodrome is below minimum requirements

(MOS 6.06)

At all times in flight, the fuel required on landing at a destination aerodrome must be no less than the usable fuel for:

- trip fuel from that time
- destination alternate fuel, if required
- holding fuel, if required
- final reserve fuel
- additional fuel, if applicable.

If at any time the PIC becomes aware the amount of fuel would be less than the above amounts, the PIC must:

- consider the traffic and operational conditions expected on arrival at:
  - the destination aerodrome
  - the destination alternate aerodrome (if required for the flight)
  - any en route alternate aerodrome
- proceed to any of the above aerodromes that enables the PIC to continue to meet the minimum fuel requirements of this section of the guide.

The PIC must request from ATS the duration of any likely delay in landing if unforeseen factors could result in the rotorcraft landing at the destination aerodrome with less than the minimum required fuel for:

- final reserve fuel
- destination alternate fuel (if required).

12.7 Declaring a minimum fuel state

(MOS 6.06)

Minimum fuel state

The PIC must declare to ATS a minimum fuel state if:

- the rotorcraft is to be landed in a minimum fuel state
- it is calculated that if there is any change to the existing ATC clearance issued to the rotorcraft in relation to that aerodrome, the rotorcraft will land with less than the final reserve fuel remaining.

Note: The declaration of 'minimum fuel' informs ATS that all planned aerodrome options have been reduced to a specific aerodrome (the intended landing aerodrome) and any change to the existing clearance may result in landing with less than final reserve fuel. This is not an emergency situation, but an indication that an emergency situation is possible should any additional delay happen.

Note: The PIC should not expect any form of priority handling because of a 'minimum fuel' declaration. ATS will, however, advise the flight crew of any additional expected delays, and coordinate when transferring control of the rotorcraft to ensure other ATS units are aware of the flight's fuel state.

Emergency fuel state

If the PIC becomes aware the amount of usable fuel remaining on landing at the nearest aerodrome (where a safe landing can be made) would be less than the final reserve fuel, the PIC must declare a situation of emergency fuel by broadcasting 'MAYDAY, MAYDAY, MAYDAY FUEL'.

Note: The fuel emergency declaration is a distress message.

12.8 Operational variations

(MOS 6.07)

You may use an operational variation for your rotorcraft operations. Your exposition must include the procedures for the use of the operational variation.

The operational variation may relate to the calculation of any of the following:

- taxi fuel
- trip fuel
- contingency fuel
- destination alternate fuel
- additional fuel.

> **Note:** An operational variation cannot relate to the calculation of holding fuel or final reserve fuel.

At least 28 days before first using an operational variation you must submit to CASA the following information:

- evidence of at least one of the following, that demonstrates how the operational variation will maintain, or improve, aviation safety:
  - documented in-service experience
  - the results of a specific safety risk assessment
- details of the operational variation, including procedures in relation to the use of the operational variation, proposed for inclusion in your exposition.

Your safety risk assessment must include at least the following:

- flight fuel calculations
- use of a data-driven method that includes a fuel consumption monitoring program
- the use of sophisticated techniques for determining the suitability of alternate aerodromes
- specific risk-mitigating measures.

12.9 Fuelling safety procedures

(133.195)

Your exposition must include the following:

- procedures to ensure safe refuelling
- procedures relating to the safety of passengers who are embarking or disembarking, or on-board during fuelling. These include the normal, emergency and communication procedures to be followed by:
  - any crew members, other than flight crew members
  - any flight crew members who are on duty in the cockpit
  - any of your personnel who carry out a ground support duty for the flight
- if you permit a person to operate low-risk electronic devices inside the cabin while the rotorcraft is being fuelled:
  - a statement that radio frequency emissions from those devices will not affect systems on the rotorcraft
  - procedures to ensure that any effects of radio frequency emissions from those devices have been corrected before an engine is started.

CHAPTER 13
PASSENGER TRANSPORT AND MEDICAL TRANSPORT

13.1 Overview

(133.200)

This chapter applies to both passenger and medical transport operations and details the requirements for:

- carrying passengers and restricted persons
- carry-on baggage restrictions and stowage procedures
- the safety briefing instruction and demonstrations before and during flight
- emergency briefings.

13.2 Simulation of emergency or abnormal situations

(133.205)

You must not simulate abnormal or emergency situations during passenger or medical transport flights.

13.3 Carrying restricted persons

(133.210)

Your exposition must state whether you permit carrying restricted persons.

Restricted persons are:

- deportees
- removees
- persons in custody.

If your exposition states you permit carrying restricted persons, then it must also have procedures for:

- carrying a restricted person on a rotorcraft
- informing each crew member of the carriage of a restricted person.

13.4 Carry-on baggage

(133.215)

Your exposition must contain procedures for:

- determining the maximum weight and size of carry-on baggage that can be taken on the rotorcraft
- determining where carry-on baggage can be securely stowed
- giving instructions to passengers about securely stowing carry-on baggage:
  - before take-off
  - before landing
  - at any other time the PIC directs.

Note: This regulation does not apply to medical transport flights.

13.5 Obstructing emergency exits

(133.220)

The PIC must ensure emergency exits are not obstructed.

Note: A passenger sitting next to an emergency exit is not deemed to be an obstruction.

Note: For medical transport flights, stretchers installed in accordance with a supplemental type certificate (STC) are not deemed to be an obstruction.

13.6 Passengers in seats adjacent to emergency exits

(133.225)

The PIC must be satisfied each person sitting adjacent to an emergency exit:

- can operate the exit and agrees to assist the crew in an emergency evacuation, or
- is accompanied or assisted by a person who can access and operate the exit and has agreed to assist the crew with an emergency evacuation.

Note: This regulation does not apply to medical transport flights.

13.7 Carrying passengers with reduced mobility

(133.230)

The carriage of reduced-mobility passengers requires procedures to be included in your exposition. There must also be procedures for informing the crew that a passenger with reduced mobility is to be carried.

The PIC must ensure passengers with reduced mobility occupy seats such that they do not:

- hinder crew members in the performance of safety-related duties
- obstruct emergency exits
- hinder emergency evacuation.

13.8 Safety briefing cards

(133.235 and MOS 7.01)

Safety briefing cards must be available for each passenger at the beginning of a flight. They must contain the following information and instructions:

- how to use and adjust seatbelts (other than extension belts)
- when to adjust the back of adjustable seats to an upright position, or other position permitted by the aircraft flight manual
- when tray tables, footrests or any other seat attachments must be stowed
- when an attachment fixed on an interior cabin structure, which is intended to be used by passengers during flight (for example, a tray table or bassinet) must be stowed
- when and where to stow or secure carry-on baggage and personal effects
- where the emergency exits are located, and how to use them
- the form, function, colour, and location of any escape path lighting system that has been fitted
- how to assume the brace position, including the position for passengers with infants
- the location and method of use of passenger-operated oxygen dispensing systems, if fitted
- the location and use of life jackets and life rafts
- smoking is not permitted during the flight.

Note: This regulation only applies to rotorcraft with two or more passenger seats.

Note: The storage location of infant life jackets does not have to be mentioned on the safety briefing card, but the card must contain instructions on the use.

Note: This regulation does not apply to medical transport flights.


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13.9 Safety briefings, instructions and demonstrations

(133.240, MOS 7.02 and 7.03)

Prior to flight

You and the PIC are responsible for ensuring all passengers other than medical patients on medical transport flights receive a safety briefing prior to boarding or before engines are started.

Safety briefings must include the instructions and demonstrations and include information that is relevant to the safety of the specific flight and the specific aircraft type being flown.

The safety briefing must include:

- when seatbelts must be worn during the flight, and how to use them
- if the rotorcraft's seats are adjustable, when to adjust the back of the seat to an upright position, or other position permitted by the aircraft flight manual
- if the seats have attachments (for example, tray tables or footrests) that are intended to be used by passengers, when the attachment must be in its stowed position
- if there is an attachment permanently fixed on an interior cabin structure (for example, a tray table or bassinet), when the attachment must be in its stowed position
- when and where to stow or secure carry-on baggage and personal effects
- where the emergency exits are located
- if equipped with an escape-path lighting system, where it is
- if equipment to dispense supplemental oxygen, the location of the equipment and how to use it
- if life jackets are required to be carried:
  - where they are located and how to use them, including a demonstration of donning and inflation
  - a warning that life jackets must not be inflated inside the rotorcraft

- if life rafts are required to be carried:
  - where they are located
  - if a life raft is intended to be used by a passenger without instructions at the time of use, how to deploy it
- that smoking is prohibited on board
- that carry-on baggage must be left behind in the event of an emergency evacuation
- the requirement to comply with any safety directions and instructions given by a crew member
- if a safety briefing card is required to be available to each passenger (i.e. if there are two or more passenger seats):
  - where to find it
  - if it sets out different seating configurations for the rotorcraft, which configuration is in use
- if survival equipment relevant to a specific environment is intended to be used by a passenger, the location of the equipment and location of written instructions for its use
- when and how to assume the brace position, including the position for passengers with infants.

Individualised pre-flight briefings prior to flight

The following passengers must be given specific, direct, individual briefings:

- passengers with reduced mobility and an accompanying or assisting persons, who must also be asked by a crew member about the best way to help them in the event of an emergency evacuation. The briefing must be given in a manner suitable for them.
- passengers responsible for infants must be given a briefing about when and how to restrain the infant, and about the location of infant life jackets.
- passengers seated in emergency exit rows.

During flight

a pre-landing briefing must be given to passengers at a time before landing when they could be reasonably expected to remember the instructions for long enough to be useful. The briefing must contain the following instructions:

- seatbelts and restraint systems must be securely fastened for landing
- seat backs must be in the upright position or, for a person who is ill or incapacitated, another position approved by the PIC
- any attachments to a seat, including a tray table or footrest, must be stowed
- any attachment to the interior of the aircraft that is intended to be used or manipulated by passengers (for example, a tray table or bassinet) must be stowed.

13.10 Safety briefing in the event of an emergency

(133.245 and MOS 7.03)

Your exposition must include procedures for briefing passengers, other than medical patients on medical transport flights, during an in-flight emergency.


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TO 88% N2

CHAPTER 14
INSTRUMENTS, INDICATORS, EQUIPMENT AND SYSTEMS

14.1 Overview

This chapter describes the equipment required for passenger and medical transport flights and includes information on:

› weather radars requirements

› enhance vision systems

› survival equipment procedures

› the carriage of lift rafts

› securing moveable equipment.

14.2 Airborne weather radar equipment

(133.250, MOS 11.20 and 11.21)

Airborne weather radar equipment is required for passenger and medical transport flights in rotorcraft with a maximum take-off weight (MTOW) of more than 5,700 kg.

If airborne weather radar equipment is fitted to your rotorcraft, then your exposition must contain procedures for:

› the use of the equipment

› conducting flights without use of the equipment due to the equipment being inoperative.

In rotorcraft that require it, airborne weather radar equipment should be operative at the beginning of a flight.

Airborne weather radar may only be inoperative at the beginning of a flight if no forecast or report indicates potentially hazardous weather conditions along the planned flight path to the destination and alternate (if specified).

Potentially hazardous weather conditions mean conditions that can be detected by airborne weather radar equipment.

Relevant forecasts or reports means any of the following:

› an authorised weather forecast in relation to the flight

› an authorised weather report in relation to the flight.

14.3 Head-up displays, enhanced vision systems and synthetic vision systems

(133.255)

If your operations conducted flights under IFR or VFR at night, your exposition must include detailed procedures for the use of:

› a head up display

› enhanced vision system

› synthetic vision system.

Your exposition must also include procedures for operating the rotorcraft when any of these systems are inoperative to ensure continued safe flight.

14.4 Survival equipment procedures

(133.260)

Your exposition must include procedures for determining the survival equipment requirements for a flight in or through a remote area. Refer to figure 2.

Figure 2: Designated Australian Remote Area Map.

For flights that require the carriage of a life raft (see section 14.5 of this guide), your exposition must include procedures for determining the pyrotechnic signalling devices required to ensure a distress signal can be activated.

14.5 Carrying life rafts

When to carry life rafts

(MOS 11.50)

The carriage of life rafts applies if the flight is a passenger transport operation and during the flight the rotorcraft will be flown over water from a suitable land forced landing area at a distance greater than the distance detailed in table 7. The requirements do not, however, apply to a flight if the rotorcraft:

- has a maximum operational passenger seat configuration of not more than 5
- will be flown less than 10 NM over water from land
- has operational control that would enable, in the event of an emergency, an immediate initiation of a response to the emergency by a search and rescue body.

Table 7: Distance from land for determining the carriage of life rafts

Rotorcraft details	Distance
multi-engine	the shorter of the following: › the distance the rotorcraft would fly in 30 minutes at the planned cruising speed, for the flight, in still air › 50 NM
single-engine rotorcraft with operational control that would enable, in the event of an emergency, an immediate initiation of a response to the emergency by a search and rescue body	25 NM
other single-engine rotorcraft	the distance the rotorcraft would fly in 5 minutes at the normal cruising speed, for the flight, in still air

Life raft requirements

(MOS 11.50)

For a flight in a rotorcraft which requires the carriage of a life raft the requirements of table 8 must be met.

Table 8: Life raft requirements

Number of persons onboard	Requirements
1 to 11 persons onboard	› the rotorcraft must carry at least one life raft that has the capacity to provide a place for each person on board the rotorcraft › each life raft must be equipped with: » a survivor locator light » a survival ELT › each life raft must be stowed in a manner so that it can be readily deployed if the rotorcraft must ditch › if a life raft is stowed in a compartment or container, the compartment or container must be conspicuously marked as containing the life raft
more than 11 persons onboard	› the rotorcraft must carry at least two life rafts that collectively have the capacity to provide a place for each person on board the rotorcraft › there must be a place on a life raft for each person, other than an infant, on board the rotorcraft: » assuming the life raft with the greatest rated-capacity cannot be used » based on the overload capacity of the other life rafts › for a rotorcraft first issued with a certificate of airworthiness on, or after, 1 January 1991: » at least 50% of the life rafts carried on the rotorcraft must be deployable by remote control » if a life raft is not deployable by remote control and weighs more than 40 kg then the life raft must be equipped with a means of mechanically-assisted deployment › each life raft carried on the rotorcraft must be equipped with: » a survivor locator light » a survival ELT › each life raft must be stowed in a manner so that it can be readily deployed if the rotorcraft must ditch › if a life raft is stowed in a compartment or container, the compartment or container must be conspicuously marked as containing the life raft

14.6 Securing moveable equipment

(133.270)

Your exposition must include procedures for when and how to identify and securely stow moveable equipment.

The exposition should detail the items of equipment and stowing procedures for each operational configuration such as take-off, landing or at any other time the PIC directs.

CHAPTER 15
PERFORMANCE

15.1 Overview

Rotorcraft performance rules relate to the ability of an individual aircraft to proceed on a flight path that enables acceptable safety outcomes in the event of an engine failure. The rules require you to develop procedures which demonstrate how you will ensure the safety outcomes during critical phases of flight (particularly during take-off and landing).

The operational condition of a particular flight determines which performance class applies at different stages throughout the flight (take-off, take-off and initial climb, en route, approach and landing and baulked landing). The system requires you to plan for the failure of an engine, whether it's a single engine, or one of the engines on a multi-engine rotorcraft.

Rotorcraft have 3 performance classes defined at certification that is related to single engine performance and how this affects follow-on risks after an engine failure.

Class 1 helicopters have massive reserve power and can continue flight on one engine. They have engines that are way larger than necessary for normal operation and normally operate at a fraction of the rotorcraft's power potential until called upon to do it all. Risks following engine failure are low.

Class 2 helicopters have somewhat less reserve power, and can continue flight temporarily on one engine, but not indefinitely. Risk factors are higher.

Class 3 helicopters have little reserve power and are generally forced down when one engine fails, although at a much gentler descent rate than an autorotation. Risk factors are highest.

With exposure means for a rotorcraft that is flying in still air, it is the period during which the rotorcraft, with one engine inoperative, may not be able to achieve a safe forced landing or continue the flight safely.

The performance class system establishes rotorcraft performance requirements for you as a Part 133 operator, that are scaled based on the following factors:

- the number of passengers
- the type of flight rules or conditions
- whether it's a medical transport flight.

Rotorcraft performance rules improve safety in rotorcraft operations by ensuring you follow standardised procedures to address the critical risk of engine failure.

You do not need to fly in a performance class if you are operating a medical transport operation where:

- the flight is conducted at a medical transport site, and you comply with your documented risk assessment
- the flight is at a stage of take-off, take-off and initial climb, approach and landing, or baulked landing and you hold a specific approval from CASA for the location you are operating at, and the aircraft.

Explainer: Description of a suitable forced landing area

In this chapter a suitable forced landing area means:

- an area of ground where the rotorcraft could make a forced landing with a reasonable expectation there would be no injuries to persons in the rotorcraft or on the ground
- an area of water where the rotorcraft could ditch with a reasonable expectation there would be no injuries to persons in the rotorcraft or in the water. There must also be a reasonable expectation people in the rotorcraft would survive in the water for the time it would take to rescue the persons.

When assessing these reasonable expectations, consider:

- the surface condition of the area of water, including the wave height, wind conditions and swell
- the limits of the capability of the emergency flotation system to stay upright and floating in certain sea states.

Also consider:

- whether the rotorcraft is equipped with emergency flotation equipment or has a type certificate or supplemental type certificate for landing on water
- if the flight is a passenger transport operation or a medical transport operation, the area of water must be either:
  - adjacent to land
  - adjacent to an offshore installation with search and rescue capabilities
  - in a location, set out in your exposition, that has search and rescue capabilities.

15.2 Take-off performance

(133.305 and MOS 10)

The take-off performance requirements for a rotorcraft are for the:

- type of operations to be carried out during the flight
- characteristics of the aerodrome at which the rotorcraft takes off
- characteristics of the route flown by the rotorcraft
- characteristics of the aerodrome at which the rotorcraft lands.

15.3 Landing performance

(133.310 and MOS 10)

The landing performance requirements for a rotorcraft relates to one or more of the following:

- the rotorcraft's configuration
- the operation of any equipment for the flight
- characteristics of the aerodrome at which the rotorcraft lands
- the safety factor percentages to be applied.

15.4 Flight in a performance class

(133.315)

A rotorcraft conducting air transport operations must be flown within one of the performance classes mentioned in section 15.6 of this guide.

Exception: The only general exception is for authorised medical transport operations (MTO) when arriving and departing from a location associated with an accident or incident or when they are conducting winching associated with such operations. This exception is contingent on you having suitable risk-based standard operating procedures for operations into such locations outlined in your exposition.

Performance classes provide higher levels of assurance in safety following an engine failure, compared to operations outside of a performance class.

A key part of this assurance is the knowledge the rotorcraft used in operations meets a specified certification standard. This standard represents:

- redundancy of systems
- quality of manufacture
- availability of performance data for pilots.

Flights must be conducted in a performance class unless:

- the flight is a medical transport operation
- the stage of the flight is conducted at a medical transport operating site
- your exposition includes risk assessment and management procedures that must be complied with if the rotorcraft is not flown in a performance class during such a stage
- the procedures are complied with for the flight.

Table 9 will help you understand which performance class you will need to operate in.

Table 9: Operating in a performance class

Operation	Performance class 1	Performance class 2	Performance class 2 with exposure	Performance class 3
maximum operational seating capacity (MOPSC) > 19 (any flight rules)	allowed	not allowed	not allowed	not allowed
9 < MOPSC ≤ 19	allowed en route (any flight rules)	allowed*	allowed*	not allowed
MOPSC < 10 (VFR by day)	not allowed	not allowed	not allowed	allowed
passenger transport operation	allowed* en route (IFR or night)	allowed*	allowed*	not allowed
medical transport operation	allowed* en route	allowed*	allowed*	not allowed
cargo transport operation	allowed†	allowed†	allowed†	allowed

* PC1, PC2 or PC2WE during the nominated stages of the flight.

† PC1, PC2 or PC2WE remain optional and may be used (any flight rules).

The International Civil Aviation Organization (ICAO) Standards and Recommended Practices (the Chicago Convention), Standards and Recommended Practices (SARPs) for Annex 6, Part III, Section II, 3.1.1, 3.1.2 and 3.1.3 require a state (in our case, Australia) to ensure rotorcraft conducting commercial air transport operations are operated in accordance with a code of performance established by the state of the operator.

The code of performance should consider situations in conditions where the safe continuation of flight is not ensured in the event of a critical engine failure. In doing so, rotorcraft operations must be conducted in a manner that gives appropriate consideration for achieving a safe forced landing.

The SARPs also requires (where a rotorcraft is operated to or from a heliport in a populous area and where suitable forced landing areas are not available), the competent authority of the state in which the heliport is situated to specify the requirements to enable these operations to be conducted in a manner that gives appropriate consideration for the risk associated with an engine failure.

To meet the objectives of Annex 6 to the Chicago Convention – Part III – International Operations – Helicopters, (ICAO Annex 6 Part III) Section II, Chapters 3.1.1, 3.1.2 and 3.1.3, Australia has designed a performance code that utilises the performance class concept and risk assessment and management processes. These are outlined in Part 133 of CASR and the associated Part 133 MOS.

15.5 Flight in performance class 1 or 2, or performance class 2 with exposure for certain rotorcraft

(133.335 and MOS 10.11)

Flight performance in class 1, 2 or class 2 with exposure applies if:

- the rotorcraft has 10 to 19 passenger seats
- the flight is a medical transport operation
- the rotorcraft has 19 or fewer passenger seats, and the flight is:
  - a passenger transport operation
  - conducted under instrument flight rules (IFR) or at night.

Then the following requirements must be met:

- during the take-off, take-off and initial climb, the approach and landing, or baulked landing, stage, the rotorcraft must be flown in performance class 1, 2 or performance class 2 with exposure
- during any other stage of the flight, the rotorcraft must be flown in performance class 1.

This does not apply in relation to the take-off, take-off and initial climb, approach and landing or a bulked landing if:

- the flight is a medical transport operation
- the stage is conducted from or at a place as part of the medical transport operation
- you hold an approval under subregulation 133.015 (see section 1.2 of this guide).

The maximum permitted exposure time determined by CASA is not more than the time, in seconds, stated in your approval for the rotorcraft to be flown during that stage of the flight:

- take-off and take-off and initial climb (the exposure time is measured from the point during the flight where the rotorcraft is no longer able to land in a suitable forced landing area until the rotorcraft's gradient of climb with 1 engine inoperative is equal to the gradient of the obstacle-clear take-off surface)
- approach and landing, or baulked landing (the exposure time for this stage of the flight must be measured from the defined point before landing, until the rotorcraft is able to make a safe landing).

The exposure time, determined by CASA under your approval, will not be more than 36 seconds.

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15.6 Rotorcraft permitted to fly in performance class 1 or 2, or performance class 2 with exposure

(133.320 and MOS 10.08)

A category A rotorcraft must fly in one of the performance classes in table 10.

Table 10: Performance classes

Performance Class	Operation
performance class 1	rotorcraft must be able to either land safely in a designated area if an engine fails during take-off or continue flying to a safe landing spot if an engine fails during flight
performance class 2	rotorcraft must be able to safely continue flying after an engine failure, except if the failure happens just after take-off or right before landing, when a forced landing may be needed
performance class 2 with exposure	as performance class 2, there is no need for a designated forced landing area during take-off and landing within the rotorcraft's exposure period
performance class 3	operating a rotorcraft so that, in the event of critical power-unit failure at any stage of the flight, a forced landing is required

Explainer: What is a Category A rotorcraft

Category A rotorcraft, means a multi engine rotorcraft that is designed with engine and system isolation features and:

- is type certificated for Category A requirements in any of the following:
  - Part 27 of the Federal Aviation Regulations (FARs)
  - Part 29 of the FARs
  - EASA CS-27
  - EASA CS-29
  - an equivalent airworthiness certification code of a contracting state
- capable of operation using take-off and landing data scheduled under a critical engine failure concept. It must ensure an adequately designated ground or water area and adequate performance capability for continued safe flight or safe rejected take-off in the event of engine failure (as mentioned in the rotorcraft's flight manual).

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

15.7 Flight in performance class 1

(133.330, MOS 10.04, 10.33, 10.34, 10.35 and 10.36)

If a rotorcraft has a maximum operational passenger seat configuration of more than 19, it must be flown in flight performance class 1 in accordance with table 11.

Table 11: Performance class 1 requirements

Stage of flight	Provision
take-off	› the take-off weight of the rotorcraft must not exceed the maximum weight, mentioned in the rotorcraft's flight manual, required for the type of take-off procedure to be used to achieve the following rates of climb, with 1 engine inoperative: » 100 ft per minute at 200 ft above the departure aerodrome, for the flight, at vertical take-off speed (VTOSS) for the rotorcraft » 150 ft per minute at 1,000 ft above the departure a › the take-off weight of the rotorcraft must not exceed the flight manual's maximum weight required to ensure: » the rejected take-off distance required – rotorcraft for the take-off does not exceed the rejected take-off distance available – rotorcraft for the take-off and either: » the take-off distance required – rotorcraft does not exceed the take-off distance available – rotorcraft for the take-off » if the take-off distance required – rotorcraft exceeds the take-off distance available for the take-off: – the rotorcraft must be able to clear an obstacle from the take-off decision point, for the take-off, with 1 engine inoperative, by at least 35 ft – if the take-off is from an elevated aerodrome, the rotorcraft must be able to clear the edge of the aerodrome by at least 4.5 m › if an engine becomes inoperative before the take-off decision point for the take-off, the rotorcraft must be able to safely land and stop within the rejected take-off distance available for the take-off › if an engine fails during a backup take-off or lateral transition, the rotorcraft must clear a relevant obstacle by a sufficient vertical margin for the take-off phase › the dimensions of the final approach and take-off area, for the aerodrome, must be at least the larger of the following: » the dimensions of the final approach and take-off area, as mentioned in the rotorcraft's flight manual » 1.5 x D, for the rotorcraft

Stage of flight	Provision
take-off and initial climb	› if an engine becomes inoperative after the take-off decision point, for the take-off, the rotorcraft must be able to achieve the following rates of climb, with 1 engine inoperative: » 100 ft per minute at 200 ft above the departure aerodrome, for the flight, at VTOSS for the rotorcraft » 150 ft per minute at 1,000 ft above the departure aerodrome › if an engine fails after the take-off decision point, the rotorcraft must be able to clear a relevant obstacle by a certain margin from the end of the required take-off distance until reaching the minimum flight altitude for each point in the take-off and initial climb stage: » for a VFR flight – 35 ft » or an IFR flight – the total of: – 35 ft – 0.01 x S, for the point › if a change of direction of more than 15 degrees is required to achieve the above margin, the rotorcraft must be able to clear the relevant obstacle by at least the total of: » the margin » 15 ft **Note:** The rotorcraft may change direction by more than 15 degrees only if it is permitted to do so in its flight manual.
en route	if an engine becomes inoperative during the en route stage of the flight: › the rotorcraft must be able to achieve and maintain a rate of climb of at least 50 ft per minute at the minimum flight altitude for each point in the en route stage of the flight or › the pilot in command is permitted to conduct a drift-down manoeuvre provided: » the flight planning for the flight has considered the effect of wind on the flight path and navigational accuracy for the rotorcraft's track for the drift-down manoeuvre can be maintained: – for an IFR flight, or a VFR flight at night – using navigation aids – for a VFR flight by day – using visual navigation and navigation aids, if any » for VFR flight, VMC must exist **Note:** The rotorcraft must be able to comply with the following requirements for conducting a drift-down manoeuvre: › for an IFR flight and VFR flight at night – the rotorcraft must be able to descend to a height of 1 500 ft above an aerodrome that is suitable for the rotorcraft to land at and fly at a height that ensures that the pilot in command does not contravene any provision of Part 91 of CASR dealing with minimum heights for IFR flights for the rotorcraft's track for the drift-down manoeuvre to the aerodrome › for a VFR flight by day – the rotorcraft must be able to descend to a height of 1 000 ft above an aerodrome that is suitable for the rotorcraft to land at and fly at least 1 000 ft above the highest obstacle on the ground or water within 900 m ahead of, and to either side of, the rotorcraft at each point on the rotorcraft's track for the drift-down manoeuvre to the aerodrome › the rotorcraft must be able to approach and land, or conduct a baulked landing, in accordance with the requirements in this table.

Stage of flight	Provision
approach and landing, or baulked landing	› the landing weight of the rotorcraft must not exceed the maximum weight, mentioned in the rotorcraft's flight manual, required for the type of approach procedure to be used to achieve the following rates of climb with 1 engine inoperative: » 100 ft per minute at 200 ft above the aerodrome » 50 ft per minute at 1,000 ft above the aerodrome › the landing weight of the rotorcraft must not exceed the maximum weight, mentioned in the rotorcraft's flight manual, required for the rotorcraft to safely land and stop with 1 engine inoperative within the landing distance available for a landing of the rotorcraft at the aerodrome › if an engine becomes inoperative before, or at, the landing decision point for the landing, the rotorcraft must be able to either: » safely land and stop within the final approach and take-off area for the aerodrome » conduct a baulked landing and clear a relevant obstacle, if any, under the baulked landing climb flight path by a margin of at least: – for a VFR flight – 35 ft – for an IFR flight – the total of 35 ft and (0.01 x S, for the poi › if a change of direction of more than 15 degrees is required to achieve the margin, the rotorcraft must be able, during the change of direction, to clear the relevant obstacle by at least the total of: » the margin » 15 ft › if an engine becomes inoperative at or after the landing decision point for the landing, the rotorcraft must be able to safely land and stop within the final approach and take-off area for the aerodrome › the dimensions of the final approach and take-off area, for the aerodrome, must be at least the larger of the following: » the dimensions of the final approach and take-off area, as mentioned in the rotorcraft's flight manual » 1.5 x D, for the rotorcraft

Exposition requirements for performance class 1 procedures

(MOS 10.27)

For each stage of flight when the rotorcraft is flown in performance class 1 your exposition must include:

- procedures for the PIC to determine if the rotorcraft's take-off weight is within the limits required to comply with the requirements stated in table 12 – Performance class 1 requirements
- procedures for the PIC to determine:
  - the most suitable flight path and track for take-off
  - the take-off obstacle clearance requirements
  - the take-off decision point
  - the en route obstacle clearance requirements
  - the most suitable flight path and track for the approach and landing, or baulked landing
  - baulked landing obstacle clearance requirements
  - the landing decision point.

15.8 Flight in performance class 2 with exposure

(133.325, MOS 10.06, 10.12, 10.37, 10.38, 10.39 and 10.40)

When a multi-engine rotorcraft is flown in performance class 2 with exposure (PC2WE) you require approval from CASA (see section 15.9) to conduct:

- flights in performance class 2 with exposure (PC2WE)
- medical transport operations at a specific place without operating in a performance class if you hold an approval.

The performance class 2 requirements are detailed in table 12.

Table 12: Performance class 2 requirements

Stage of flight	Provisions
take-off	the take-off weight must not exceed the maximum weight, mentioned in the flight manual, required: › for the type of take-off procedure to be used › to achieve a rate of climb, with 1 engine inoperative, of 150 ft per minute at 1,000 ft above the departure aerodrome for the flight if an engine becomes inoperative before the defined point after take-off, the rotorcraft must be able to do one of the following without creating a hazard to a person under the flight path: › safely continue the climb out › safely land on a suitable forced landing area for the flight

Stage of flight	Provisions

take-off and initial climb	if an engine becomes inoperative at the lower of the following:
	› the defined point after take-off
	› 300 ft above the departure aerodrome for the flight
	the rotorcraft must be able to achieve the rate of climb stated above, and clear a relevant obstacle, if any, under the flight path by a margin of at least:
	› for a VFR flight – 35 ft
	› for an IFR flight – the total of:
	» 35 ft
	» 0.01 x S, for the point
	if a change of direction of more than 15 degrees is required to achieve the margin, the rotorcraft must be able, during the change of direction, to clear the relevant obstacle by at least the total of:
	› the margin
	› 15 ft

en route	if an engine becomes inoperative during that stage of the flight, the same requirements as performance class 1, en route

approach and landing, or baulked landing	the landing weight of must not exceed the maximum weight, mentioned in the flight manual, required:
	› for the type of approach procedure to be used
	› to achieve a rate of climb, with 1 engine inoperative, of 150 ft per minute at 1,000 ft above the landing aerodrome
	› for the rotorcraft to safely land within the landing distance available for a landing of the rotorcraft at the aerodrome
	if an engine becomes inoperative before the defined point before landing, the rotorcraft must be able to:
	› conduct a baulked landing
	› clear a relevant obstacle, if any, under the baulked landing climb flight path by a margin of at least:
	» for a VFR flight – 35 ft
	» for an IFR flight – the total of:
	– 35 ft
	– 0.01 x S, for the point
	if a change of direction of more than 15 degrees is required to achieve the margin, the rotorcraft must be able, during the change of direction, to clear the relevant obstacle by at least the total of:
	› the margin
	› 15 ft
	during the part of the flight after the defined point before landing for the rotorcraft until the point of landing, a suitable forced landing area for the flight must be available to the rotorcraft

Preventative maintenance

(MOS 10.13)

Before the flight, the rotorcraft and its engines must have undergone all recommended or required preventative maintenance actions as specified by the holder of the rotorcraft's type certificate.

Risk assessments

(MOS 10.14)

The rotorcraft must be flown in accordance with:

- your risk assessment procedures for PC2WE
- your operational and airworthiness measures, which are used to mitigate identified risks.

Fight manual and exposition

(MOS 10.15)

The rotorcraft must be flown in accordance with:

- the rotorcraft's flight manual procedures, if any, for PC2WE flights
- the procedures listed in your exposition for PC2WE flights.

Flight crew training and checking requirements

(MOS 10.16)

The rotorcraft may only be flown with flight crew members who have successfully completed all approved flight crew training and competency checking requirements.

Approved flight crew training and competency checking requirements refer to the specific training and competency checks needed for flight crews conducting PC2WE flights with the rotorcraft. These requirements are the basis on which CASA will issue its approval for you to conduct PC2WE flights.

Exposition requirements for performance class 2 procedures

(MOS 10.28)

For each stage of flight (when the rotorcraft is flown in performance class 2 or in performance class 2 with exposure), your exposition must include:

- procedures for the PIC to determine if the rotorcraft's take-off weight is within the limits required to comply with the requirements in table 12 (Performance class 2 requirements)
- procedures for the PIC to identify relevant obstacles prior to flight. The data can be obtained from a pilot survey using your risk-based obstacle survey process. It should include risk control measures for operations beyond the defined point after take-off for:
  - an IFR flight that ensures that no entry into IMC is planned below the LSALT, unless flying in IMC can be carried out safely, using your risk-assessment procedures for obstacle avoidance stated in your exposition, until the rotorcraft reaches the minimum flight altitude for a point on the route for the flight
  - if the flight is conducted as an NVIS flight, that the flight can only be flown at night if the survey for the location was, or has been previously, completed by day
  - the use of maps or visual observation to identify the climb track that provides the shallowest obstacle-free gradient from the final approach and take-off area, for the relevant aerodrome, and from the defined point after take-off
  - the use of maps, or visual observation, to identify the height, distance and gradient of the critical obstacle for the climb
- procedures for a turn if required to align with the one engine inoperative departure track:
  - during daytime in VMC, once the rotorcraft is 200 ft above obstacles
  - at night, provided the flight is an NVIS operation or the rotorcraft has reached 500 ft above obstacles. In either case, the pilot in command must ensure the rotorcraft can safely clear any additional terrain as needed to reach the LSALT

- procedures for the PIC to determine:
  - the most suitable flight path and track for take-off
  - take-off obstacle clearance requirements
  - the defined point after take-off for the rotorcraft
  - en route obstacle clearance requirements
  - the most suitable flight path and track for the approach, landing and baulked landing, if any
  - baulked landing obstacle clearance requirements
  - the defined point before landing
- for a rotorcraft flown in performance class 2 – procedures for the PIC to determine a contingency plan for an engine failure during the take-off, take-off and initial climb, approach and landing, or baulked landing stage, of the flight, including a procedure to identify a suitable forced landing area for the flight:
  - for an engine failure during take-off or landing – before the defined point after take-off or before landing
- for a rotorcraft flown in performance class 2 with exposure:
  - procedures for the take-off, take-off and initial climb, approach and landing, or baulked landing that meet the requirements stated in section 15.5 of this guide
  - your procedure that ensures the rotorcraft is operated within the maximum permitted exposure time, for the rotorcraft, stated in section 15.5 of this guide.

15.9 Approval to conduct PC2WE flights

(MOS 10.18, 10.19, 10.20, 10.21, 10.22, 10.23, 10.24 and 10.25)

You must gain approval from CASA to conduct PC2WE flights. This section explains the information that must be included in your application (see table 13 of this guide).

Table 13: Exposition requirements

Item	Requirements
reliability and sudden power loss	you must provide either: › information about past sudden power losses in similar rotorcraft and engines and proof that similar rotorcraft and engines are already approved for PC2WE flights by CASA or a recognised foreign authority › statistics showing the reliability of similar rotorcraft and engines, indicating that sudden power losses are rare (less than 1 per 100,000 engine hours in the past 5 years) or gradually decreasing (less than 3 per 100,000 engine hours in the past 5 years)
type certificate holder's modification standard	› you must provide a statement from the certificate holder about any modifications made to enhance the rotorcraft and engine reliability › if no such modifications exist, then you must provide a statement confirming that if modifications have been made, proof that the rotorcraft conforms to these modifications
preventative maintenance	you must provide: › details of recommended or required maintenance for the rotorcraft and its engines › evidence that these maintenance actions are included in the rotorcraft's system of maintenance
risk assessment	you must provide: › a statement about the risk assessment procedures for PC2WE flight risks › information about the measures to mitigate identified risks, including flight procedures, crew training, and airworthiness measures › evidence that these measures comply with safety modifications and incident reporting procedures
usage monitoring system	you must provide: › details of your system for recording and storing data related to the rotorcraft's engines and transmission systems › proof that this system is reliable, accurate, comprehensive, and continuously operating unless modified for enhancement
flight manual and exposition	you must provide: › a copy of the rotorcraft's flight manual that includes procedures for PC2WE flights › relevant parts of your exposition that reference these procedures
flight crew training and checking	you must provide: › details of procedures for mandatory training and competency checking of flight crew members performing PC2WE flights › evidence that this training includes techniques to minimize risks during PC2WE flights
incident reporting	you must provide: › details of mandatory procedures for reporting any loss of power control, engine shutdowns, or power unit failures during PC2WE flights › evidence that these procedures are reliable, accurate, comprehensive, and continuous, unless modified for enhancement

15.10 Flight in performance class 3 over populous areas

(133.340, MOS 10.07, 10.26, 10.41, 10.42, 10.43 and 10.44)

You and the PIC when flying over a populous area in performance class 3 must:

- ensure the rotorcraft is flown in such a way as not to create a hazard to people or property
- have a suitable forced landing area available
- ensure the time for flight over the populous area is kept to a minimum if a forced landing area is not available
- have a detection system and a flight deck caution indicator to monitor the main and tail rotor transmission gearboxes
- meet the requirements prescribed in table 14 – Performance class 3 requirements.

Table 14: Performance class 3 requirements

Stage of flight	Provisions
take-off	the take-off weight does not exceed the maximum weight, mentioned in the flight manual, required: › for the type of take-off procedure to be used to: » hover in ground effect, with the rotorcraft's engines operating at the power required for hover in ground effect, in the meteorological conditions existing at the time of take-off » if the rotorcraft cannot hover in ground effect due to the location of, or the terrain at, the departure aerodrome for the flight – hover out of ground effect, with the rotorcraft's engines operating at the power required for hover out of ground effect, in the meteorological conditions existing at the time of take-off » to have enough additional power available for the type of take-off procedure to be used while hovering in ground effect or out of ground effect the rotorcraft must: › remain outside the rotorcraft's avoid area of the HV envelope › if it is necessary for the rotorcraft to enter the rotorcraft's avoid area of the HV envelope to avoid an accident or incident – not remain inside that area for longer than the minimum period necessary to avoid the accident or incident

Stage of flight	Provisions
take-off and initial climb	the rotorcraft must clear an obstacle, if any, under the take-off flight path by at least the adequate vertical margin, for the rotorcraft, for the take-off and initial climb stage of the flight. if: › the rotorcraft is operating over a populous area and the requirements stated in this guide are not met › an engine becomes inoperative › then, until the rotorcraft reaches the minimum safe height for the flight under Part 91 of CASR or the Part 91 Manual of Standards, the rotorcraft must clear an obstacle, if any, under the flight path to a suitable forced landing area for the flight by at least the adequate vertical margin for the rotorcraft for the take-off and initial climb stage of the flight the rotorcraft must: › remain outside the rotorcraft's avoid area of the HV envelope › if it is necessary for the rotorcraft to enter the rotorcraft's avoid area of the HV envelope to avoid an accident or incident – not remain inside that area for longer than the minimum period necessary to avoid the accident or incident
en route	› the weight of the rotorcraft must allow the rotorcraft, with all engines operating, to achieve the minimum flight altitude for each point in the en route stage of the flight › the rotorcraft must be flown in a way that minimises the time during the en route stage of the flight in which a suitable forced landing area, for the flight, is not available
approach and landing, or baulked landing	the landing weight must not exceed the maximum weight, mentioned in the flight manual, required: › for the type of approach procedure to be used › to achieve: » a hover in ground effect, with the rotorcraft's engines operating at the power required for landing » if the rotorcraft cannot achieve a hover in ground effect due to the location of, or the terrain at, the aerodrome – a hover out of ground effect, with all engines operating » to achieve a baulked landing, with all the rotorcraft's engines operating, at any point of the flight path for the approach and landing » to clear an obstacle, if any, by at least the adequate vertical margin, for the rotorcraft, for the approach and landing, or baulked landing stage of the flight if: › the rotorcraft is operating over a populous area and the requirements stated in this guide are not met › an engine becomes inoperative › then, until the rotorcraft reaches a point in the flight from which it may land at an aerodrome with the engine inoperative, the rotorcraft must clear an obstacle, if any, under the flight path to a suitable forced landing area for the flight by at least the adequate vertical margin for the rotorcraft for the approach and landing, or baulked landing stage of the flight the rotorcraft must: › remain outside the rotorcraft's avoid area of the HV envelope › if it is necessary for the rotorcraft to enter the rotorcraft's avoid area of the HV envelope to avoid an accident or incident – not remain inside that area for longer than the minimum period necessary to avoid the accident or incident

Exposition requirements for performance class 3 procedures

(MOS 10.29)

When a rotorcraft is flown in performance class 3, your exposition must include:

- procedures for the PIC to determine whether the rotorcraft's take-off weight is within the limits required to comply with the requirements stated in table 14 – Performance class 3 requirements
- procedures for the PIC to determine:
  - the most suitable flight path and track for take-off
  - take-off obstacle clearance requirements
  - the location of suitable forced landing areas
  - en route obstacle clearance requirements
  - the most suitable flight path and track for the approach and landing, or baulked landing, if any
  - baulked landing obstacle clearance requirements.

If a flight is flown in performance class 3 over a populous area, and a suitable forced landing area is not available your exposition must include:

- the risk assessment and risk management procedures for flights over populous areas
- details of the training for conducted for autorotative descents by the pilots to locations with limited access to a suitable forced landing area.

Refer to AC 133-1 Annex PC3 Sample Exposition Manual.

15.11 General operations procedures

(119.205 and MOS 10.30)

If the rotorcraft's flight manual does not specify the minimum safe distance from objects during a flight, you must document all the safety measures and systems you use to ensure compliance with the regulations. These details must be included in your exposition.

15.12 Preflight performance determination

(MOS 10.31)

Before take-off or landing, the PIC is responsible for ensuring the operation is safe based on:

- aerodrome factors:
  - pressure altitude
  - temperature (from an approved weather report)
  - wind speed and direction (from an authorised weather report)
- calculated values:
  - if headwind > 5 knots: use up to 50% of the headwind for calculations
  - of tailwind is allowed by the flight manual: use at least 150% of the tailwind for calculations
- wind data:
  - wind speed and direction must come from approved weather sources.

15.13 Preflight obstacle identification

(MOS 10.01 and 10.32)

This section is about identifying obstacles (like buildings, trees, or other structures) that are important to consider when planning a flight and applies to rotorcraft under performance class 1, 2, or 2 with exposure) as defined by the rules. It does not apply to:

- rotorcraft taking off or landing at certified or registered aerodromes
- rotorcraft operating within the aerodrome's defined obstacle-protected area.

One of the following must be applied when determining if an obstacle is relevant to the take-off, baulked landing component of the approach and landing, or baulked landing stage of a flight:

- an obstacle is relevant to stage of a flight if:
  - during the stage of the flight, the flight is of the kind mentioned in table 15 – Relevant obstacles and distance requirements
  - the shortest distance between the obstacle and a point on the ground or water below the intended flight path for the flight is not more than the distance mentioned in table 15 – Relevant obstacles and distance requirements
  - the obstacle is not less limiting to the flight than another obstacle along the planned flight path at that stage of the flight
- an obstacle is relevant to the stage of a flight if the shortest distance between the obstacle and a point on the ground or water below the intended flight path for the flight, as determined by the PIC, is not more than one of the following:
  - for a flight by day in which navigational accuracy can be achieved by reference to visual cues during the climb or landing of the rotorcraft (7 x R, for the rotorcraft)
  - for a flight at night in which navigational accuracy can be achieved by reference to visual cues during the climb or landing of the rotorcraft (10 x R), for the rotorcraft
  - for a flight in which navigational accuracy can be achieved by navigation aids (300 m or 900 m for any other flight).

Note: 'R' means the largest radius of the rotorcraft's main rotor disc, as mentioned in the rotorcraft's flight manual.

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Table 15: Relevant obstacles and distance requirements

Kind of Flight	Distance
a VFR flight by day and a flight in VMC up to the transition point for the flight	the total of: › either: » if the rotorcraft's flight manual defines the final approach and take-off area for the rotorcraft – 0.5 of the minimum width of the final approach and take-off area » if the above does not apply then 0.75 x the maximum dimension of the rotorcraft › and the greater of the following: » 0.25 x the maximum dimension of the rotorcraft » 3 m » 0.10 x S, for the point
a VFR flight at night and a flight in VMC up to the transition point for the flight	the total of: › either: » if the rotorcraft's flight manual defines the final approach and take-off area for the rotorcraft – 0.5 of the minimum width of the final approach and take-off area » if the above does not apply – 0.75 x the maximum dimension of the rotorcraft › and the greater of the following: » 0.25 x the maximum dimension of the rotorcraft » 3 m » 0.15 x S, for the point
an IFR flight using precision instrument navigation guidance and a flight in IMC after the transition point for the flight	the total of: › the greater of the following: » 1.5 x the maximum dimension of the rotorcraft » 30 m » 0.10 x S, for the point
an IFR flight using non-precision instrument navigation guidance and a flight in IMC after the transition point for the flight	the total of: › the greater of the following: » 1.5 x the maximum dimension of the rotorcraft » 30 m » 0.15 x S, for the point
an another IFR flight not mentioned above and a flight in IMC after the transition point for the flight not mentioned above	the total of: › the greater of the following: » 1.5 x the maximum dimension of the rotorcraft » 30 m » 0.30 x S, for the point

Kind of Flight	Distance
for a flight involving a backup take-off procedure, or with a lateral transition take-off procedure – the backup take-off procedure, or lateral transition take-off procedure, part of the flight	the total of: › either: » if the rotorcraft's flight manual defines the final approach and take-off area for the rotorcraft – 0.5 of the minimum width of the final approach and take-off area » if the above does not apply – 0.75 x the maximum dimension of the rotorcraft › and the greater of the following: » 0.25 x the maximum dimension of the rotorcraft » 3 m › either: » for a VFR flight by day – 0.10 of the distance travelled from the back of the final approach and take-off area to the take-off decision point for the flight; or » for a VFR flight at night or the visual departure phase of an IFR flight – 0.15 of the distance travelled from the back of the final approach and take-off area to the take-off decision point for the flight

Note: S in the table, for a point in a flight of a rotorcraft, means either:

› for the take-off and initial climb stage of the flight – the horizontal distance the rotorcraft has travelled from the end of the take-off distance available – rotorcraft, for a take-off of the rotorcraft at an aerodrome, to that point

› for the approach and landing, or baulked landing stage of a flight – the horizontal distance the rotorcraft (the relevant rotorcraft) has travelled from the end of the take-off distance available – rotorcraft, for a take-off of a rotorcraft at an aerodrome at which a baulked landing of the relevant rotorcraft is being conducted, to that point.


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CHAPTER 16
WEIGHT AND BALANCE

16.1 Overview

This chapter details the weight and balance requirements for you and the pilot in command (PIC). It describes the information needed in your exposition and covers the procedures and documents required to ensure the rotorcraft is flown within its weight and balance limits.

CASA EX70/24 Part 133 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2024 allows Part 133 operators who conduct a private operation in a rotorcraft to use the procedures in this section for weight and balance instead of the Part 91 weight and balance procedures.

You and the PIC must, when the flight begins or at any time during the flight, ensure the rotorcraft is loaded in accordance with the rotorcraft's weight and balance limits.

16.2 Loading of rotorcraft

(133.345)

You and the PIC must ensure the rotorcraft is flown within prescribed weight and balance limits throughout all stages of the flight.

The default system for weight and balance calculations is the flight manual. If the operator chooses to use a different system, such as a computer program or an application on a handheld device, the system should be approved by a weight control authority. Section 5 of CAO 100.7 sets out requirements for aircraft load data sheets and loading systems. You must not commence a flight unless you have received evidence and taken the necessary actions to ensure compliance with the loading data.

16.3 Procedures for loading rotorcraft etc.

(133.350)

Your exposition must include:

- procedures for loading the rotorcraft for a flight to ensure the rotorcraft is loaded with its weight and balance limits
- procedures for calculating the weights for a flight including:
  - the total weight of the crew members and their carry-on baggage
  - the total weight of the passengers and their carry-on baggage
  - the total weight of the cargo (excluding carry-on baggage)
  - the total weight of usable fuel
- procedures to ensure weight and balance limits are not exceeded in the case of a last-minute change to the rotorcraft's load
- procedures for offloading passengers or cargo if the weight and balance limits are exceeded.

See chapter 13 of this guide for more information regarding carry-on baggage.

Refer to the CASR Part 91 Plain English guide for general operating and flight rules for information regarding authority and responsibilities of PIC.

Refer to Part 92 regarding consignment and carriage of dangerous goods by air.

16.4 Weight and balance documents

(133.355)

The weight and balance documents must include:

- the weight and balance of the rotorcraft
- the name of the person who prepared the weight and balance documents
- confirmation, by the person responsible for planning and supervising the loading of the rotorcraft, that it has been loaded in accordance with:
  - procedures in your exposition for loading
  - the weight and balance documents
  - the PIC or copilot's acceptance of the weight and balance documents
  - any other information to ensure the loading is within weight and balance limits.

CASA EX70/24 Part 133 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2024 allows Part 133 operators who conduct a private operation in a rotorcraft to use the procedures in the exemption for weight and balance instead of the Part 91 weight and balance procedures.

You and the PIC must, when the flight begins or at any time during the flight, ensure the rotorcraft is loaded in accordance with the rotorcraft's weight and balance limits.

Your exposition must include procedures for:

- loading
- weight and balance documents
  - the weight and balance of the rotorcraft and the information used to calculate the weight and balance
  - the name of the person who prepared the weight and balance documents
  - confirmation by the person responsible for planning and supervising the loading of the rotorcraft and that it has been loaded in accordance the procedures set out in your exposition and the weight and balance documents
  - if the person is not the PIC or the copilot confirmation of the acceptance of the weight and balance documents by the pilot in command or the copilot
  - any other information that the PIC needs to ensure that the loading of the rotorcraft is in accordance with the weight and balance limits that rotorcraft.

CHAPTER 17
EQUIPMENT

17.1 Overview

This chapter details the equipment requirements for your rotorcraft and includes:

- the minimum flight instruments needed for flight under day VFR, night VFR and IFR
- communication and recording equipment
- operational equipment
- navigational equipment
- automatic pilot
- warning devices, survival equipment and emergency locator transmitters (ELTs)
- equipment for flights over water and remote areas
- lighting and oxygen systems.

Unless stated otherwise, the requirements in this chapter apply to you as the operator. If there are requirements for the pilot in command (PIC), this will be specified.

CASA EX70/24 Part 133 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2024 allows Part 133 operators who conduct a private operation in a rotorcraft to use the procedures in the exemption for equipment requirements instead of Part 91 equipment requirements. You must ensure that:

- the requirements relating to equipment under the regulations are complied with
- the operator's exposition provides for compliance with the requirements
- the pilot in command and the crew member must each comply with any requirement that are applicable.

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17.2 Requirements relating to equipment

(133.360, 91.935, MOS 11.02, 11.03 and 11.04)

This section sets out:

- the equipment that is fitted to, or carried on, the rotorcraft
- the carrying of equipment
- how the equipment is fitted.

In general, this equipment must be approved under Part 21 of CASR (Certification and airworthiness requirements for aircraft and aircraft parts) unless it is:

- an item of equipment used to display the time
- an independent portable light, for example, a flashlight or torch
- a headset
- a portable megaphone
- a sea anchor and other equipment for mooring
- a first-aid kit, an emergency medical kit or a universal precaution kit
- survival equipment, including signalling equipment.

Unless permitted otherwise but the regulations required equipment must be serviceable for a flight unless the equipment is:

- inoperative because of a defect that has been approved as a permissible unserviceability for the aircraft for the flight
- is fitted, or carried, in accordance with the permissible unserviceability.

Any equipment used in the cockpit must be usable and visible to the pilot's seat. Any emergency equipment required for a flight must be easily accessible for immediate use in the event of an emergency.

Cockpits designed specifically for single pilot operations need to be carefully assessed for adequacy of instrument visibility, interpretation and usability.

Operations with single-pilot cockpits should evaluate the readability of attitude and performance instruments (analogue or electronic flight instrument system (EFIS)) critical for flight path management before using the aircraft for line supervision, training, checking, or testing that involves a second pilot for additional flight path monitoring. If needed, an in-flight assessment should be conducted to ensure the instruments are readable and usable.

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

Before a foreign-registered rotorcraft starts a flight, its required equipment must be approved by the aviation authority of its country of registration.

If equipment is carried on a rotorcraft but not required by this chapter:

- it does not need to meet, or be approved under, Part 21 of CASR
- for a foreign-registered rotorcraft, it does not need approval from the NAA of the rotorcraft's state of registry.
- no information or data from the equipment can be used by the flight crew to comply with civil aviation legislation regarding communications or navigation
- the equipment, whether functional or not, must not affect the airworthiness of the rotorcraft.
- if the equipment is surveillance equipment, it must not adversely affect the safety of other aircraft or interfere with air traffic service functioning.

> **Note:** A minimum equipment list (MEL) (approved under regulation 91.935) allows specified aircraft equipment to be unserviceable within specified limits outlined in this chapter.

An MEL cannot be approved if it allows altitude alerting equipment to be inoperative for longer than specified by the master minimum equipment list (MMEL) or legislation.

17.3 Flight Instruments

(MOS 11.05, 11.06 and 11.07)

A rotorcraft operating under the visual flight rules (VFR) by day/night or the instrument flight rules (IFR) must be fitted with the appropriate equipment that displays the measurement for specific parameters during flight.

Day VFR flights

A rotorcraft operating under the VFR by day must be fitted with the equipment listed in table 16.

Table 16: Day VFR flight instrument fitment

Type of flight	Flight Instruments required
VFR by day (single pilot operation)	equipment for measuring and displaying: › airspeed indicator › pressure altitude indicator › magnetic heading indicator › clock › turn and slip indicator › outside air temperature indicator
VFR by day (two pilot operation)	equipment for measuring and displaying: › 2 x airspeed indicators › 2 x pressure altitude indicators › 2 x turn and slip indicators

The equipment must meet the requirements detailed in table 17.

Table 17: Requirements for flight instruments – VFR flight by day

Flight information	Requirements
pressure altitude	the equipment must: › have an adjustable datum scale calibrated in millibars or hectopascals (hPa) › be calibrated in feet. If the flight is conducted in a foreign country that measures flight levels or altitudes in metres, calibrated in metres or fitted with a conversion placard or device
magnetic heading	the equipment must be: › a direct reading magnetic compass › a remote indicating compass and standby direct reading magnetic compass
time	the equipment must display accurate time in hours, minutes and seconds and be: › fitted to the rotorcraft › worn by, or be immediately accessible to, the pilot for the duration of the flight. **Note:** The equipment should be accurate within plus or minus 30 seconds.

Night VFR flights

A rotorcraft operating under the VFR by night must be fitted with the equipment listed in table 18.

Table 18: Night VFR flight instrument fitment

Type of flight	Flight Instruments required
VFR by night (single pilot operation)	equipment for measuring and displaying: › airspeed indicator › pressure altitude indicator › magnetic heading indicator › clock › turn and slip indicator › outside air temperature indicator › attitude indicator › standby attitude indicator › vertical speed indicator › stabilised heading indicator **Note:** A gyro-magnetic type of remote-indicating compass meets the requirements if it has a primary power supply and alternate power supply. › an indicator that shows the supply of power to gyroscopic instruments, if any, is adequate
VFR by night (two pilot operation)	equipment for measuring and displaying: › 2 x airspeed indicators › 2 x pressure altitude indicators › 2 x turn and slip indicators › 2 x attitude indicators › 2 x vertical speed indicators › 2 x stabilised heading indicators **Note:** A gyro-magnetic type of remote-indicating compass meets the requirements if it has a primary power supply and alternate power supply.

The equipment must meet the requirements detailed in table 19.

Table 19: Requirements for flight instruments – VFR flight at night

Flight information	Requirements
pressure altitude	the equipment must: › have an adjustable datum scale calibrated in millibars or hPa › be calibrated in feet. If the flight is conducted in a foreign country that measures flight levels (FL) or altitudes in metres, calibrated in metres or fitted with a conversion placard or device
magnetic heading	the equipment must be: › a direct reading magnetic compass › a remote indicating compass and a standby direct reading magnetic compass
time	the equipment must display accurate time in hours, minutes and seconds. › the equipment must be: › fitted to the rotorcraft › worn by, or be immediately accessible to, the pilot for the duration of the flight **Note:** The equipment should be accurate within plus or minus 30 seconds.
attitude	the equipment power supply must be independent of the power source for the standby attitude or turn (as applicable) information
standby attitude or turn	the equipment power supply must be independent of the power source for the attitude information
vertical speed	if the rotorcraft is operated to, or from, vessels or platforms at sea at night, or over an area where the rotorcraft's attitude cannot be maintained by use of visual external surface cues, the system must: › be an instantaneous vertical speed indicator (IVSI) › meet performance requirements for acceleration sensitivity equivalent to an IVSI

IFR flights

A rotorcraft operating under the IFR must be fitted with the equipment listed in table 20.

Table 20: IFR flight instrument fitment

Type of flight	Flight Instruments required
IFR (single pilot operations)	equipment for measuring and displaying: › airspeed indicator › pressure altitude indicators › magnetic heading indicator › clock › turn and slip indicator › outside air temperature indicator › attitude indicator › standby attitude indicator › vertical speed indicator › stabilised heading indicator › an indicator that shows the supply of power to gyroscopic instruments, if any, is adequate
IFR (two pilot operations)	equipment for measuring and displaying › 2 x airspeed indicators › 2 x pressure altitude indicators › 2 x turn and slip indicators › 2 x attitude indicators › 2 x vertical speed indicators › 2 x stabilised heading indicators

The equipment must meet the requirements detailed in table 21.

Table 21: Requirements for flight instruments – IFR flight

Flight Information	Requirements
indicated airspeed	the equipment must be capable of being connected to: › an alternate source of static pressure that is selectable by a pilot and includes a selector that can open, or block, the rotorcraft's static source and alternative status source at the same time › a balanced pair of flush static ports › at least 1 unit of equipment for indicated airspeed must include a means of preventing malfunction due to condensation or icing
pressure altitude	the equipment must: › have an adjustable datum scale calibrated in millibars or hPa › be calibrated in feet. If the flight is conducted in a foreign country that measures flight levels or altitudes in metres, calibrated in metres or fitted with a conversion placard or device › the equipment must be capable of being connected to: » an alternate source of static pressure that is selectable by a pilot and includes a selector that can open, or block, the rotorcraft's static source and alternative status source at the same time » a balanced pair of flush static ports
magnetic heading	the system must be: › a direct reading magnetic compass › a remote indicating compass and standby direct reading magnetic compass

Flight Information	Requirements
time	› the equipment must display accurate time in hours, minutes and seconds › the equipment must be: » fitted to the rotorcraft » worn by, or be immediately accessible to, the pilot for the duration of the flight **Note:** The equipment should be accurate within plus or minus 30 seconds.
attitude	the equipment must have an alternate power supply in addition to its primary power supply
vertical speed	the equipment must be capable of being connected to: › an alternate source of static pressure that is selectable by a pilot and includes a selector that can open, or block, the rotorcraft's static source and alternative status source at the same time › a balanced pair of flush static ports › the equipment must: » be an instantaneous vertical speed indicator (IVSI) » meet performance requirements for acceleration sensitivity equivalent to an IVSI
stabilised heading	the equipment must have an alternate power supply in addition to its primary power supply **Note:** A gyro-magnetic type of remote-indicating compass meets this requirement if it has a primary power supply and alternate power supply.
standby attitude	the system must: › have a source of power independent of the electrical generating system › operate independently of other attitude systems › continue to operate, without any action by a flight crew member, for a period of 30 minutes following the failure of the electrical power generating system

A stabilised heading flight instrument is required to be fitted to rotorcraft conducting IFR and night VFR flights.

Acceptable in-cockpit sources of stabilised heading flight information are either:

› an analogue (gyroscopic) directional indicator (DI) or horizontal situation indicator (his) gauge

› an equivalent electronic HSI display or the HSI component of an integrated EFIS/ primary flight display PFD.

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

› a stand-alone approval as an HSI instrument, whether original equipment manufacturer (OEM)-installed or retrofitted, under an appropriate TSO (e.g. TSO-C5f for a non-magnetic HSI)

› approved under the TC (type certificate) of the OEM (which would require a demonstration of performance equivalent to the TSO standard) – most commonly the case for integrated flight deck systems in larger transport category aircraft

› approved, as a retrofitted instrument, under an STC with an associated AML (approved model list) – for example, newer electronic 'multi-function' instruments in HSI mode which would have required a demonstration of compliance (by the equipment manufacturer to the certifying NAA) to the equivalent HSI performance standard.

17.4 Operational equipment

This section details the requirements for operational equipment for radiocommunication systems, navigation equipment, autopilots and survival equipment.

Radiocommunication systems

(MOS 11.08)

A rotorcraft must be fitted with one radiocommunication system, capable of continuous communication on all frequencies necessary to meet reporting, broadcast and listening-watch requirements.

For a flight in any class of airspace, it must be fitted with at least 2 independent radiocommunication systems:

- each capable, under normal operating conditions, of communicating with an appropriate ground station from any point on the route, including in the event of any diversion
- each capable of receiving meteorological information at any time during the flight
- at least one of which must have two-way voice communication capability
- at least one of which must provide for communication on the aeronautical emergency frequency 121.5 MHz.

For a VFR flight by day, the rotorcraft must be fitted with the following radiocommunication systems:

- at least 1 VHF radiocommunication system
- if an additional radiocommunication system is fitted, it must only be used for communications with ATS, you (the rotorcraft's operator), or a person nominated by the you during flight. This usage applies when VHF communications with ATS are not available
- if a flight crew member is required to wear a headset (see section 17.8 of this guide), the flight crew member must use the headset as the primary device to communicate with ATS
- if a VHF radiocommunication system does not allow for continuous communication with ATS at all stages of the flight:
  - an additional radiocommunication system capable of continuous two-way communications with ATS or you as the rotorcraft's operator
  - an additional radiocommunication system capable of, after activation of the system by a crew member, sending an automatic notification to you, or a person nominated by you, that notifies of an emergency during the flight and includes information about the rotorcraft's general location.

Note: Notification may involve relaying signals from the radiocommunication system through various technologies, such as satellite or mobile phone networks.

If a high frequency (HF) radio is fitted (for example, in geographical areas where a very high frequency (VHF) radio cannot ensure the required communications), then the radio must:

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

If VHF radio communication is not possible during emergency or abnormal operations, using a SATCOM telephone (installed according to Part 21 of CASR) is acceptable, provided that:

- routes are chosen to ensure the expected time beyond VHF coverage, in an emergency or abnormal situation, does not surpass 30 minutes
- appropriate checks have been incorporated into the pre-flight check list and form part of the company's operating procedures
- the system is equipped with an external antenna and operated via a common VHF headset/microphone
- SATCOM telephone transmissions will be recorded by the cockpit voice recorder
- the system is inter-operable with existing NAV systems
- power can be removed from the system
- defect reports will be issued and dispatched as for other COM systems
- the system has been incorporated in the minimum equipment list (if there is one).

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

Navigation equipment

(MOS 11.09)

This section outlines the navigation equipment requirements to ensure that if any equipment fails, enough equipment is available to navigate as planned.

The MOS requires rotorcraft have enough navigation equipment so that if any part fails during a flight, the remaining equipment can still follow the flight plan. This is to ensure adequate redundancy in navigation equipment during air transport.

Many modern GNSS units also include a VHF navigation aid function. However, this single unit does not count as two separate navigation devices. Another separate unit is needed to control the VHF navigation aids instead of relying on the GNSS head unit.

If a GNSS unit fails in flight, but all other equipment required by Chapter 11 of the MOS is operational as per section 11.04, the failure is considered unintentional. Therefore, the pilot and operator must ensure the flight continues safely, adhering to their obligations to ensure flight safety.

Global Navigation Satellite Systems (GNSS) must be authorised in accordance with:

- ETSO-C129
- ETSO-C145
- ETSO-C146
- ETSO-C196a.

Note: GNSS equipment authorised in accordance with ETSO-C129 is unlikely to support ADS-B position source equipment requirements.

The GNSS must also include a multi-sensor navigation system that:

- includes GNSS and inertial integration
- is approved, under Part 21 of CASR, as providing a level of performance equivalent to a GNSS system mentioned above.

For a night VFR flight, the rotorcraft must be fitted with:

- an approved GNSS
- an automatic direction finder (ADF) or very high frequency (VHF) omnidirectional range (VOR).

For an IFR flight, the rotorcraft must be fitted with:

- 2 approved GNSS
- 1 approved GNSS and either:
  - 1 ADF
  - 1 VOR.

The relevant options must be connected if an approved GNSS unit is provided with automatic barometric aiding options:

- ETSO-C129a
- ETSO-C145a
- ETSO-C146a
- ETSO-C196a.

The navigation equipment must ensure that, if any part fails during a flight, sufficient navigation equipment remains to enable navigation in accordance with:

- the operational flight plan
- the requirements of:
  - ATS
  - the airspace in which the rotorcraft is planned to be flown.

Where a rotorcraft may land in IMC, its equipment must guide it to a point where a safe visual or instrument landing can be made.

An approved GNSS fitted to the rotorcraft must not be one authorised in accordance with ETSO-C129, unless:

- the rotorcraft was manufactured before 6 February 2014
- the GNSS was installed before 6 February 2014.

> **Note:** For an aircraft entering oceanic airspace with RNP 2, RNP 4 or RNP 10 navigation specification capability, refer to subsections 11.03(1B) and (1C) of the Part 91 MOS. The term oceanic airspace is defined in subsection 11.01(2) of the Part 91 MOS.

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Automatic pilot

(MOS 11.10)

A rotorcraft must be fitted with an automatic pilot or automatic stabilisation system when it is:

- an IFR flight
- a VFR flight at night, which is:
  - operated by a single pilot
  - conducted over an area where the attitude cannot be maintained by visual external surface cues provided by lights on the ground, celestial illumination or lighting fitted to the rotorcraft.

If a rotorcraft is operated by 2 pilots for these night VFR flights, then there is no civil aviation legislation requirement for the equipment to be fitted or operative.

Carbon monoxide detectors/warning devices

Crew and passengers in piston engine aircraft risk carbon monoxide (CO) poisoning from cracked exhaust units and faulty heat exchange assemblies. This can be worsened by unsealed penetrations through the firewall and undetected due to inadequate or inappropriate CO detectors. Placards that change colour when exposed to CO may not provide sufficient warning.

Modern devices with audible and improved visual warnings are better for detecting and alerting occupants to elevated CO levels. Although not mandatory, it is strongly recommended that pilots wear personal CO detectors. Affordable small electronic personal devices are available, providing continuous CO monitoring with audible and visual warnings for elevated CO levels.

Airworthiness bulletin 02–064 Preventing Carbon Monoxide Poisoning in Piston Engine Aircraft also contains useful information on this topic.

Survival equipment

(MOS 11.11)

A flight that conducted in an area defined by the Part 91 MOS as a remote area must carry survival equipment. This equipment must be appropriate for sustaining life in the area in the flight will be conducted.

A flight conducted over water where a life raft must be on board must carry the following:

- survival equipment that is appropriate for sustaining life in the area in the flight will be conducted
- signalling equipment (for example, distress signals).

In determining whether Electronic Visual Distress Signals (EVDS) meet the Part 133 MOS, you should consider whether:

- using the EVDS would constitute an offence under section 24 of the Act
- the EVDS meets all relevant safety standards including the requirements within Australian Standard AS 2092–2004 and the International Maritime Organization (IMO) Life Saving Appliance Code
- the light emitted by the EVDS would be recognised and effect an appropriate response in a distress situation, noting that lights of this kind are not internationally approved distress signals.

The use of EVDS is restricted by state and territory legislation (Australian states and territories restrict the types of lasers, including laser pointers and other laser signalling devices that can be lawfully used).

17.5 Lighting systems

This section details the requirements for:

- cockpit and cabin lighting
- anti-collision lights
- landing lights
- navigation lights.

Cockpit and cabin lighting requirements

(MOS 11.12)

A rotorcraft operating at night must be fitted with (or carry, as applicable):

- cockpit lighting that meets the requirements below
- cabin lighting that enables each occupant of the rotorcraft to see and use:
  - the occupant's seatbelt and oxygen facilities (if any)
  - the normal and emergency exits
- an independent portable light from each crew seat for each crew member
- an independent portable light accessible at the crew station for each crew member
- cockpit lighting equipment of a rotorcraft operating at night must:
  - illuminate each item of equipment that may be used by a flight crew member
  - illuminate the documents that may be used by a flight crew member, including checklists and flight documents
  - be compatible with each item of equipment that may be used by a flight crew member
  - be arranged in a way that:
    - enables all placards and instrument markings to be read from each flight crew member's normal sitting position
    - each flight crew member's eyes are shielded from direct and reflected light
    - be adjustable so that the intensity of the lighting can be varied for the light conditions.

If natural light does not sufficiently illuminate the equipment and documents in the cockpit during the day, cockpit lighting equipment must be used. This equipment should illuminate the items and be compatible with each item used by the flight crew.

A torch carried onboard by the flight crew member is considered to constitute 'an independent portable light' provided that the flight crew member has confirmed on the day of the flight that the torch:

- is serviceable
- provides enough light to properly illuminate cockpit controls, switches, and displays for flight crew members to see and operate during normal, abnormal, or emergency situations.

Anti-collision lights

(MOS 11.13)

A rotorcraft must be fitted with anti-collision lights when operating by day or at night.

The anti-collision light equipment must consist of one of the following:

- at least 1 red beacon light
- at least 2 white strobe lights
- a combination of all the lights mentioned above.

The anti-collision light lights must be displayed from immediately before the engines are started until the time the engines are shut down.

For anti-collision light equipment consisting of a combination of red beacon lights and white strobe lights, the lights must be displayed:

- when taxiing and crossing active runways, or final approach and take-off areas for the aerodrome
- from entering the runway, or final approach and take-off area for the aerodrome, until exiting the runway, or the final approach and take-off area.

Note: If the PIC reasonably believes reflection or glare from the anti-collision lights may cause a hazard to an aircraft, then anti-collision lights may be used at the PIC's discretion.

Exemption – Serviceability of anti-collision lighting (CASA EX14/25 – Serviceability of Equipment under the Part 91, 121, 133 and 135 Manuals of Standards – Exemption Instrument 2025)

For a period of no more than 3 days a rotorcraft may operate without operating anti-collision lights provided the following conditions are met:

- the rotorcraft must not be operated at night
- the approved MEL must permit flight with the relevant anti-collision light inoperative and is no less restrictive than the conditions listed here in this guide
- your exposition (or MEL) must include procedures for operations on the ground with anti-collision lights inoperative that include:
  - informing ground crew and maintenance personnel when they may, or may not, approach the rotorcraft
  - the flight crew is responsible for determining that it is safe to start the rotorcraft engines and taxi the rotorcraft
- you have procedures in place to notify all ground handling agents and maintenance personnel that the anti-collision lights are not operating and that alternate procedures apply.

Information on as detailed in this section for ground handling agents and maintenance personnel must be provided at each location of your operation.

Landing lights

(MOS 11.14)

A rotorcraft operating at night must be fitted with at least:

- 2 landing lights
- a single landing light, having 2 independent and separately energised illumination sources.

Navigation lights

(MOS 11.15)

A rotorcraft operating at night must be fitted with navigation lights which must be displayed during a flight or on the movement area of an aerodrome.

17.6 Alerting and warning system requirements

This section details the requirements for altitude alerting equipment and assigned altitude indicators, terrain awareness systems, airborne weather equipment and procedures for inoperative equipment.

Altitude alerting equipment and assigned altitude indicators

(MOS 11.16)

A pressurised rotorcraft must be fitted with altitude alerting equipment.

If the rotorcraft is not pressurised but is an IFR or VFR by night flight, it must be fitted with:

- an assigned altitude indicator
- altitude alerting equipment that:
  - includes an assigned altitude indicator
  - alerts the flight crew if the rotorcraft approaches a preselected altitude
  - alerts the flight crew, including by an aural warning, if the rotorcraft deviates from a preselected altitude.

Rotorcraft flown with inoperative altitude alerting equipment or assigned altitude indicators

(MOS 11.17)

Altitude alerting equipment, or an assigned altitude indicator, fitted to a rotorcraft may be inoperative at the beginning of a flight, but only if the flight begins:

- within 72 hours of the time the equipment or indicator was found to be inoperative
- from an aerodrome at which there is no facility for the equipment or indicator to be repaired or replaced.

Terrain awareness and warning system (TAWS)

(MOS 11.18)

Rotorcraft terrain awareness and warning systems, or HTAWS, only applies to a rotorcraft for an IFR flight.

Approved HTAWS means it is authorised by CASA, or the NAA of a recognised country, in accordance with ETSO-C194.

This applies to an IFR flight that:

- has a maximum operational passenger seat configuration of more than 9
- is conducting a passenger transport operation
- is conducting a medical transport operation.

H-TAWS offer enhanced vertical situational awareness, but nuisance alerts can distract a pilot, leading to a pilot decision to inhibit the system. Inhibiting warning systems and/or ignoring warnings can lead to controlled flight into terrain (CFIT). Operators must ensure pilots are thoroughly trained and familiar with any HTAWS fitted and that pilots and operators carefully consider decisions to inhibit a HTAWS. Operator expositions should include procedures guiding or directing pilots regarding the appropriate use of any HTAWS inhibit switch. From 2 December 2023, a rotorcraft must be fitted with an approved HTAWS.

Flight with inoperative TAWS equipment

(MOS 11.19)

A HTAWS may be inoperative at the beginning of a flight, but only if the flight begins:

- from an aerodrome at which there is no facility for the HTAWS to be repaired or replaced
- within 24 hours of the time the HTAWS was found to be inoperative.

Airborne weather radar equipment

(MOS 11.20)

A rotorcraft must be fitted with airborne weather radar equipment.

This applies for an FR flight which:

- has a maximum take-off weight (MTOW) of more than 5,700 kg
- is a passenger transport operation or medical transport operation.

Flight with inoperative airborne weather radar equipment

(MOS 11.21)

Airborne weather radar can be inoperative at the start of a flight if there are no forecasts or reports of hazardous weather conditions:

- in the flight path along which the rotorcraft will be flown
- if the operational flight plan for the flight includes a destination alternate aerodrome: in the flight path to that aerodrome.

Relevant forecasts or reports are:

- an authorised weather forecast in relation to the flight
- an authorised weather report in relation to the flight.

Note: Potentially hazardous weather conditions means weather conditions detected by airborne weather radar equipment.

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17.7 Flight recorders

This section details definitions for:

- flight recorders
- flight data recording
- cockpit voice recorders
- recorder technical requirements
- requirements for inoperative equipment.

Flight data recorder (FDR)

(MOS 11.23)

One FDR must be fitted to a rotorcraft that has an MTOW of more than 5,700 kg and is:

- turbine-powered
- of a type first certificated in its country of manufacture on, or after, 1 July 1965.

Cockpit voice recorder (CVR)

(MOS 11.24)

One CVR must be fitted to:

- a rotorcraft that has an MTOW of more than 5,700 kg and is:
  - turbine-powered
  - of a type first certificated in its country of manufacture on, or after, 1 July 1965
- a multi-engine turbine-powered rotorcraft that:
  - has an MTOW of 5,700 kg or less
  - is pressurised
  - is type-certificated in its country of manufacture for operation with more than 11 seats, including seats specifically designed for the use of crew members
  - was first issued with a certificate of airworthiness after 1 January 1988.

Combination recorders

(MOS 11.25)

If the rotorcraft must be fitted with both 1 FDR and 1 CVR, the requirements may be met by the fitment of 1 combination recorder.

FDR, CVR and combination recorder technical requirements

(MOS 11.26)

An FDR or combination recorder must comply with:

- the requirements of Civil Aviation Order 103.19
- ETSO-C124a.

> **Note:** These standards include the minimum recording time requirements.

A CVR must comply with one of the following:

- the requirements of Civil Aviation Order 103.20
- ETSO-C123a.

> **Note:** These standards include the minimum recording time requirements.

The operator of a rotorcraft required to be fitted with any of the following must ensure that:

- for an FDR or combination recorder: the recorder retains its last 25 hours of flight data recording
- for a CVR or combination recorder: the recorder retains its last 30 minutes of cockpit voice recording
- for an FDR or combination recorder: the recorder data is preserved from the last 2 occasions on which flight data recording was calibrated to enable the determination of the accuracy of recorded data.

Use of FDR, CVR and combination recorders

(MOS 11.27)

An FDR must record continuously from when the rotorcraft starts moving until it can no longer move under its own power at the end of the flight.

A CVR fitted to a rotorcraft must:

- start to record before the rotorcraft first begins moving under its own power for a flight
- start to record as early as possible during the cockpit checks before the engines are started at the beginning of the flight, if electrical power is available
- record continuously until the termination of the flight when the rotorcraft is no longer capable of moving under its own power and the engines have been shut down
- continue recording until as close as possible to the conclusion of the cockpit checks immediately following engine shutdown at the end of the flight, if electrical power is available.

The FDR and the CVR within a combination recorder must record continuously during the same periods as an FDR and CVR are required.

A CVR must record continuously during the period beginning after the engines are started for the flight and ending when the final pilot checklist is completed at the end of the flight, if:

- there is no APU or other alternative power source
- it is reasonably necessary to preserve the primary power source to start the engines
- the FDR is operated continuously during the period beginning just before the engines are started for take-off and ending when the final pilot checklist is completed at the end of the flight.

An FDR or combination recorder must not be operated during the maintenance of the rotorcraft or while an aeronautical product is fitted, unless the maintenance is to the recorder or an engine.

An APU fitted to the rotorcraft is not an engine unless it can propel the rotorcraft.

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Flight with an inoperative FDR, CVR or combination recorder

(MOS 11.28)

An FDR, CVR or combination recorder, fitted to a rotorcraft may be inoperative at the beginning of a flight only if the flight begins from a departure aerodrome with no facility for the recorder to be repaired or replaced and:

- for rotorcraft only required to be fitted with 1 CVR or 1 FDR, the inoperative recorder has not been inoperative for more than 21 days
- for rotorcraft required to be fitted with 1 CVR and 1 FDR both:
  - the inoperative recorder has not been inoperative for more than 21 days
  - the other recorder is operative
- for rotorcraft fitted with 1 combination recorder, the inoperative recorder must not have been inoperative for more than 3 days
- for rotorcraft fitted with more than 1 combination recorder both:
  - an inoperative combination recorder has not been inoperative for more than 21 days
  - at least one combination recorder is operative.

17.8 Rotorcraft interior communication systems

This section details flight crew communication systems, crew interphone systems and public address systems.

Flight crew intercommunication system

(MOS 11.30)

A rotorcraft must be fitted with:

- a flight crew intercommunication system that consists of 1 headset, and 1 microphone that is not of the hand-held type, for each pilot for the flight.
- another headset, and another microphone that is not of the hand-held type, if it is only required (by the civil aviation legislation or the flight manual) to conduct a flight with a single pilot
- another headset, and another microphone that is not of the hand-held type, if it is required (by the civil aviation legislation or the flight manual) to conduct a flight with 2 pilots.

As a flight crew member, you must wear a headset while operating from engine start to shut down and while occupying the crew station. You may remove the headset briefly if you believe it is safe to do so.

Crew interphone system

(MOS 11.31)

A rotorcraft must be fitted with a crew interphone if:

- a cabin crew member is required to be carried
- a crew member occupies a crew station separate to the flight deck compartment.

The system must be readily accessible for use by:

- each flight crew member from the flight crew member's seat in the flight crew compartment
- each crew member at the crew member's crew station.

The system must provide two-way communication between the flight crew compartment and each crew station in another compartment.

Public address system

(MOS 11.32)

A rotorcraft must be fitted with a public-address system to enable crew members to address the passengers, whether in flight or on the ground.

A public address system must be used for a rotorcraft that has a maximum operational passenger seat configuration of more than 9, unless:

- the flight crew members and passengers occupy the same compartment
- each flight crew member's voice is clearly audible from all passenger seats during a flight.

The system (other than handsets, headsets, microphones, selector switches and signalling devices) must operate independently of:

- the flight crew intercommunication system (see section 17.8 of this guide)
- the crew interphone system (see section 17.8).

The system must be readily accessible for use by each flight crew member from the flight crew member's seat in the flight crew compartment.

Each emergency exit with a nearby cabin or air crew seat at passenger level must have an operable handset or microphone reachable while seated.

The system must be operable within 10 seconds of activation by a crew member at each relevant location. Announcements made using the system must be audible to all passenger seats.

17.9 Oxygen equipment and oxygen supplies

This section details the requirements for:

- supplemental oxygen for both pressurised and unpressurised rotorcraft
- the use of oxygen masks and oxygen dispensing units for passengers
- protective breathing equipment
- first aid oxygen equipment.

It is an acceptable means of compliance if a gaseous oxygen system complies with:

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

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

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

Supplemental oxygen

This section outlines compliance for the fitment of supplemental oxygen equipment, the means of calculating the supplemental oxygen supply and the dispensing units for supplemental oxygen.

These requirements do not supersede any higher requirement set by a design standard associated with the type certification or supplemental type certification of the aircraft.

The amount of oxygen required to be carried is determined by:

- whether a cabin pressurisation failure will occur at a point on the planned flight route which is most critical from the standpoint of oxygen requirements
- after a failure, if the rotorcraft can safely descend according to emergency procedures outlined in the flight manual, and if the descent does not exceed normal operating limits and allows for safe flight termination at an appropriate altitude or flight level.

it is strongly recommended that operators and pilots carefully consider whether supplemental oxygen should be carried even if not required by the MOS.

Pressurised rotorcraft

(MOS 11.34)

A pressurised rotorcraft operated at a pressure altitude above 10,000 ft must be fitted with supplemental oxygen equipment. This must be capable of storing and dispensing supplemental oxygen to crew members and passengers.

Portable oxygen units can be carried to meet this requirement.

The rotorcraft must carry sufficient supplemental oxygen to meet the requirements set out in table 22.

For a flight of a pressurised rotorcraft that:

- during the flight will be flown above 13,000 ft, but not above flight level 250 (FL250)
- at all points along the route of the flight, the rotorcraft will be able to:
  - descend safely to 13,000 ft within 4 minutes
  - complete the planned flight, or land at an aerodrome that is suitable for landing
- the amount of supplemental oxygen required for the passengers, if any, is either:
  - sufficient to meet the passenger requirements set out in table 22
  - an amount of supplemental oxygen enough to supply 10% of the passengers for the flight for the period while the cabin pressure altitude exceeds 10,000 ft and does not exceed 13,000 ft.

When the cabin pressure altitude exceeds 10,000 ft, each flight crew member, and any assisting crew member, must use the supplemental oxygen that is made available to each of them.

Table 22: Supplemental oxygen – requirements for pressurised rotorcraft

Person	Supplemental oxygen supply requirements
flight crew members or assisting crew members	there must be supply for each flight crew member, or assisting crew member, for the period that is the greater of: › 30 minutes › the period while the rotorcraft's cabin pressure altitude exceeds 10,000 ft
cabin crew members or air crew members	› if the cabin pressure altitude remains above 10,000 ft but does not exceed 13,000 ft for over 30 minutes, there must be enough supply for each cabin or air crew member for the entire duration › each crew member must have adequate supply for the entire duration above 13,000 ft, with a minimum of 30 minutes supply guaranteed even for shorter periods
passenger	during the period when the rotorcraft's cabin pressure altitude exceeds 15,000 ft, there must be supply for each passenger for the greater of the following periods: › 10 minutes › the period while the rotorcraft's cabin pressure altitude exceeds 15,000 ft › for any period when the cabin pressure altitude exceeds 14,000 ft, but does not exceed 15,000 ft, there must be supply for the entire period for at least 30% of the passengers › for any period when the rotorcraft's cabin pressure altitude exceeds 10,000 ft, but does not exceed 14,000 ft, for more than 30 minutes, there must be supply for the period, for at least 10% of the passengers, after the first 30 minutes

Unpressurised rotorcraft

(MOS 11.35)

An unpressurised rotorcraft operated at a pressure altitude above 10,000 ft must be fitted with supplemental oxygen equipment. This must be capable of storing and dispensing supplemental oxygen to crew members and passengers.

Every unit installed in an unpressurised aircraft must have the following information clearly visible:

› a notice prohibiting smoking while the unit is used

› an illustration showing how to put the unit on

› a notice describing the dangers of flying with any kind of nasal obstruction or congestion.

A rotorcraft must carry sufficient supplemental oxygen to meet the requirements set out in table 23.

Each flight crew member, and any assisting crew member, must use the supplemental oxygen that is made available to each of them, in accordance with the supply requirements detailed in table 23:

› when the cabin pressure altitude exceeds 13,000 ft

› if the rotorcraft's cabin pressure altitude exceeds 10,000 ft for a period of, or periods totalling, 30 minutes

› during any further period, the cabin pressure exceeds 10,000 ft.

Portable oxygen units can be carried to meet this requirement.

The altitudes at which supplemental oxygen must be carried represent the minimum generally acceptable standard of safety for the operations regulated by this rule. However, it is strongly recommended that operators and pilots carefully consider whether supplemental oxygen should be carried even if not required by the MOS.

Table 23: Supplemental oxygen – requirements for unpressurised rotorcraft

Person	Supplemental oxygen supply requirements
flight crew members or assisting crew members	if the cabin pressure altitude stays between 10,000 and 13,000 ft for over 30 minutes, additional supply must be available after the initial 30 minutes
crew members or passengers	there must be supply for each crew member or passenger for the entire period the cabin pressure altitude exceeds 13,000 ft
passengers	if the cabin pressure altitude exceeds 10,000 ft but doesn't exceed 13,000 ft for more than 30 minutes, there must be enough supply for at least 10% of the passengers for the rest of the period

Oxygen masks in pressurised rotorcraft

(MOS 11.36)

For pressurised rotorcraft, an oxygen mask, for use by each pilot who is in a pilot seat, must:

- be fitted to the rotorcraft
- be within immediate reach of a pilot who is in a pilot seat.

For flight above FL250, the following requirements must also be met:

- the oxygen mask fitted to the rotorcraft must be a quick-donning mask
- at least 1 pilot who is in a pilot seat must wear and use a quick-donning mask while the rotorcraft is flown above FL250.

Oxygen dispensing units for passengers in a pressurised rotorcraft

(MOS 11.37)

In a pressurised rotorcraft, passengers must have access to oxygen dispensing units if the rotorcraft:

- is of a type that was first issued with a certificate of airworthiness (CoA) or an authorisation equivalent to a CoA, issued by the NAA of a contracting state, on, or after, 9 November 1998:
  - is flown at or above FL250 at any time during the flight
  - if flown below FL250 cannot safely descend from its flight level to a cabin pressure altitude of less than 13,000 ft within a period of 4 minutes in the event of a cabin depressurisation
- for passengers:
  - the oxygen dispensing units must be automatically deployable
  - the units must be immediately available to each passenger on the flight, wherever seated
  - the number of dispensing units must exceed the number of passenger seats by 10%
  - the additional units must be evenly distributed throughout the rotorcraft's passenger compartments.

Dispensing units must be:

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

A unit:

- must not, while being used, adversely affect a person's ability to use the crew intercommunications equipment or radiocommunication equipment required
- must offer alternative communication equipment that achieves the same communication results for the user.

The units provided in an aircraft operating at or below FL180 must include at least 1 unit designed to cover the nose and mouth for every 15 units provided. Every unit provided in an aircraft operating above FL180 must be designed to cover the nose and mouth.

Flight crew must have oxygen equipment with a dispensing unit connected to a readily available oxygen supply terminal at their station.

Protective breathing equipment – flight crew members

(MOS 11.38)

When a pressurised rotorcraft begins a flight, it must be carrying protective breathing equipment (PBE) for each flight crew member. The PBE must:

- protect the wearer's eyes, nose and mouth
- protect the part protecting the wearer's eyes:
  - not adversely affect vision in any noticeable way
  - allow corrective glasses to be worn in a normal position
- be able to supply oxygen continuously for at least 15 minutes. This must be calculated in reference to a pressure altitude of 0 ft with a respiratory minute volume of 30 litres per minute, body temperature and pressure dry (BTPD) with the acceptable means of compliance being:
  - if a demand oxygen system is used, a supply of 300 litres of free oxygen at 20°C and 760 mm Hg pressure is considered to be of 15-minute duration at the prescribed altitude and minute volume
  - if using a continuous flow protective breathing system, 60 litres per minute at 8,000 ft (45 litres per minute at sea level) and 600 litres of free oxygen at standard conditions are considered to last for 15 minutes at the specified altitude and breathing rate.

Martin Bass

Note: The oxygen supply for the PBE for each flight crew member can be provided by the supplemental oxygen equipment required to be fitted under chapter 17 of this guide.

The protective breathing equipment for a flight crew member must be accessible for immediate use at the flight crew member's crew station. The PBE must not prevent, or be likely to prevent, a flight crew member from effectively using any crew intercommunications, radiocommunications or equipment fitted to or carried.

Portable protective breathing equipment

(MOS 11.39)

When a pressurised rotorcraft is required (by its flight manual) to be flown by 2 pilots, it must carry portable protective breathing equipment (portable PBE units). A portable PBE unit is required for each pilot and each unit must:

- protect the wearer's eyes, nose and mouth
- the part protecting the wearer's eyes:
  - must not adversely affect vision in any noticeable way
  - must allow corrective glasses to be worn in a normal position
- portable PBE units must be in or as close as is practicable to the cockpit
- must be able to supply oxygen, or a mixture of oxygen and another suitable gas, continuously for at least 15 minutes.

First aid oxygen equipment – pressurised rotorcraft

(MOS 11.40)

First aid oxygen is a supply of undiluted oxygen for a passenger who may still require oxygen when:

- there has been a cabin depressurisation
- the amounts of supplemental oxygen supply have been exhausted.

A pressurised rotorcraft must be fitted with, or carry, first aid oxygen if it:

- is flown above FL250 at any stage of flight
- is conducting a passenger transport operation
- is sated in the flight manual that the rotorcraft must be flown by the more than 1 pilot.

When the rotorcraft begins the flight, it must carry a volume of first aid oxygen that will provide an average oxygen gas flow rate (calculated assuming dry oxygen gas at standard temperature and pressure) of 3 litres a minute for each person:

- for whichever of the following is the greater number of persons:
  - 2% of the number of passengers carried on the flight
  - at least 1 person
- for the flight period after a cabin depressurisation event during which the rotorcraft's cabin pressure altitude exceeds 8,000 ft, but does not exceed 15,000 ft.

When the rotorcraft begins the flight, it must carry enough specific first aid oxygen dispensing units relative to the number of passengers on board, but in no case fewer than 2 such units.

An oxygen dispensing unit:

- must be capable of generating a flow rate, calculated assuming dry oxygen gas at standard temperature and pressure dry (STPD), of at least 4 litres a minute for each person
- may have a means of reducing the flow to not less than 2 litres a minute for each person STPD at any altitude.

17.10 Emergency locator transmitters (ELT)

This section details:

- the carriage of ELTs
- the technical requirements for automatic and survival ELTs
- transitional requirements for ELTs.

Carrying ELTs

ELTs are an essential tool for emergency situations and are required to be fitted to or carried on Australian aircraft.

The Australian Maritime Safety Authority (AMSA) is responsible for coordinating search and rescue within Australian territory and maintaining Australia's national beacon registration system.

The process of registering a distress beacon is simple and free. It is crucial to keep your registration details up to date, especially whenever your contact details or emergency contacts change. Registering your distress beacon helps to ensure a more efficient rescue operation in the event of an emergency.

An ELT required to be fitted to or carried on an Australian aircraft must be registered. Pilots and operators can fit or carry ELTs even when not required under the civil aviation legislation.

See Multi-Part AC 91–30, 121–12, 133–03 and 135–14 www.amsa.gov.au for more details.

Automatic ELTs

(MOS 11.41 and 11.43)

If an automatic ELT has a switch marked, however described, as 'armed', the pilot in command must ensure the switch is set to the 'armed' position when the flight begins.

A rotorcraft must be fitted with an automatic ELT when:

- it has a maximum operational seat configuration of more than 3
- is flown more than 50 NM from the departure aerodrome.

This does not apply if:

- it is fitted with an inoperative automatic ELT and the flight is for the repair or re-fitting of the ELT
- a survival ELT is carried during the flight
- no passengers are carried on the flight.

An automatic ELT:

- must be automatically activated on impact
- be one of the following types:
  - authorised by the FAA, or EASA, in accordance with ETSO-C126
  - authorised by EASA in accordance with:
    - for operation on 121.5 MHz: ETSO–2C91a
    - for operation on 406 MHz: ETSO–2C126
  - be approved in writing by CASA as having a performance level as the transmitter types above.

Exemption – (CASA EX14/25 – Serviceability of Equipment under the Part 91, 121, 133 and 135 Manuals of Standards – Exemption Instrument 2025)

For a period of no more than 3 days a rotorcraft may operate without an automatic ELT provided the following conditions are met:

- the operation must be for the purpose (at least in part) to fly the rotorcraft to a place for repair, or refitting, of the ELT
- the approved MEL must permit flight with the relevant ELT inoperative and is no less restrictive than the conditions listed here in this guide (i.e. this exemption)
- no passengers of any kind are carried
- the operation is not one where carrying life rafts is required.

Survival ELTs

(MOS 11.41 and 11.44)

A rotorcraft must carry a survival ELT if it:

- has a maximum operational seat configuration of 3 or less
- is flown 50 NM or less from the departure aerodrome
- is not fitted with an automatic ELT.

A survival ELT must be carried:

- on the body of a crew member
- in, or adjacent to, a life raft
- adjacent to an emergency exit used for emergency evacuation.

> **Note:** if the rotorcraft is required to carry a life raft equipped with a survival ELT, this is additional to the requirement to carry a survival ELT.

A survival ELT:

- is removable from the rotorcraft
- one of the following types:
  - an emergency position-indicating radio beacon that meets the requirements of AS/NZS 4280.1:2003
  - a personal locator beacon that meets the requirements of AS/NZS 4280.2:2003
  - authorised by the FAA, or EASA, in accordance with ETSO-C126
  - authorised by EASA in accordance with:
    - for operation on 121.5 MHz: ETSO–2C91a
    - for operation on 406 MHz: ETSO–2C126
  - approved in writing by CASA as having a level of performance equivalent to a type mentioned above.

ELT – basic technical requirements

(MOS 11.42)

An emergency locator transmitter (ELT) must meet the following requirements:

- the transmitter must transmit simultaneously on 121.5 MHz and 406 MHz when activated
- the transmitter must be only registered with the Australian Maritime Safety Authority (AMSA) and no other authority if the transmitter is fitted to, or carried on, an Australian rotorcraft
- the transmitter must be registered with the authority of the rotorcraft's State of registry that is responsible for search and rescue services, and not with AMSA if the transmitter is fitted to, or carried on, a foreign-registered rotorcraft
- the transmitter must, for identification purposes, be coded in accordance with ICAO requirements if the transmitter is fitted with a lithium-sulphur dioxide battery (the battery must also be authorised by the FAA, or EASA).

17.11 Portable emergency equipment

(MOS Division 11)

This section details the usage of portable emergency equipment, including handheld fire extinguishers and first-aid kits.

Handheld fire extinguishers

(MOS 11.46)

The following handheld fire extinguishers must be carried onboard:

- one in the flight crew compartment
- for a maximum operational passenger seat configuration of 7 or more an additional handheld fire extinguisher located in the passenger compartment
- for a cargo or luggage compartment accessible in flight and not fitted with a fixed fire and smoke detection and extinguishing system an additional handheld fire extinguisher located in, or as close as is practicable to the compartment.

The type and quantity of extinguishing agent must:

› be suitable for the type of fire likely to occur in the compartment where the extinguisher is used

› minimise the hazard of toxic gas concentration in compartments occupied by persons.

Where only one handheld fire extinguisher is carried in the passenger compartment, try to locate it near a crew member's station. Where two or more handheld fire extinguishers are carried in the passenger compartment, try to distribute them evenly throughout the cabin.

If a handheld fire extinguisher is not clearly visible, consideration should be given to a placard or sign with appropriate symbols to indicate the location.

First-aid kits

(MOS 11.47)

A first-aid kit must be carried onboard a flight and meet the following requirements:

› contain enough supplies for the number of persons carried on the flight

› be readily recognisable as a first-aid kit

› be readily accessible by each crew member and adult passenger when on the ground or water, and not in operation.

17.12 Equipment for flights over water

This section details the equipment required for flights over water. This includes sea-anchors, sound signals, life jackets, infant floatation cots, life raft carriage requirements and emergency floatation equipment.

Sea anchors and sound signals – certain rotorcraft

(MOS 11.48)

If a rotorcraft is designed to take-off and land on land or water and the flight involves a take-off from or landing on water, then it must carry:

› a sea anchor

› other equipment for mooring the rotorcraft.

If flying over or on water governed by international regulations, equipment must be carried for the sound signals required by those regulations.


Kipp Baker

Life jackets and infant flotation cots

(MOS 11.49)

Life jackets with whistles and infant flotation devices are required for each person and infant onboard a flight if:

- the rotorcraft is flying in performance class 3 over water further than it can safely reach land with one engine inoperative
- the rotorcraft is flying more than 50 NM from land
- there is a reasonable chance of landing in water during take-off, initial climb, approach, landing, or an aborted landing
- the flight is to or from a helideck (a landing area on a platform or ship).

Each person for whom a life jacket is required must wear the life jacket during the flight. If an infant is in an infant flotation cot during flight, the rotorcraft does not need to carry a life jacket for the infant.

> **Note:** A rotorcraft does not have to carry life jackets if it flies over water in the normal course of climbing after take-off, or descending to land' or descending to land, or in accordance with a navigational procedure that is normal for climbing from or descending at the aerodrome.

Wearing life jackets

(MOS 26.59)

When a rotorcraft is taking off or landing at an aerodrome in a densely populated area, and water is the only practical forced landing area, every person on board (excluding infants) must wear a life jacket if the rotorcraft is below the minimum altitude during take-off or descent.

Life raft carriage requirements

(MOS 11.50)

This section applies if the flight is a passenger transport operation.

If the flight will be flown over water, from a suitable forced-landing area situated on land:

- for a multi-engine rotorcraft, the shorter of:
  - the distance to fly in 30 minutes at the planned cruising speed in still air
  - 50 NM
- for a single-engine rotorcraft with operational control that would enable, in the event of an emergency, an immediate initiation by a search and rescue body:
  - 25 NM
- for a single-engine rotorcraft to which the above does not apply:
  - the distance flown in 5 minutes at the normal cruising speed in still air.

Note: This section does not apply if the rotorcraft:

- has a maximum operational passenger seat configuration of not more than 5
- will be flown less than 10 NM over water from land
- has operational control that would enable, in the event of an emergency, an immediate initiation of a response by a search and rescue body.

For a flight with no more than 11 persons onboard the rotorcraft must be fitted with at least one life raft large enough for everyone on board and the life raft equipment must:

- be equipped with:
  - a survivor locator light
  - a survival ELT
- be stowed so it can be readily deployed if the rotorcraft ditches
- be stowed in a compartment or container conspicuously marked as containing the life raft.

For a flight with more than 11 persons onboard the rotorcraft must be fitted with at least 2 life rafts that are collectively large enough for everyone on board and the life raft equipment must:

- have a place for each person (other than an infant) on board:
  - assuming the life raft with the greatest rated capacity cannot be used
  - based on the overload capacity of the other life rafts
- if first issued with a certificate of airworthiness (CofA) on, or after, 1 January 1991:
  - at least 50% of the life rafts carried must be deployable by remote control
  - if a life raft is not deployable by remote control and weighs more than 40 kg, it must be equipped with a method of mechanically assisted deployment
- be equipped with:
  - a survivor locator light
  - a survival ELT
- be stowed so it can be readily deployed if the rotorcraft ditches
- be stowed in a compartment or container conspicuously marked as containing the life raft.

Overwater survival equipment

(Section 26.62 of Part 91 MOS)

An aircraft that is required to carry a life raft (MOS 26.60) must carry survival equipment that is appropriate for sustaining life in the overwater area in which it is flying. It must also carry signalling equipment that can make the distress signals set out in Appendix 1 to ICAO Annex 2 – 'Rules of the Air' if required.

Operators should assess if electronic visual distress signals (EVDS), such as lasers, meet the requirements of the MOS and comply with CAA 1988, AS 2092–2004, and other relevant state and territory regulations. Operators should also consider whether these devices are recognised as distress signals, given they are not internationally approved.

17.13 Remote areas

(Section 26.63 and 26.65 of Part 91 MOS)

A remote area means one of the following:

- Central Australia remote area
- Snowy Mountains remote area
- Tasmania remote area.

Figure 3: Central Australia remote area

Figure 4: Snowy Mountains remote area

Figure 5: Tasmania remote area

Remote areas are the areas of Australia illustrated by shading in figure 3, figure 4 and figure 5 and described as follows:

'Central Australia remote area' is the area enclosed within the boundary of a line from:

- Kalgoorlie to Leigh Creek, to Bourke
- Mt Isa, to Townsville, to Cairns
- then following the coast north to Cape Horn
- then along the coastline of the Gulf of Carpentaria and on to Darwin
- then following the coastline to Anna Plains
- then to Wiluna, to Laverton, and back to Kalgoorlie, and:
  - includes Australian-administered islands adjacent to the remote area between Cairns and Ana Plains
  - excludes the area within a 50 NM radius of Darwin
  - excludes the flight corridors within sight of, and not more than, 5 NM from the following:
  - the Stuart Highway between Alice Springs and Darwin
  - the Barkly Highway between Tenant Creek and Mt Isa
  - the Bruce Highway between Townsville and Cairns.

'Snowy Mountains remote area' is the area enclosed within the boundary of a line from Mt Franklin to Tharwa, to Berridale, to Delegate, to Mt Baw, to Jamieson, to Khancoban, and back to Mt Franklin.

'Tasmania remote area' is the area enclosed within the boundary of a line from West Point to Black Bluff, then to 15 NM beyond Cape Bruny, then back to West Point at a distance of 15 NM off the coastline (disregarding bays and inlets).

> **Note:** A line to or from a named town is taken to come no closer than 5 NM from the town centre on the side of the town adjacent to the remote area.

Remote area survival equipment

(Section 26.64 of Part 91 MOS)

An aircraft that is flying over a remote area is required to carry appropriate survival equipment for sustaining life for the area that is being overflown.

17.14 Emergency flotation equipment

(MOS 11.51)

This section applies to transport operations. It does not apply to rotorcraft designed to take-off from and land on water, such as a rotorcraft with fixed floats.

The rotorcraft must be fitted with emergency flotation equipment if the flight:

- is to or from a helideck on a vessel or other offshore facility
- will have an approach and landing or baulked landing stage, or a take-off and initial climb stage, over water
- will be flown further over water from land than the distance in which, with 1 engine inoperative, could reach a suitable forced landing area.

> **Note:** If a flight is over solid ice dense enough for a safe rejected take-off, forced landing or emergency landing, the rotorcraft does not need emergency floatation equipment.

Flight over water is permitted without having to fit emergency flotation equipment if it is:

- in a rotorcraft access lane mentioned in the AIP
- to comply with an ATC instruction
- for no longer than 2 minutes at normal cruising speed in still air.

17.15 Transponders and surveillance equipment

This section details:

- the use and carriage of transponders and surveillance equipment
- specific requirements for Mode S transponders
- requirements for alternate GNSS position sources for ADS-B OUT
- requirements for alternate ADS-B OUT equipment configuration
- inoperative transponders.

Carriage of transponders and surveillance equipment

(MOS 11.53)

If a transponder is required under this section, it must meet the requirements relevant to the intended operation and class of airspace.

A rotorcraft operating as listed under operation of table 24, within the class of airspace, must have surveillance equipment listed in the requirements.

Table 24: Surveillance equipment requirements.

Operation	Class of airspace	Requirements
IFR	any (classes A, B, C, D, E and G)	at least 1 approved ADS-B OUT equipment configuration
any (IFR or VFR)	class B or C: at certain aerodromes	for a rotorcraft operating at one of the following aerodromes: › Brisbane (YBBN) › Sydney (YSSY) › Melbourne (YMML) › Perth (YPPH) › at least 1 approved Mode S transponder **Note:** An approved Mode S transponder with ADS-B capability is not required to transmit ADS-B OUT for a VFR flight.
VFR	class A, B, C or E	for a rotorcraft initially certified with an AOC, or modified by replacing its transponder, on or after 6 February 2014: at least 1 approved Mode S transponder with ADS-B capability for any other rotorcraft: at least 1 approved transponder **Note:** An approved Mode S transponder with ADS-B capability is not required to transmit ADS-B OUT for a VFR flight.
VFR	class G: from 10,000 ft and above	for a rotorcraft certified with an AOC, or modified by replacing its transponder, on or after 6 February 2014: at least one approved Mode S transponder with ADS-B capability for any other rotorcraft: at least 1 approved transponder **Note:** An approved Mode S transponder with ADS-B capability is not required to transmit ADS-B OUT for a VFR flight.
VFR	class A: from FL290 and above	at least 1 approved ADS-B OUT equipment configuration

Operation of transponders – general requirements

(MOS 11.54)

A transponder:

- must be operated in a mode that enables a secondary surveillance radar (SSR) response to be transmitted
- must not be operated if instructed by ATC.

Only 1 transponder may be operated at any time.

For each transponder, the Mode A code must be set to:

- the transponder code assigned by ATC for the flight
- to the relevant standard code in table 25 if no transponder code is assigned by ATC for the flight.

If an approved transponder capable of reporting pressure altitude is fitted, it must be operated with altitude reporting enabled. Pressure altitude information reported by an approved transponder must be determined by a barometric encoder of a type authorised by CASA, or the NAA of a recognised country, in accordance with ETSO-C88a.

Table 25: Transponders – Mode A standard codes

Situation	Mode A code
flights in Class A, B, C or D airspace IFR flights in Class E airspace	3000
IFR flights in Class G airspace	2000
VFR flights in Class E or Class G airspace	1200
flights in Class G over water at a distance greater than 15 NM from shore	4000
flights engaged in coastal surveillance	7615
ground testing by aircraft maintenance personnel	2100
unlawful interference	7500
loss of radiocommunication	7600
in-flight emergency, unless otherwise instructed by ATC	7700

Pilots should refer to AC 91-23 ADS-B for enhancing situational awareness for guidance on electronic conspicuity devices for operations under the VFR.

Mode S transponders – specific requirements

(MOS 11.55)

An approved Mode S transponder must be configured to ensure:

- the assigned aircraft address is entered
- one of the following forms of aircraft flight identification is entered into the equipment:
  - if a flight notification is filed with ATS for the flight, the aircraft identification mentioned in the flight notification
  - if no flight notification is filed with ATS for the flight, the aircraft registration mark.

An approved ADS-B OUT equipment configuration must be configured to ensure:

- the assigned aircraft address is entered
- one of the following forms of aircraft flight identification is entered into the equipment:
  - if a flight notification is filed with ATS for the flight, the aircraft identification mentioned in the flight notification
  - if no flight notification is filed with ATS for the flight, the aircraft registration mark.

When interrogated on the manoeuvring area of an aerodrome or in flight, an approved Mode S transponder must transmit:

- the assigned aircraft address
- the Mode A code
- the Mode C code
- the aircraft flight identification.

Transmission of the aircraft flight identification by an approved Mode S transponder is required if an AOC was issued before 9 February 2012.

If an approved Mode S transponder transmits any Mode S EHS DAPs, the transmitted DAPs must comply with the standards stated in paragraph 3.1.2.10.5.2.3 and Table 3–10 of Volume IV, Surveillance and Collision Avoidance Systems, of ICAO Annex 10.

Note: Australian Mode S SSR supports EHS DAPs. Transmission of Mode S EHS DAPs that are not in accordance with the ICAO standards may provide misleading information to ATC. Operators need to ensure that EHS DAPs are being transmitted.

If an approved Mode S transponder is fitted to a rotorcraft with an AOC on or after 9 February 2012, it must:

- have a certificated MTOW above 5,700 kg
- be capable of normal operation at a maximum cruising true airspeed above 250 kts.

The transponder's receiving and transmitting antennae must:

- be located in the upper and lower fuselage
- operate in diversity, as stated in paragraphs 3.1.2.10.4 to 3.1.2.10.4.5 (inclusive) of Volume IV, Surveillance and Collision Avoidance Systems, of ICAO Annex 10.

Note: Paragraph 3.1.2.10.4.2.1 is only recommended.

A rotorcraft must not fly in Australian territory if it is fitted with Mode S transponder equipment other than an approved ADS-B OUT equipment configuration, unless the equipment is:

- deactivated
- set to transmit only a value of zero for the NUCp, NACp, NIC or SIL.

Note: It is considered equivalent to deactivation if NUCp, NACp, NIC or SIL is set to continually transmit only a value of zero.

Alternate GNSS position source for ADS-B OUT – requirements

(MOS 11.56)

For a rotorcraft first issued with an AOC on or after 8 December 2016, an alternate GNSS position source is acceptable if the source:

- is certified by CASA, or the NAA of a recognised country, for use in an IFR flight
- has included in its specification and operation the following:
  - fault detection and exclusion (FDE), computed in accordance with the definition in paragraph 1.7.3 of RTCA/DO–229D
  - the output function HPL, computed in accordance with the definition of the term at paragraph 1.7.2 of RTCA/DO–229D
  - has functionality that adjusts for GPS signal anomalies as outlined in paragraph 1.8.1.1 of RTCA/DO–229D for HPL computation purposes
- for a rotorcraft first issued with an AOC before 8 December 2016, an alternate GNSS position source is acceptable. This does not apply if functionality that adjusts for GPS signal anomalies as outlined in paragraph 1.8.1.1 of RTCA/DO–229D for HPL computation purposes.

RTCA/DO–229D refers to the document titled Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment, dated 13 December 2006, of the RTCA Inc. of Washington D.C. USA (RTCA Inc.).

Alternate ADS-B OUT equipment configuration – requirements

(MOS 11.57)

An alternate ADS-B OUT equipment configuration is acceptable if:

- it has been certified by CASA, or the NAA of a recognised country
- the flight manual or flight manual supplement attests to the certification
- the GNSS system meets the performance requirements for ADS-B OUT.

An alternate ADS-B OUT equipment configuration is acceptable if:

- it has been certified by EASA
- the flight manual attests to the certification
- the GNSS system meets the performance requirements section 17.5 of this guide.

For a rotorcraft first issued with an AOC on or after 8 December 2016, an equipment configuration is acceptable if:

- it has been certified by the FAA
- the flight manual attests to the certification
- the GNSS system meets the performance requirements in this section of this guide.

Rotorcraft flown with inoperative transponder

(MOS 11.58)

An approved transponder may be inoperative at the beginning of a flight if it:

- begins from an aerodrome where there is no facility for the approved transponder to be repaired or replaced
- ends not more than 72 hours after the time the approved transponder was found to be inoperative.

Note: For a flight with an inoperative transponder, within controlled airspace or at a controlled aerodrome, Division 11.2 of the Part 91 MOS has requirements relating to air traffic control clearances. Whether a clearance is issued, or when a clearance may be issued, could be affected by the flight not being conducted with an operative transponder.

17.16 Equipment for NVIS flights

This section applies to the use of NVIS by a flight crew member in an NVIS flight.

It does not apply to the use of NVIS by a person who is not a flight crew member unless the person is involved in air navigation or terrain avoidance functions.

This section details:

- the fitment and non-fitment of NVIS equipment to a rotorcraft
- the carrying of NVIS equipment
- NVIS equipment that is fitted or carried.

Under CASA EX68/24 Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2024, Part 133 operators must gain approval before conducting an NVIS operation for the first time in a Part 133 operation.

General and lighting standards for NVIS flights

(MOS 11.61)

A rotorcraft for an NVIS flight must be NVIS certified and have NVIS compatible lighting.

The design of a required aircraft lighting system modification for an NVIS flight must be based on the requirements of:

- RTCA/DO–275
- MIL-STD–3009, Lighting, Aircraft, NVIS Compatible, of the US Department of Defence.

Performance and other specifications for NVG image intensifier tubes

(MOS 11.62)

Night vision goggles (NVG) image intensifier tubes for an NVIS flight must meet the minimum operational performance specification:

- defined in RTCA/DO-275 as per table 26
- approved in writing by CASA as equivalent in terms of:
  - tube resolution
  - system resolution
  - system luminance gain
  - photosensitivity
  - signal to noise ratio.

Each NVG image intensifier tube and associated NVIS equipment must be:

- certified by its manufacturer as being for aviation use
- identified by the manufacturer's unique serial number
- acquired (with or without valuable consideration) by the rotorcraft operator directly from:
  - the manufacturer or the manufacturer's official supplier
  - a person who acquired it directly from an official source
  - a person who obtained it directly or indirectly from the original buyer.

Note: CASA considers the source of second-hand NVG tubes and equipment to be a matter that may affect safety.

In the case of replacement of NVG image intensifier tubes with tubes that are sourced from other than an official source:

- the tubes are to be replaced as a pair
- the tubes are of the same form, fit and function as the tubes being replaced
- the NVIS mounting frame or optical components must be modified
- the tubes must be compliant with table 26.

For guidance, US AN/AVS 9 NVIS, although manufactured by different manufacturers, are produced to the same US Department of Defence specification. These tubes are interchangeable.

If 2 or more NVIS pilots on an NVIS flight use dissimilar NVG image intensifier tubes and equipment, the PIC must use the highest level of NVIS tubes and equipment in terms of resolution, gain and acuity.

Note: Use of dissimilar NVIS does not remove the requirement that the minimum standard of any set used must be in accordance with the requirements of this section of the guide.

An NVIS pilot who occupies a control seat of a rotorcraft during an NVIS operation must use the NVIS manufacturer's approved helmet mounted attachment device.

Table 26: Modifications of RTCA/DO-275

Column One: RTCA/DO–275 (as in force from time-to-time)	Summary	Amended performance requirement
Para 2.2.1.1 system resolution	1.0 cycles per milliradian (cy/mr) at 14º off axis = 0.81 cy/mr with a variable focus @ through infinity = 0.49cy/mr	1.3 cy/mr
Para 2.2.1.2 system luminance gain – filmed non-autogating	= 2 500 foot-Lamberts (fL) per fL at an input light level of 1 x 10–4 fL	= 5 500 foot-Lamberts (fL) per fL at an input light level of 1 x 10–4 fL = 1750 cd/m2/lx at an input light level of 1.1 x 10–3 lx
system luminance gain – filmless autogating		=16 000 cd/m2/lx at an input light level of 2 x 10–5 lx
Para 2.2.1.3 field-of-view	38º vertical and horizontal	40º
Para 2.2.1.4 magnification	1:1 +/- 2%	1:1
Para 2.2.1.7.1 spectral transmission	meet class B filter requirements	class B filter
Para 2.2.1.10 eyepiece diopter range	adjustable +1.0 to –2.0 fixed –0.5 and –1.0	+2 to –6
Para 2.2.1.12 objective focus range	adjustable from beyond infinity to no greater than 45 cm close range	25 cm close
Para 2.2.13 exit pupil/eye relief	Type I – 25 mm Type II – 20 mm	25 mm
Para 2.2.2.3 flip-up/flip down	required capability	push button
Para 2.2.2.4 fore-and-aft adjustment	sufficient to align with users' eyes	27 mm total
Para 2.2.2.4 tilt adjustment	sufficient to align with users' eyes	10º
Para 2.2.2.5 interpupillary adjustment	desired but not required. If not installed, exit pupil must be large enough to see full FOV	51 to 72 mm
Para 2.2.2.6 voltage required	2.7 – 3.0 V DC 50mA nominal backup power supply required	2.7 – 3.0 V DC 50mA nominal backup available
photosensitivity- filmed non-autogating	not specified	1 800 µA/lm
technology	intensifier tubes not specified	not specified
photosensitivity- filmless autogating		800 µA/lm
tube resolution	not specified	64 line pairs per millimetre (lp/mm)
signal to noise ratio – filmed non-autogating	not specified	21:1
signal to noise ratio – filmless autogating		25:1

Maintenance of the NVIS and its components

(MOS 11.63)

In this section, manufacturer means the person who is:

› the original manufacturer of the NVIS

› the original manufacturer of the NVG image intensification tubes fitted to the NVIS

› the person who makes the final assembly of the parts into the NVIS, if parts of the NVIS are manufactured by different persons.

For an NVIS flight, the NVIS equipment must be maintained, stored and checked for serviceability, in accordance with the manufacturer's requirements and procedures.

NVIS equipment must have a documented maintenance program to ensure that:

› maintenance, inspection and serviceability standards for the NVIS are met

› a biennial assessment is made to identify and rectify any degradation in the compatibility of lighting systems with the NVIS.

> **Note:** RTCA/DO-275 provides guidance for the ongoing maintenance of installed NVIS compatible systems.

The maintenance program must include a method for assessing NVIS compatibility with any subsequent modification, equipment introduction or repair that may affect the NVIS compatibility.

Any item of equipment, other than NVIS equipment, that is fitted or carried must not adversely affect the safety of an NVIS operation.

Maintenance of NVIS must be carried out by an organisation that:

› meets the requirements of CAR regulation 30 or CASR Part 145 for NVIS and related equipment maintenance

› is endorsed in writing by the manufacturer of the NVIS as an appropriate organisation to carry out maintenance on the NVIS.

Maintenance includes routine scheduled servicing of NVIS.

An organisation approved by a U.S. NVIS manufacturer and compliant with RTCA/DO-275 is considered endorsed for any other NVIS if it:

› is manufactured in the US and available in Australia

› complies with the specification mentioned in RTCA/DO-275.

The operator must report a failure to CASA, within 28 days, through the Service Difficulty Reporting System using ATA Code 2590 if:

› one or more image intensification tubes fail for any reason during an NVIS operation

› one or more tubes fail at any time because of a suspected error in maintenance.

Minimum equipment for NVIS flight

(MOS 11.64)

Before an NVIS flight, the rotorcraft must be fitted with a serviceable radio altimeter that:

› has a display that provides clear and immediate information on both absolute height and rate of height change

› is positioned to be instantly visible to each NVIS crew member from the person's station in the cockpit

› has an integral audio and visual low height warning that operates at a height selectable by the pilot

› provides unambiguous warning to each NVIS crew member of radio altimeter failure

› has a visual warning system that provides clear visual warning at each cockpit crew station of height below the pilot-selectable height

› has an audio warning system that:

  » is unambiguous and readily cancellable

  » when cancelled, does not extinguish any visual low height warnings

  » operates at the same pilot-selectable height as the visual warning.

Before an NVIS flight, the rotorcraft must be fitted with a serviceable pilot-steerable searchlight, adjustable in both pitch and azimuth from the flight controls.

The operator and the PIC be satisfied that:

› in an NVIS operation below 500 ft AGL

› in an NVIS operation from an HLS-NVIS basic using a searchlight with an NVIS compatible IR filter.

The risk of an adverse event because of NVIS failure below 500 ft AGL is controlled by:

› the rotorcraft's capacity to revert immediately to a non-filtered search or landing light

› the presence of 2 pilots, each of whom:

» is NVIS qualified and NVIS equipped

» has access to dual flight controls.

CASA may approve an alternative visual and audio warning system that must be fitted before an operation. This only applies if the system produces warnings at least equivalent to:

› a visual warning system that provides clear visual warning at each cockpit crew station of height below the pilot-selectable height

› an audio warning system that:

» is unambiguous and readily cancellable

» when cancelled, does not extinguish any visual low height warnings

» operates at the same pilot-selectable height as the visual warning.

Martin Bass

CHAPTER 18
FLIGHT CREW

18.1 Overview

This chapter details the requirements for flight crew and covers:

- crew composition requirement
- assignment of pilots
- training and checking of pilots
- qualifications
- competence of flight crew
- knowledge of routes
- operation of different types of rotorcraft
- recent experience.

18.2 Crew composition (numbers), qualifications and training

(133.370)

You must ensure that when a flight begins the flight crew composition:

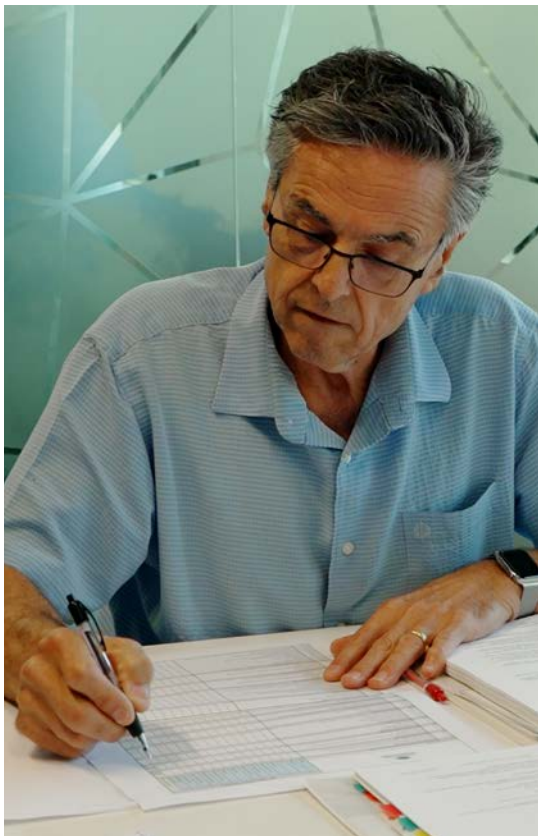
- complies with the flight manual
- includes 2 pilots where the rotorcraft's maximum operational passenger seat configuration (MOPSC) is more than 9
- includes extra flight crew members when required by your exposition.

> **Note:** Your exposition must include:
>
> - the kinds of operation (if any) for which additional flight crew members must be carried
> - the requirements that must be met for new or inexperienced crew members to be assigned to duty for a flight of the rotorcraft.

See section 18.8 of this guide for training and checking requirements of flight crew members.

For operators with crew members who were trained and checked prior to the commencement of Part 133 of CASR on 2 December 2021, CASA has issued training and checking determination instruments to ensure that the previously completed training and checking of crew members is legally taken to be equivalent to the new training and checking event requirements. Refer to CASA EX77/24 –Transitional Training and Checking Requirements for Crew Members in Part 133 Operations – Exemption Instrument 2024.

For further details refer to AC 119–11 – Training and checking systems.



18.3 Assigning the pilot in command

(133.380, 133.385 and MOS 12.14)

You must assign a pilot in command (PIC) before a flight begins who is qualified as detailed in table 27.

Table 27: Qualifications of the PIC

Circumstance	Qualifications
assigned as PIC	› meet the minimum flying experience requirements specified in your exposition › meet the flight hour requirements, in a rotorcraft of the same type, as detailed table 29 › meet the command training standards for a multi-crew operation (if applicable) › are: » authorised to pilot the rotorcraft under Part 61 as PIC if the rotorcraft is an Australian aircraft » authorised to pilot the rotorcraft under its State of registry if the rotorcraft is a foreign registered aircraft.
assigned as PIC in a multi-crew operations	› received training in the responsibilities of the PIC of a rotorcraft of that type or class › undertaken supervised line flying as pilot in command under supervision (PICUS) for the required number of flight hours detailed in your exposition.

Note: Before the pilot can operate the rotorcraft as PIC, the pilot is also required to have successfully completed the operator's flight crew member proficiency check, and flight crew member line check for the rotorcraft. See chapter 18 of this guide.

It is an acceptable means of compliance with this regulation if the crew member roster, published crew list and the crew declaration forms for the flight clearly identify which member of the crew is assigned as PIC.

Your exposition should identify how the assignment and qualifications of the PIC are monitored. Depending on the size scope and complexity of your operation, this may be as simple as a manual tracking tool such as a white board detailing each crew members qualification through to an automated software based rostering system and qualification tracking system that ensures flight crew are qualified for a flight. Generally, 10 flight crew across a simple operation that does not involve multiple types would be considered suitable for using a manual tracking tool. In the case of complex operators with more than 10 flight crew or multiple types there are multiple software programs designed to manage flight crew rostering available.

Before assigning the PIC to a flight, you must ensure they have the minimum flight hours as detailed in table 28.

Table 28: Minimum flight hours required to qualify as PIC

Flight	Flight hours
flight at night	5 hours as PIC or pilot in command under supervision (PICUS) at night
VFR flight in a single-engine rotorcraft	either: › 5 hours as PIC or PICUS by day in a rotorcraft of that kind › if the pilot has 5 hours of aeronautical experience in another kind of single-engine rotorcraft either: » 3 hours as PIC by day in a rotorcraft of that kind » 3 hours as PICUS by day in a rotorcraft of that kind
VFR flight in a multi-engine rotorcraft	10 hours as PIC or PICUS by day
IFR flight in a multi-engine rotorcraft	15 hours as PICUS under the IFR
multi-crew operation	either: › 20 hours as PIC › 20 hours as PICUS in a multi-crew operation

Note: More than one flight hours requirement detailed in table 28 may apply to a particular hour of flight time.

Your exposition must include minimum flying experience requirements for all rotorcraft you operate in air transport operations.

You may elect higher minimum hours than those provided in table 28. Your exposition must consider all aircraft types that will be operated.


Rune Millerjord, AgustaWestland

18.4 Assigning a copilot

(133.390)

You may assign flight crew to the role of copilot of a rotorcraft if they:

- are authorised to pilot the rotorcraft as copilot under Part 61) (if the rotorcraft is an Australian aircraft)
- are authorised to pilot the rotorcraft as copilot by the rotorcraft's State of registry (if the rotorcraft is a foreign registered aircraft)
- have completed supervised line flying, on a rotorcraft of that aircraft type rating, as copilot for the number of sectors or flight hours detailed in your exposition.
- are qualified as PIC of the rotorcraft (see section 18.3 of this guide).

18.5 Assessing competence

(133.375)

Before assigning a person as a flight crew member to a flight you must ensure that the person has been assessed as competent to perform their assigned duties. This assessment must be according to the requirements set out in your exposition.

The minimum competency standards for every flight crew member, regardless of the kind of operation being conducted, are in Part 61 of CASR. Your minimum required level of competency must be equal to or better than those prescribed by Part 61 for the relevant class or type of rotorcraft, or the activity being performed. The specific competencies for your flight crew members may vary depending on the nature and complexity of the air transport operation being performed.

18.6 Persons approved to conduct training and checking

(133.377, MOS 12.03, 12.11 and 12.12)

Prior to your personnel undertaking training or a check, you must ensure that the training or check is conducted by either:

- a person who:
  - is engaged by you (by contract or other arrangement) to conduct the training or check
  - has met the minimum experience and entry control requirements, stated in your exposition, for a training pilot, check pilot, or training and check pilot (as applicable)
  - has completed the training program, for a training pilot, check pilot, or training and check pilot (as applicable) as detailed in your exposition
  - has met the relevant recency or proficiency requirements as detailed in your exposition
  - you have nominated, in writing, to be a training pilot, check pilot, or training and check pilot (as applicable) for your training and checking system
- a Part 142 operator with whom you have a contract for the Part 142 operator to conduct the training or check on your behalf.

Note: Your nomination must be made by an entry in your exposition or a document provided by you to CASA where you state that the person meets the requirements detailed in this section of the guide. Regardless of which notification method is used, either document is considered to be part of your exposition.

As with any change, the nomination of an individual to training and checking duties should be considered against the definition of a significant change. For most nominations this would not be considered as a significant change. See section 2.8 of this guide for details on compliance with significant changes.

Multi-Part AC 119-07 and AC 138-03 – Management of change for air transport and aerial work operators discusses management of change in a regulatory context. It is aimed at organisations that are required to have change processes. It seeks to explain the concept of management of change outside the scope of an SMS. It includes consideration of significant changes which require CASA approval, and the provision of guidance for the development of management of change processes and procedures.

The AC provides template procedures that CASA believes most aircraft operators could use to comply with operator change management requirements, with minimal customisation. Regardless of whether an operator is required to have an SMS, the CASR makes it an offence for an operator to make changes that are not in accordance with its documented process for making changes.

Note: CASA may elect to test the person you nominate in order to assess their competency for the role you have nominated. CASA must give the individual:

- written notice of the test
- the date, time and location of the test (these must be reasonable in the circumstances)
- a copy of the result of the test, including the CASA testing officer's assessment of their competency in the role.

18.7 Training and/or checking conducted in a foreign country

(133.377 and MOS 12.11)

You may elect to conduct training and/or checking activities in a foreign country using a foreign training organisation provided the:

- national aviation authority of the foreign State (the NAA) has approved the training organisation to conduct the required training and/or checking
- training organisation has a system under which successful completion of the competency checking is certified on the training organisation's relevant checking form by an employee of the training organisation who is also a delegate of the NAA for certifying flight crew competency of the kind checked
- your exposition includes the details of the training organisation's syllabus and completion standards for the training and/or checking event(s)
- foreign State is one recognised by CASA for the purposes of foreign flight simulators under regulation 61.010.

18.8 Training and checking requirements for flight crew

(MOS 12.02, 12.03, 12.04, 12.05, 12.06 and 12.07)

A flight crew member must meet the following training and checking requirements before conducting a flight in a rotorcraft for an operator:

- completed the operator's general emergency training and the operator's flight crew member general emergency check of competency (see table 29 of this guide)
- successfully completed the operator's conversion training under and the operator's flight crew member proficiency check (see table 29 of this guide)
- is undertaking, or has successfully completed, the operator's line training the operator's flight crew member line check (see table 29 of this guide)
- successfully completed the operator's differences training (if required) (see table 29 of this guide)
- successfully completed the operator's recurrent training and checking (see section 18.9 of this guide)
- successfully completed the operator's remedial training (if required) (see section 18.10 of this guide).

CASA EX77/24 Transitional Training and Checking Requirements for Crew Members in Part 133 Operations – Exemption Instrument 2024. CASA EX77/24 is a temporary exemption to assist rotorcraft operators and crew members in transitioning to new training and checking requirements. The exemption allows you to continue using certain previous training and checking activities, provided these were completed within specified timeframes. The exemption provides additional time for operators to fully comply with the new standards and only applies to crew members who have completed equivalent training and checking events under previous regulations within designated timeframes. Operators and crew members must meet specific criteria outlined in the exemption to benefit from the transitional provisions.

Table 29: Flight crew training and checking requirements

Type of Training	Requirements
general and emergency training	the training must include: › training in general emergency and survival procedures › training in aerodrome and rotorcraft security procedures › training in procedures for the location of, access to and use of, the emergency and safety equipment onboard › if life jackets and life rafts are required to be carried then training in ditching procedures, including in-water practical training, underwater escape and the use of life jackets and life rafts is required › if life rafts are not required but life jackets are carried then training in ditching procedures including in-water practical training, underwater escape and the use of life jackets is required
conversion training (and flight crew operator proficiency check)	the training must include: › the duties and responsibilities for the flight crew member's position › the standard operating procedures for the type or class of rotorcraft used for the flight › the normal, non-normal and emergency procedures for a rotorcraft of that type or class › any flight procedures or manoeuvres, conducted in a rotorcraft of that type or class, for which the operator holds e.g. using certain PBN navigation specifications › training in the procedures for any other operations conducted by the operator in a rotorcraft of that type or class that the flight crew member has not previously experienced e.g. offshore airborne radar approach operations or NVIS operations
line training and flight crew member line check	the training must be in: › the operator's safety management system's risk assessment and management practices › the procedures for the conduct of line operations › the procedures related to aerodrome ground handling, rotorcraft parking and public safety › the conduct of passenger handling, briefings and safety demonstrations (if passengers are carried) › the operator's specific area of operations, or routes if described in the exposition › specific aerodrome procedures if described in the exposition › pre-flight, and post-flight, activities relating to line operations
differences training	a flight crew member must have successfully completed your differences training for the rotorcraft as detailed in your exposition **Note:** The successful completion of the training is evidenced by a course completion certificate given to the flight crew member.

18.9 Recurrent training and checking

(MOS 12.08)

As a flight crew member, you must successfully complete your recurrent training and checking for the rotorcraft as detailed in table 30.

Table 30: Flight crew recurrent training and checking requirements

Type of recurrent training and checking	Time period requirements	Conditions
general emergency check of competency – underwater escape or the use of life rafts	not more than 3 years after the previous check	a check of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date
general emergency check of proficiency in other than underwater escape of the use of life rafts	not more than 1 year after the previous check	a check of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date
proficiency check for a flight crew member only conducting a flight under the VFR by day	initially 6 months after first commencing unsupervised line operations for you, and then at intervals of 1 year after the previous proficiency check	› the first check of competency after the initial check may be successfully completed within 30 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date › subsequent checks of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date
proficiency check for flight crew only conducting a flight under the VFR by day	initially 6 months after first commencing unsupervised line operations for you, and then at intervals of 6 months after the previous proficiency check	a check of competency after the initial check may be successfully completed within 30 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date

Initial general emergency training must incorporate in-water training for life jackets and life rafts if applicable to your operations. However, recurrent training and checking, in relation to the use of life rafts or life jackets does not need include in-water practical training.

A flight crew member who fails to demonstrate competency for a type or class of rotorcraft cannot conduct operations with that type or class until they complete the remedial training in section 18.10 of this guide.

Note: You must not assign a person to duty as a flight crew member if the person has not been assessed as competent according to your training and checking system (see section 18.8 of this guide).

18.10 Remedial training

(MOS 12.09)

This section applies if a flight crew member fails the flight crew member general emergency check of competency, or flight crew member proficiency check (see section 18.8 of this guide) for a specific type or class of rotorcraft.

Before being assigned to further duty as a flight crew member in the relevant type or class of rotorcraft, you must:

- successfully complete remedial training in the areas where the flight crew member failed to show competency for the type or class of rotorcraft, as identified in the general emergency or proficiency check
- then successfully complete the flight crew member general emergency check of competency or flight crew member proficiency check for the relevant type or class of rotorcraft
- then have the status of a flight crew member eligible to carry out unsupervised operations in the relevant type or class of rotorcraft reinstated by you as the operator.

18.11 Individuals who conduct training and checking

An individual is not required to be nominated if they hold one of the following:

- a Part 61 flight instructor rating with an appropriate training endorsement and current flight proficiency check in the class or type of rotorcraft to be used for the relevant training or check
- a Part 61 flight examiner rating with an appropriate flight examiner endorsement and current examiner proficiency check in the class or type of rotorcraft to be used for the relevant training or check
- an approval under regulation 61.040 that confers privileges equivalent for the relevant training or check.

18.12 Use of approved flight simulators

(MOS 12.13)

This section applies to a flight crew member for a rotorcraft of a type mentioned in the table 31.

Table 31: Types of rotorcraft

Rotorcraft type certificate holder or manufacturer	Rotorcraft models and variants
Agusta Westland Agusta Bell	AB/AW 139 AW 189
Airbus Rotorcrafts Aerospatiale Eurocopter or EADS	AS 332 L AS 332 L2 EC225 EC175
Sikorsky	S 76A series S 76B series S 76C series S 76D series S 70 S 92

A flight crew member may undertake conversion training (see section 18.8 of this guide) and/or a proficiency check in an available approved flight simulator or a rotorcraft.

If the training and check are conducted in a rotorcraft the following conditions must be met:

- the training or check must not be conducted where any non-normal exercises that disables a vital system of the rotorcraft in-flight is carried out
- any simulated non-normal exercises, carried out as part of the training or check, must be carried out using the rotorcraft's 1 engine inoperative training mode selector switch
- the training or check must have been risk-assessed, and managed, by you as the operator in accordance with your risk assessment and management processes stated in your exposition.

If a flight crew member has successfully completed your conversion training and proficiency check (as outlined in section 18.8 of this guide) in the rotorcraft, they must:

- complete their next proficiency check for the rotorcraft in an approved flight simulator
- complete at least one proficiency checks in an approved flight simulator each subsequent year.

If a flight crew member has completed your conversion training and proficiency check (as outlined section 18.8 of this guide) in an approved flight simulator, they:

- may complete their next proficiency check for the rotorcraft in either an approved flight simulator or the rotorcraft itself
- must complete at least one proficiency check in an approved flight simulator each subsequent year.

18.13 PIC in a non-command pilot's seat

(133.395 and MOS 12.15)

You must not assign the PIC to the non-command pilot's seat in any of the following circumstances unless the PIC holds a valid proficiency check as detailed in section 18.8 of this guide:

- operate the rotorcraft as PIC
- carry out the duties of copilot
- carry out training or examining duties.

The PIC is responsible for ensuring that they hold a valid proficiency check (as detailed in section 18.8 of this guide) for the operator and the rotorcraft to operate the rotorcraft in the non-command pilot's seat.

18.14 Knowledge of route and aerodromes

(133.400)

Your exposition must include the minimum knowledge the PIC must have of:

- the route of the flight
- the departure aerodrome and the planned destination aerodrome for the flight
- any alternate aerodrome requirements
- if the flight is to an unfamiliar aerodrome, any procedures contained in the exposition that relate to managing the safety of operations to an unfamiliar aerodrome.

You may require additional flight crew members due to a contractual requirement for some routes. In this the case, you must outline the requirements in your exposition when this is required and any minimum knowledge requirements of the additional crew.

In addition:

- the flight crew must be qualified to carry out the duties assigned by you for the flight (see sections 18.3 and 18.4 of this guide)
- at least one of the flight crew members must hold an instrument rating if the flight is a VFR flight at night and either
  - a passenger transport operation
  - a medical transport operation
- the PIC and the copilot (if any) for the flight must have the recent experience required in section 18.16 of this guide
- each flight crew member must meet the training and checking requirements for the flight (see section 18.8 of this guide)
- each flight crew member must have successfully completed differences training for the rotorcraft (if required).

18.15 Assigning flight crew to different multi-engine rotorcraft

(133.410 and 133.415)

If you operate more than one type of rotorcraft your exposition must include the following:

- a description of the circumstances in which you may assign a flight crew member to duty on 2 or more different multi-engine rotorcraft
- the combinations of different rotorcraft that a single flight crew member may be assigned to duty
- the flying experience, checks and training that a flight crew member must gain or complete before being assigned to duty on 2 or more different multi-engine rotorcraft
- procedures to ensure that, if a flight crew member is assigned to duty on 2 or more different multi-engine rotorcraft within one tour of duty, the flight crew member has adequate time between flights on the different rotorcraft for the flight crew member to prepare for duty.

18.16 Recent experience (90 days before flight)

(133.420)

You must not assign a PIC or copilot for duty unless they meet the recency requirements of table 32.

A pilot of a rotorcraft (PIC or copilot) must not operate a rotorcraft unless they meet the recency requirement of table 32.

Table 32: Recent experience requirements (90 days before flight)

Type of Flight	Requirements for the pilot (PIC or copilot, as applicable)
flights by day	within 90 days before the flight completed one of the following: › in a rotorcraft of that kind or approved flight simulator: » at least 3 take-offs followed by climbs to at least 500 ft AGL while controlling the rotorcraft or simulator » at least 3 landings while controlling the rotorcraft or simulator › passed a flight test for the grant of a pilot licence or a rating in a rotorcraft of that kind or an approved flight simulator for the rotorcraft › successfully completed a proficiency check for the rotorcraft that complies with the requirements prescribed by the MOS (see section 18.8 of this guide)
flights by night	within 90 days before the flight completed one of the following at night in a rotorcraft of that kind or under night-time conditions in an approved flight simulator either: › Both of: » at least 3 take-offs followed by climbs to at least 500 ft AGL while controlling the rotorcraft or simulator » at least 3 landings while controlling the rotorcraft or simulator › passed a flight test for the grant of a pilot licence or a rating on a pilot licence in a rotorcraft of that kind or an approved flight simulator for the rotorcraft › successfully completed a proficiency check for the rotorcraft that complies with the requirements prescribed by the MOS (see section 18.8 of this guide)

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CHAPTER 19
CABIN CREW

19.1 Overview

This chapter details the requirements for cabin crew and covers:

- the number of cabin crew needed
- the minimum age requirements
- the training and checking system
- the qualifications and competence of cabin crew
- English proficiency requirements
- minimum experience requirements.

19.2 Number of cabin crew required

(133.425 and MOS 13.01)

A cabin crew member must be carried when:

- the rotorcraft's passenger seating compartment is configured such that there is a longitudinal aisle between the rows of seating
- there are at least 20 passengers carried on the flight.

19.3 Competence

(133.430)

You must only assign a person to duty as a cabin crew member for a flight if the person has been assessed, in accordance with your exposition, as competent to perform their duties.

19.4 Minimum age

(133.435)

A cabin crew member must be 18 years or older.

19.5 English proficiency

(133.440)

A cabin crew member assigned by you for a flight must meet the ICAO level 4, 5 or 6 aviation English language proficiency standards mentioned in the Part 61 MOS.

19.6 Qualifications of cabin crew

(133.425, MOS 13.02 and 14.04–14.08)

A cabin crew member must meet the following training and checking requirements before being rostered for duty on a flight:

- successfully completed the cabin crew general emergency training and general emergency check of competency
- successfully completed the conversion training and the proficiency check
- is undertaking, or has successfully completed, the cabin crew line training and line check
- successfully completed differences training (if applicable)
- successfully completed recurrent training and checking
- successfully completed remedial training (if required).

See Appendix C of this guide for details of the required training, proficiency checks and remedial training requirements.

Recurrent training for cabin crew in the use of life rafts or life jackets does not need to include in-water practical training.

19.7 Cabin crew member training and checking

(133.425 and MOS 13.01, 13.02 and 13.03)

The Part 133 MOS prescribes requirements relating to training and checking that must be completed by a cabin crew member for a flight of a rotorcraft:

- if there are 20 or more passengers carried on the flight, the rotorcraft's passenger seating compartment must be configured so that there is a longitudinal aisle between the rows of seating
- if a reference is made under Divisions 1 and 2 of chapter 14 of the MOS, the requirements for an air crew member also apply to a cabin crew member
- if a cabin crew member undergoes training or a check required (under regulation 133.425 or section 13.02) references to a training air crew member means a training cabin crew member.

19.8 Senior cabin crew member

Assigning a senior cabin crew member

(133.445)

If there is more than one cabin crew member for the flight, you must assign one person to the role of the senior cabin crew member.

Training and checking requirements for senior cabin crew member

(133.450)

Before you assign a senior cabin crew member you must ensure they have successfully completed the training and checking requirements for a senior cabin crew member as set out in your exposition.


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CHAPTER 20
AIR CREW

20.1 Overview

This chapter details the requirements for air crew and includes:

- details on persons who may be approved to conduct training
- training and checking requirements
- recurrent training and checking requirements
- competence of air crew
- English proficiency requirements.

20.2 Person approved to conduct training and checking

(MOS 14.11 and 14.12)

Training or check must be conducted by a person who has:

- met the minimum experience and entry control requirements, stated in your exposition, for a training air crew member, check air crew member, or training and check air crew member (as applicable)
- completed the training program, for a training air crew member, check air crew member, or training and check air crew member, as applicable, included in the exposition
- met the relevant recency or proficiency requirements that are required for the conduct of the training or check, as stated in the exposition
- been nominated by you as the operator to be a training air crew member, check air crew member, or training and check air crew member, as applicable, for your training and checking system.

Note: CASA may elect to test the person you nominate in order to assess their competency for the role you have nominated. CASA must give the individual:

- written notice of the test
- the date, time and location of the test (these must be reasonable in the circumstances)
- a copy of the result of the test, including the CASA testing officer's assessment of their competency in the role.

20.3 Training and checking requirements for air crew

(133.455, MOS 14.03, 14.04, 14.05, 14.06 and 14.07)

An air crew member must meet the following training and checking requirements before conducting a flight in a rotorcraft for your operation:

- successfully completed general emergency training and the air crew member general emergency check of competency (see table 33 of this guide)
- successfully completed conversion training and the air crew member proficiency check (see table 33 of this guide)
- is undertaking, or has successfully completed, line training and the air crew member line check (see table 33 of this guide)
- successfully completed differences training (if required) (see table 33 of this guide)
- successfully completed recurrent training and checking (see section 20.4 of this guide)
- successfully completed remedial training (if required) (see section 20.5 of this guide).

Table 33: Air crew training and checking requirements

Type of Training	Requirements
general and emergency training	the training must include: › training in general emergency and survival procedures › training in aerodrome and rotorcraft security procedures › training in procedures for the location of, access to and use of, the emergency and safety equipment onboard › if life jackets and life rafts are required to be carried then training in ditching procedures, including in-water practical training, underwater escape and the use of life jackets and life rafts is required › if life rafts are not required but life jackets are carried then training in ditching procedures including in-water practical training, underwater escape and the use of life jackets is required
conversion training and air crew operator proficiency check	the training must include: › the duties and responsibilities for the air crew member's position › the standard operating procedures for the type or class of rotorcraft used for the flight › the normal, non-normal and emergency procedures for a rotorcraft of that type or class › training in the procedures for any other operations conducted by the operator in a rotorcraft of that type or class that the flight crew member has not previously experienced e.g. offshore airborne radar approach operations or NVIS operations
line training and air crew member line check	the training must be in: › the operator's safety management system's risk assessment and management practices › the procedures for the conduct of line operations › the procedures related to aerodrome ground handling, rotorcraft parking and public safety › the conduct of passenger handling, briefings and safety demonstrations (if passengers are carried) › the operator's specific area of operations if described in the exposition › pre-flight, and post-flight, activities relating to line operations
differences training	the training must be in: › the limitations or systems of a rotorcraft if that kind is the kind that the air crew member has not previously received training for › the location, and use, of equipment if the equipment on the rotorcraft if that kind is the kind that the air crew member has not previously received training for › normal and emergency procedures for a rotorcraft if that kind is the kind that the air crew member has not previously received training

20.4 Recurrent training and checking

(MOS 14.08)

As an air crew member, you must successfully complete the operator's recurrent training and checking for the rotorcraft as detailed in table 34.

As an operator your initial general emergency training must incorporate in-water training for life jackets and life rafts if applicable to your operations. However, recurrent training and checking, in relation to the use of life rafts or life jackets does not need include in-water practical training.

An air crew member who fails to demonstrate competency for a type or class of rotorcraft cannot conduct operations with that type or class until they complete the remedial training in section 20.5 of this guide.

> **Note:** As an operator you must not assign a person to duty as an air crew member if the person has not been assessed as competent according to your training and checking system (see section 20.6 of this guide).

Table 34: Air crew recurrent training and checking requirements

Type of recurrent training and checking	Time period requirements	Conditions
general emergency check of competency – underwater escape or the use of life rafts	not more than 3 years after the previous check	a check of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date
general emergency check of proficiency in other than underwater escape of the use of life rafts	not more than 1 year after the previous check	a check of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date
proficiency check for an air crew member for the relevant kind of rotorcraft	initially 1 year after first commencing unsupervised line operations for the operator, and then at intervals of 1 year after the previous proficiency check	checks of competency may be successfully completed within 90 days before, or after, its due date is taken to meet the requirements as if it had been completed on the due date

20.5 Remedial training

(MOS 14.09)

This section applies if an air crew member fails your air crew member general emergency check of competency, or air crew member proficiency check.

The air crew member must have successfully completed your documented remedial training for the relevant kind of rotorcraft.

Before you assign the person to duty as an air crew member for a flight in the relevant kind of rotorcraft, you must ensure the air crew member has:

- successfully completed a remedial training program for the areas where the air crew member failed to show competency for the specific type of rotorcraft, as identified in the general emergency competency check or proficiency check
- successfully completed your air crew member general emergency check of competency or air crew member proficiency check for the relevant kind of rotorcraft
- you have changed the status of the air crew member to be eligible to perform the duties of an air crew member in the relevant kind of rotorcraft.

20.6 Competence

(133.460)

You must only assign a person to duty as an air crew member if they have been assessed as competent to perform the duties assigned, in accordance with your exposition.

20.7 English proficiency

(133.465)

An air crew member assigned by you for a flight must meet the ICAO level 4, 5 or 6 aviation English language proficiency standards mentioned in the Part 61 MOS.


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CHAPTER 21
MEDICAL TRANSPORT SPECIALISTS

21.1 Overview

This chapter details the requirements for medical transport specialist and includes:

- training and checking requirements
- who can provide the training and checking
- emergency training requirements
- conversion, line, recurrent and remedial training
- proficiency and competency checks
- differences training (if required).

21.2 Training and checking

(133.470 and MOS 15.03)

If a medical transport specialist is required for the flight, they must meet the training and checking requirements as outlined in the Part 133 MOS.

A medical transport specialist meets the training and checking requirements for the medical transport specialist and flight if:

- the medical transport specialist has successfully completed your general emergency training and the medical transport specialist general emergency check of competency
- the medical transport specialist has successfully completed your conversion training and the medical transport specialist proficiency check
- the medical transport specialist is undertaking, or has successfully completed, your line training and the medical transport specialist line check
- the medical transport specialist has successfully completed your differences training if required
- the medical transport specialist has successfully completed your recurrent training and checking
- the medical transport specialist has successfully completed your remedial training if required.

21.3 Requirements for individual conducting training and checking

(MOS 15.11)

The training or check must be conducted by an individual who has:

- met the minimum experience and entry control requirements, stated in your exposition, for a training medical transport specialist, check medical transport specialist, or training and check medical transport specialist, as applicable
- completed the training program, for a training medical transport specialist, check medical transport specialist, or training and check medical transport specialist (as applicable) that is included in your exposition
- met the relevant recency or proficiency requirements as required for the conduct of the training or check, as stated in your exposition
- been nominated by you to be a training medical transport specialist, check medical transport specialist, or training and check medical transport specialist, as applicable, for your training and checking system.
- the approved person must be made by entering their name in your exposition or document provided to CASA, and state that the individual meets the requirements stated above.


Mark Ogden

21.4 CASA may test a nominated individual

(MOS 15.12)

CASA may test an individual you have nominated to be a training medical transport specialist, check medical transport specialist, or training and check medical transport specialist to assess the individual's competency in the role.

> **Note:** If CASA conducts a test of the individual and determines that the individual should not be permitted to conduct training or checks under this chapter, then CASA has the power (under Subpart 11.G) to direct the individual to undertake further training before commencing, or continuing, in the role.

CASA must give the individual written notice of the test. The date, time and location of the test must be reasonable in the circumstances.

CASA must give the individual a copy of the result of the test, including the CASA testing officer's assessment of the individual's competency in the role.

21.5 General emergency training

(MOS 15.04)

The medical transport specialist must have successfully completed your general emergency training for the rotorcraft. The training must include:

- general emergency and survival procedures
- aerodrome and rotorcraft security procedures
- procedures for the location of, access to, and use of, the emergency and safety equipment on the rotorcraft
- ditching procedures, and training, including in-water practical training, in underwater escape and the use of life jackets and life rafts, if life jackets and life rafts are required to be carried on the rotorcraft for the flight
- ditching procedures, and training, including in-water practical training, in underwater escape and the use of life jackets, for a flight where ditching procedures do not apply, but for which life jackets are required to be carried on the rotorcraft.

21.6 Conversion training and medical transport specialist proficiency check

(MOS 15.05)

The medical transport specialist must have successfully completed your conversion training, and medical transport specialist proficiency check, for the rotorcraft. The training must include:

- the duties and responsibilities for the medical transport specialist's position
- the standard operating procedures for the kind of rotorcraft used for the flight
- normal, non-normal and emergency procedures for a rotorcraft of that kind
- the procedures for any other operations conducted by you in a rotorcraft of that kind that the medical transport specialist has not previously experienced, for example, winching operations.

21.7 Line training and medical transport specialist line check

(MOS 15.06)

The medical transport specialist must be undertaking or have successfully completed your line training and medical transport specialist line check, for the rotorcraft. The training must include:

- your safety management system's risk assessment and management practices
- the procedures for the conduct of line operations
- the procedures related to aerodrome ground handling, rotorcraft parking and public safety
- the conduct of medical patient handling, briefings and safety demonstrations, if medical patients are carried on the flight
- any other specific areas of operations, if required
- pre-flight and post-flight activities relating to line operations.

21.8 Differences training

(MOS 15.07)

If required, the medical transport specialist must have successfully completed your differences training for the specific rotorcraft. The training must include:

- the limitations or systems of the rotorcraft, if they are of a type for which the medical transport specialist has not previously received
- the location and use of the rotorcraft's equipment, if it is of a type for which the medical transport specialist has not previously been trained
- the normal and emergency procedures of the rotorcraft, if they are of a type for which the medical transport specialist has not previously received training.

21.9 Recurrent training and checking

(133.475 and MOS 15.08)

The medical transport specialist must successfully complete your recurrent training and checking for the rotorcraft.

Training on the use of life rafts or life jackets does not need to include in-water practical training.

The medical transport specialist must successfully undertake your medical transport specialist general emergency check of competency, for the relevant kind of rotorcraft:

- for underwater escape or life raft use: every 3 years (with a grace period of 90 days before or after the due date)
- for other emergency procedures: every year (with the same grace period).

The medical transport specialist must successfully pass a proficiency check:

- 1 year after starting unsupervised line operations
- annually thereafter after the previous proficiency check (with a 90-day grace period for each check).

If the medical transport specialist fails to show competency, they cannot perform their duties until they complete remedial training.

21.10 Remedial training

(MOS 15.09)

If a medical transport specialist fails:

- the medical transport specialist general emergency check of competency
- medical transport specialist proficiency check

They must have successfully completed your remedial training for the relevant kind of rotorcraft.

Before the medical transport specialist is assigned to duty as a medical transport specialist for a flight in the relevant kind of rotorcraft, the medical transport specialist must:

- successfully complete a program of remedial training in which they failed to demonstrate competency
- successfully complete the medical transport specialist general emergency check of competency or medical transport specialist proficiency check, as the case requires
- have their eligibility to perform medical transport specialist duties reinstated.

21.11 Competence

(133.475)

The medical transport specialist must be assessed by you, as competent to perform the duties assigned to the person, in accordance with your exposition.

CHAPTER 22
TRAINING AND CHECKING FOR OPERATIONAL SAFETY CRITICAL PERSONNEL

22.1 Overview

This chapter details the training and checking requirements applicable to operational safety-critical personnel and covers:

› the documentation required for your training and checking system

› the training and assessing of operational safety-critical personnel in human factors and non-technical skills.

22.2 Training and checking system

(119.170)

This section does not apply to either:

› authorised Part 141 training

› training and checking that is an authorised Part 142 activity.

Your training and checking system must be documented in your exposition and include the requirements of table 35.

Table 35: Training and checking system requirements

Requirements of your training and checking system for personnel	Flight crew	Cabin crew	Operational safety critical personnel (other than flight crew and cabin crew)
a description of how training and checking, including recurrent training and line checking, is conducted	✔	✔	✔
an auditable system for maintaining records of training and checking results	✔	✔	✔
procedures to ensure flight crew and cabin crew: › completes training and checking in accordance with the training and checking system › is supervised effectively during training and checking	✔	✔	
a description of how you assess competence to perform the duties assigned for a flight	✔	✔	
the circumstances in which training is required to familiarise personnel with their duties		✔	✔
a description of your system for training and assessing if any of the training or checking is conducted by a member of your personnel		✔	✔

Note: Training of operational safety critical personnel is only required if you conduct one of more of the following operations:

- operations in a rotorcraft with a MTOW of more than 3,715 kg and a maximum operational passenger seat configuration of 9 seats
- medical transport operations.

If you have a contract with a person for them to conduct training or checking of your personnel (as listed in table 35), then your exposition must contain the following about the person:

- details of the person
- details of the training or checking covered by the contract
- details of how you ensure the person is complying with your training and checking system.

You must also conduct relevant flight checking for flight crew if you conduct:

- passenger operations in rotorcraft with a maximum operational passenger seating configuration of more than 30 seats
- cargo transport operations with a payload capacity of at least 3,410 kg.

22.3 Program for training and assessment in human factors principles and non-technical skills

(119.175)

You must have a program for training and assessing operational safety critical personnel in human factors principles (HF) and non-technical skills (NTS) as outlined in your exposition.

22.4 Training in human factors principles and non-technical skills for flight crew etc.

(119.180 and 119.185)

The following personnel must not perform their duties unless they meet the requirements of training in human factors principles and non-technical skills as specified in your exposition:

- flight crew members
- cabin crew members
- air crew members
- medical transport specialists
- flight dispatcher.

Other identified safety critical personnel must undertake human factors and non-technical skills training (as specified in your exposition) within 3 months of joining your operations.

CHAPTER 23
NIGHT VISION IMAGING SYSTEM (NVIS) FLIGHTS

23.1 Overview

(133.265 and MOS 8.01A)

This section applies to the use of night vision imaging systems (NVIS) by flight crew members and any person is involved in air navigation or terrain avoidance functions of an aircraft in an NVIS flight.

If a rotorcraft has a night vision imaging system (NVIS) and the flight is conducted under the IFR or the night VFR then your procedures must include:

- how to use the night vision imaging system during these flights
- how to conduct the flight if part of the night vision system isn't working.

23.2 General requirements for NVIS flights

(MOS 8.03, 8.04, 8.05 and 8.06)

Before conducting an NVIS operation for the first time you must apply for, and obtain, the written approval of CASA under a significant change application.

CASA EX68/24 – Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2024 details the requirements for first use of NVIS in an NVIS operation under Part 133 of CASR.

A rotorcraft conducting a NVIS flight must have a certified NVIS pilot and can only take-off from and land on:

- a helicopter landing site (HLS) that meets NVIS standard requirements
- an HLS that meets basic NVIS requirements, refer to the explainer below.

Any air crew member using NVIS during the flight must be certified as an NVIS air crew member or under training/testing to become NVIS certified.

The PIC must not engage in formation flying while conducting NVIS flying.

Explainer: Rotorcraft Landing sites for NVIS operations

HLS-NVIS standard is a landing site that meets the following requirements:

- the final approach and take-off area (FATO) must:
  - enclose a circle with a diameter 1.5 times the rotorcraft's D-Value
  - be free of obstacles that could interfere with rotorcraft movement
  - have a safety area around the FATO that is 0.25 times the D-Value or 3 meters, whichever is larger
- the touchdown and lift-off area (TLOF) must:
  - be a clear, stable area that can handle the rotorcraft's dynamic loads
  - be 0.83 times the rotorcraft's D-Value in size.

For NVIS operations only, an HLS-NVIS standard can also include a landing site that meets the safety criteria determined by you through a risk assessment.

HLS-NVIS basic

A rotorcraft in an NVIS flight must only land on or take-off from an HLS-NVIS basic during NVIS operations.

The NVIS crew for these operations must include:

- At least 2 NVIS pilots or:
  - 1 NVIS pilot and at least 1 NVIS air crew member
  - 1 NVIS pilot, if you have CASA approval based on a detailed risk assessment and conditions (if any).
  - 1 NVIS pilot, if the flight is conducted according to your CASA approval which is based on a detailed risk assessment.

23.3 Alternate lighting requirements for NVIS flights

(MOS 8.07)

If an NVIS flight is conducted to a planned destination aerodrome that does not have runway or HLS lighting, then the pilot must nominate a destination alternate aerodrome with lighting for the runway or HLS.

> **Note:** This requirement does not apply if the NVIS flight is:
>
> › an NVIS operation
>
> › conducted by one of the following combinations of crew:
>
> » at least 2 NVIS pilots
>
> » one NVIS pilot and one NVIS trainee pilot
>
> » one NVIS pilot and at least one NVIS air crew member.

23.4 NVIS requirements for medical transport operations

Helicopter lighting during an NVIS operation

(MOS 8.08)

If the optimum performance of the NVIS is affected (or is likely to be affected), by the rotorcraft's exterior lighting, the PIC must either:

› turn off the exterior lighting if satisfied that there is no risk of collision with another aircraft

› immediately cease the NVIS operation if satisfied that there is such a risk.

> **Note:** On ceasing the operation, the PIC, if at a lower altitude, must immediately climb to at least the minimum altitude for a VFR flight at night, or an IFR flight, conducted without the use of NVIS.

Martin Bass

Minimum height under the NVFR or the IFR in an NVIS operation

(MOS 8.09)

See section 11.7 of this guide for the requirements for IFR flight and VFR flight below the minimum height in other than an NVIS operation.

When an NVIS operation is conducted at a height below that described in section 11.7 of this guide then NVIS must be used by each NVIS pilot and each NVIS crew member who is involved in the operation.

If a single NVIS pilot is the only NVIS crew member the operation must be conducted at or above 1,000 ft AGL (except for manoeuvres necessary for take-off and landing) unless it is:

- operationally necessary
- not conducted below 500 ft AGL
- the subject a detailed risk assessment given to CASA and you hold a CASA approval for the operation that is based on the risk assessment.

In other than an NVIS operation with a single NVIS pilot as the only crew member the PIC may degoggle as an individual or permit all or certain air crew to degoggle provided the degoggling enhances operational safety when either:

- below 500 ft in a hover
- all the following apply:
  - the performance of the NVIS used by an NVIS pilot or NVIS air crew member is degraded because of extensive illumination in the area being overflown
  - the continued use of the NVIS in such circumstances is likely to affect operational safety
  - terrain and obstacles in the area may be visually identified and avoided.

Weather requirements – cloud

(MOS 8.10)

The PIC of an NVIS operation must comply with one of the following:

- in-flight cloud requirements as detailed in table 36: In-flight cloud requirements
- in-flight cloud requirements that are lower than detailed in table 36 (reduced in-flight cloud requirements) but only if the lower requirements are:
  - operationally necessary
  - the subject a detailed risk assessment given to CASA and you hold a relevant CASA approval.

Table 36: In-flight cloud requirements

NVIS rotorcraft and crew	Kind of NVIS operation	Minimum in-flight cloud requirement
NVFR capable with 2 NVIS crew members	under the VFR	no more than scattered cloud up to 2,000 ft AGL within 2 NM either side of track
IFR capable	under the VFR	no more than scattered cloud up to 1,000 ft AGL within 2 NM either side of track
IFR capable	under the IFR below LSALT	no more than scattered cloud up to 1,000 ft AGL within 2 NM either side of track

If either of the following apply then the NVIS pilot must comply with night VFR weather minima:

- an NVIS operation is NVFR capable
- the NVIS crew is only a single NVIS pilot.

APPENDICES

Appendix A: Acronyms and abbreviations

Term	Meaning
AAI	authorised aeronautical information
AC	advisory circular
ADF	Australian Defence Force
ADF	automatic direction finder
ADS-B	automatic dependent surveillance – broadcast
AELP	aviation English language proficiency
AFM	aircraft flight manual
AGL	above ground level
AIP	aeronautical information publication
AIP ERSA	aeronautical information publication – En Route Supplement Australia
AIS	aeronautical information service
ALA	aircraft landing area
AMC/GM	acceptable means of compliance and guidance material
AMSA	Australia Maritime Safety Authority
ANZA	Australia and New Zealand Aviation
APU	auxiliary power unit
AOC	air operator's certificate
ASIC	aviation security identification card
AVID	aviation Identification
AWAL	Australian Warbirds Limited
AS/NZS	Australian standard/New Zealand standard
ATC	air traffic control
ATPL	air transport pilot licence
ATS	air traffic services
AWB	airworthiness bulletin
BIF	basic instrument flight – only appears in the definitions page 148
BTPD	body temperature and pressure dry
CAA	Civil Aviation Act
CAO	Civil Aviation Orders
CAR	Civil Aviation Regulations (1988)
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
CAT	category
CEO	chief executive officer

Term	Meaning
CFIT	controlled flight into terrain
CofA	certificate of airworthiness
CO	carbon monoxide
CPL	commercial pilot licence
CVR	cockpit voice recorder
DI	direction indicator
EASA	European Aviation Safety Agency
EFB	electronic flight bag
EFIS	electronic flight instrument system
ELP	English language proficiency
ELT	emergency locator transmitter
ELT(AD)	automatic deployable ELT
ELT(AP)	automatic portable ELT
ELT(S)	survival ELT
EMI	electromagnetic interference
ERSA	En Route Supplement Australia
EVDS	electronic visual distress signals
FAA	Federal Aviation Administration (United States of America)
FAR	Federal Aviation Regulation (United States of America)
FATO	final approach and take-off area
FDAP	flight data analysis program
FDE	fault detection and exclusion
FDR	flight data recorder
FIR	flight information region
FL	flight level
FOV	field of view
GM	guidance material
GNSS	global navigation satellite system
GPS	global positioning system
HF	high frequency
HF	human factors
HLS	helicopter landing site
HOFO	head of flying operations
HOTC	head of training and checking
hPa	hectopascals
HPL	horizontal protection level

Term	Meaning
HSI	horizontal situation indicator
HV	high voltage
HTAWS	helicopter terrain and awareness and warning system
ICAO	International Civil Aviation Organisation
ID	identification
IFR	instrument flight rules
IMC	instrument meteorological conditions
IR	infra-red
ISA	international standard atmosphere – only appears in definition appendix
IVSI	instantaneous vertical speed indicator
LSALT	lowest safe altitude
LVTO	low visibility take-off
MEL	minimum equipment list
MMEL	master minimum equipment list
MOS	manual of standards
MOPSC	maximum operational passenger seat configuration
MTO	medical transport operation
MTOW	maximum take-off weight
NAA	National Aviation Authority
NACp	navigation accuracy category – position
NAV	navigation
NIC	navigation integrity category – position
NOTAMS	notices to airmen
NM	nautical mile
NTS	non-technical skills
NUCp	navigation uncertainty category – position
NVG	night vision goggles
NVIS	night vision imaging system
OEM	original equipment manufacturer
PBE	personal breathing equipment
PBN	performance based navigation
PC1	performance class 1
PC2	performance class 2
PC2WE	performance class 2 with exposure
PED	portable electronic devices
PFD	primary flight display
PIC	pilot in command
PICUS	pilot in command under supervision
POH	pilot operating handbook
RNP	required navigation performance
RPT	regular public transport
SARP	standards and recommended practices
SATCOM	satellite communication
SIL	source integrity level
SOP	standard operating procedures
SM	safety manager
SMS	safety management system
SSR	secondary surveillance radar
STC	supplemental type certificate
STPD	standard temperature and pressure dry
TAWS	terrain awareness and warning system
TC	type certificate
TCDS	type certificate data sheet
TLOF	touchdown and lift-off area
TSO	technical standards orders
VHF	very high frequency
VMC	visual meteorological conditions
VFR	visual flight rules
VOR	very high frequency (VHF) omnidirectional range
VTOSS	vertical take-off speed

Appendix B: Definitions

Term	Meaning
accident (Chapter 1 of ICAO Annex 19)	an occurrence associated with the operation of an aircraft. In the case of a manned aircraft, it takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked. In the case of an unmanned aircraft, it takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which: › a person is fatally or seriously injured as a result of: › being in the aircraft › direct contact with any part of the aircraft, including parts which have become detached from the aircraft › direct exposure to jet blast › except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew the aircraft sustains damage or structural failure which: › adversely affects the structural strength, performance or flight characteristics of the aircraft would normally require major repair or replacement of the affected component, › except for engine failure or damage, when the damage is limited to a single-engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear and those resulting from hail or bird strike (including holes in the radome); or › the aircraft is missing or is completely inaccessible **Note:** An aircraft in this definition is referring to a rotorcraft.
ADS-B OUT	the functional capability of an aircraft or vehicle to periodically broadcast its state vector (position and velocity) and other information derived from on-board systems in a format suitable for ADS-B IN capable receivers
adverse event	any event or incident in which life or property is either: › lost, injured or damaged in, on or by a rotorcraft in which NVIS are used › at significant risk of loss or damage in, on or by a rotorcraft **Note:** The following are some examples of significant risks: a near miss; NVIS equipment failure, malfunction or abnormal operation; the failure, malfunction or abnormal operation of NVIS related or affected equipment; unintentional IMC penetration; inadvertent loss of visibility; abnormal degree or accelerated onset of fatigue.
aeronautical experience (regulation 61.075)	for a pilot, the total of: › the person's flight time as a pilot › the person's simulated flight time
Aeronautical Information Publication (AIP)	an official publication containing regulations, procedures, and other information necessary for safe flight operations

Term	Meaning
alternate aerodrome	an airport specified in a flight plan where a rotorcraft may land if landing at the intended destination becomes inadvisable
AOC (Air Operator's Certificate)	a certificate issued by CASA authorising an operator to conduct air transport operations
approved ADS-B OUT equipment configuration	an equipment configuration capable of ADS-B OUT operation on the ground and in flight, and that is one of the following: › an approved Mode S transponder with ADS-B capability connected to an approved GNSS position source › an alternate ADS-B OUT equipment configuration meeting the requirements stated in section 11.57 › another system approved in writing by CASA as having a level of performance equivalent to a system mentioned in the two points above
approved flight simulator	a flight simulator is an approved flight simulator for a purpose if: › a Part 141 operator's operations manual, or a Part 142 operator's exposition, states that the simulator may be used for the purpose › the operator of the simulator holds an approval under regulation 60.055 to use the simulator for the purpose › the simulator is qualified (however described) by the national aviation authority of a recognised foreign state approved for the purpose by the national aviation authority
approved GNSS position source	a GNSS position source that is: › authorised by the FAA, or EASA, in accordance with one of the following: » ETSO-C145a » ETSO-C146a » ETSO-C196a; or › an alternate GNSS position source meeting the requirements stated in section 11.56; or › another system approved in writing by CASA as having a level of performance equivalent to performance in accordance with the two points above
approved Mode A/C transponder	a Mode A transponder, or Mode C transponder, which is authorised either: › by CASA, or the NAA of a recognised country, in accordance with TSO-C74c or ETSO-C74d › by CASA in accordance with ATSO–1C74c
approved Mode S transponder	a Mode S transponder that is: › authorised by CASA, or the NAA of a recognised country, in accordance with TSO-C112 or ETSO–2C112a; or › another system approved in writing by CASA as having a level of performance equivalent to a system mentioned above
approved Mode S transponder with ADS-B capability	an approved Mode S transponder that is: › authorised by CASA, or the NAA of a recognised country, in accordance with ETSO-C166; or › another system approved in writing by CASA as having a level of performance equivalent to a system mentioned above

Term	Meaning
Approved Training Organisation (ATO)	an entity approved by CASA to conduct flight crew training programs
approved transponder	an approved Mode A/C transponder or approved Mode S transponder
assigned aircraft address	an aircraft address that is assigned to an aircraft by: › when the aircraft is registered on the Australian Civil Aircraft Register – CASA; or › when the aircraft is a foreign-registered aircraft – the relevant NAA
Australian registered aircraft	an aircraft registered in Australia
aviation English language proficiency	an aviation English language proficiency assessment conducted under regulation 61.255
cargo manifest	a document listing all cargo on board, including special handling instructions
Category A rotorcraft	a multi-engine rotorcraft designed with engine and system redundancy, capable of safe flight and landing following an engine failure
certificate of airworthiness (CofA)	a document certifying that an aircraft meets the required safety and airworthiness standard
checklists (normal, abnormal, emergency)	standardised lists of actions for pilots and crew to follow for safe rotorcraft operation
contingency procedures	predefined actions for handling unexpected situations during flight operations
differences training	additional training required for a pilot transitioning to a rotorcraft with different operating characteristics
duration (of flight)	for a flight in a rotorcraft – the time from the moment the aircraft begins moving, whether or not under its own power, in preparation for flight until the moment it comes to rest at the end of the flight
EASA AMC 20–24	Annex II to ED Decision 2008/004/R titled Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter, dated 2 May 2008, of EASA
EASA CS-ACNS	Annex I to ED Decision 2013/031/R titled Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS-ACNS, dated 17 December 2013, of EASA, or any later version
electronic flight bag (EFB)	a digital system replacing paper-based flight documents, including charts, manuals, and checklists
emergency locator transmitter (ELT)	a device that transmits distress signals in case of an aircraft emergency or crash
emergency procedures	defined actions taken in response to emergency situations, such as system failures or adverse weather
enhanced vision system (EVS)	a technology that improves situational awareness in low-visibility conditions using infrared or other sensors
EHS DAPs	Mode S EHS downlink aircraft parameters
exceedance report	a report documenting instances where operational limits (e.g. speed, altitude, engine performance) were exceeded

Term	Meaning
exemption	a formal authorisation granted by CASA allowing deviation from specific regulatory requirements under defined conditions
exposition	the terms "operations manual" and "exposition" are synonymous and is a means to describe how an organisation will comply with all applicable legislative requirements, and how they will manage the safety of their operations. This objective may be achieved with a single document, or a set of documents
fatigue risk management system (FRMS)	a structured approach to managing fatigue-related risks in aviation
fault detection and exclusion (FDE)	a feature of a GNSS receiver that excludes faulty satellites from position computation
final approach and take-off area (FATO)	has the meaning given by the CASR Dictionary
flight crew licence	a pilot licence
flight crew licensing (FCL)	regulations governing the qualifications and certification of pilots and crew members
flight crew member	a crew member who is a pilot or flight engineer assigned to carry out duties essential to the operation of an aircraft during flight time
flight data analysis program (FDAP)	a system for collecting and analysing flight data to enhance operational safety
flight duty period (FDP)	the total time a crew member is required to be on duty, including pre-flight and post-flight duties
flight manual (AFM/POH)	a document provided by the rotorcraft manufacturer containing operating procedures, limitations, and performance data for a rotorcraft
flight preparation form	a document signed by the PIC to certify that all operational and safety requirements are met before a flight
flight review	an assessment of the competency of a flight crew member to perform for the holder of a pilot licence or flight engineer licence – an activity authorised by a flight crew rating that the crew member holds
flight simulator	for a specific type (or a specific make, model and series) of rotorcraft a simulator that simulates the rotorcraft in ground and flight operations and comprises: › a full size replica of the flight deck of the aircraft › a visual system providing an out of the flight deck view › a force cueing motion system › includes the necessary software and equipment and the way that the equipment is interconnected
flight technical log	a document recording the operational and technical status of a rotorcraft
flight test	a test conducted under regulation 61.245 for the licence, rating or endorsement
fuel reserves	the minimum required fuel onboard to ensure safe operation in case of delays or diversions
hazard identification	the process of recognising conditions or activities that could cause harm or pose operational risks

Term	Meaning
head-up display (HUD)	a transparent display in the pilot's line of sight showing critical flight information
HLS	a helicopter landing site
HLS-NVIS basic	an HLS that does not conform to the requirement of an HLS-NVIS standard
HLS-NVIS standard	an HLS that does not conform to the requirement of an HLS-NVIS basic
HPL	the horizontal protection level of the GNSS position of an aircraft as an output of the GNSS receiver or system
human factors (HF)	the study of how human capabilities and limitations affect aviation safety and performance
IFR capable	for a rotorcraft, describes a circumstance in which the rotorcraft is: › equipped for IFR flight in accordance with the regulations; and › operated by a crew who meet the relevant requirements for IFR flight under Part 61 of CASR
in-flight medical emergency	an unexpected health crisis occurring during flight, requiring immediate response
instrument flight rules (IFR)	a set of regulations under which a pilot operates a rotorcraft primarily by reference to instruments rather than visual cues
journey log	a record of key flight details, including departure and arrival times, fuel usage, and crew assignments
key personnel	individuals designated in an operator's exposition as responsible for the safety and compliance of operations (e.g., CEO, Head of Flying Operations, Safety Manager)
line training	training conducted during actual commercial flight operations under the supervision of an instructor
low visibility operations (LVOs)	flight operations conducted in conditions of reduced visibility, requiring special procedures and equipment
may	indicates an option in the context of the requirement
medical transport operation (MTO)	an air transport operation conducted for the purpose of transporting medical personnel, supplies, or patients
minimum equipment list (MEL)	a list of the minimum operable equipment required for a flight to be conducted legally and safely
manual of standards (MOS)	refers to the Part 133 Manual of Standards
Mode A	a transponder function that transmits a 4-digit octal identification code for an aircraft's identity when interrogated by an SSR
Mode A Code	the 4-digit octal identification code transmitted by a Mode A transponder function
Mode C	a transponder function that transmits a 4-digit octal identification code for an aircraft's pressure altitude when interrogated by an SSR
Mode S	a transponder function that uses a unique aircraft address to selectively call individual aircraft, and supports advanced surveillance using Mode S EHS, Mode S ELS, or Mode S ES capabilities

Term	Meaning
Mode S EHS	Mode S enhanced surveillance, which is a data transmission capability of a Mode S transponder
Mode S ELS	Mode S elementary surveillance, which is a data transmission capability of a Mode S transponder
Mode S ES	Mode S extended squitter, which is a data transmission capability of a Mode S transponder used to transmit ADS-B OUT information
must	indicates an obligation or necessity (i.e., a mandatory requirement)
navigation accuracy category – position (NACp)	as specified in paragraph 2.4.3.2.7.2.7 of RTCA/DO–260B
navigation integrity category (NIC)	as specified in paragraph 2.2.8.1.16 of RTCA/DO–260B
Night Vision Goggles (NVG)	optical devices used to enhance pilot visibility in low-light conditions
navigation uncertainty category – position (NUCp)	as specified in paragraph 2.2.8.1.5 of RTCA/DO–260
night vision imaging system (NVIS)	a system that enhances visibility at night using specialised optical devices
NVFR capable	describes a circumstance in which the rotorcraft is: › equipped for flight at night under the VFR in accordance with the regulations; and › operated by a crew, each member of which meets the relevant requirements for a VFR flight by night under Part 61 of CASR
NVIS air crew member	for a particular NVIS operation, means an air crew member: › of an NVIS operator who holds an AOC for the NVIS operation; and › who is qualified (however described) to carry out the person's assigned functions as an air crew member for the operation
NVIS certified	a rotorcraft that has been modified and certified for NVIS operations by 1 of the following: › an approval under Part 21 of CASR › the type certificate holder under the type certificate › a supplemental type certificate
NVIS compatible lighting	rotorcraft interior or exterior lighting: › with spectral wavelength, colour, luminance level and uniformity, that has been modified, or designed, for use with NVIS; and › that does not degrade or interfere with the image intensification capability performance of the NVIS beyond acceptable standards mentioned in subsection 11.61(2)
NVIS crew member	an NVIS pilot or an NVIS air crew member
NVIS endorsement	an endorsement mentioned in column 2 of item 1 or item 2 in Table 61.1025 of CASR
NVIS flight	has the meaning given by the CASR Dictionary **Note:** NVIS flight means a flight conducted using a night vision imaging system.

Term	Meaning
NVIS operator	the operator for an NVIS operation
NVIS pilot	for an NVIS flight, means a pilot who: › holds each of the licences, ratings and endorsements required for the NVIS flight by Part 61 of CASR; or › if the rotorcraft is a foreign-registered rotorcraft – is authorised by the rotorcraft's State of registry to pilot the rotorcraft for the NVIS flight
NVIS proficiency check	has the meaning given by regulation 61.010 for night vision imaging system proficiency check
NVIS rating	a rating mentioned in column 2 of item 4 in Table 61.375 of CASR
operational control	the authority and responsibility for initiating, conducting, and terminating a flight
operational flight plan	a document detailing flight preparation, including route, fuel, weather, and rotorcraft performance considerations
operational flight risk assessment	a pre-flight evaluation of potential hazards affecting flight safety
operations manual	the terms "operations manual" and "exposition" are synonymous
operator	has the meaning given by the CASR Dictionary **Note:** The operator, of a rotorcraft, means: › if the operation of the rotorcraft is authorised by an AOC, a Part 141 certificate or an aerial work certificate – the holder of the AOC or the certificate; or › otherwise – the person, organisation or enterprise engaged in rotorcraft operations involving the rotorcraft.
Part	unless otherwise specified, refers to a part of the CASR
passenger list (manifest)	a document listing all passengers onboard, including embarkation and disembarkation details
performance class (PC1, PC2, PC3)	a classification system for rotorcraft based on operational performance and risk management criteria
performance class with exposure (PC2WE, PC3WE)	a classification system for rotorcraft based on operational performance and risk management criteria with one engine inoperative
person	can include the pilot, an operator, a passenger, a ground support person, or another person
pilot (noun)	refers to any flight crew member (not necessarily the pilot in command)
pilot (verb)	› to manipulate the flight controls of an aircraft during flight › to occupy a flight control seat in an aircraft during flight
pilot in command (PIC)	the pilot responsible for the operation and safety of a rotorcraft during flight time
recurrent training	ongoing training required at regular intervals to maintain crew competency and regulatory compliance
remedial training	additional training provided to crew members who fail to meet required performance standards

Term	Meaning
RTCA/DO–229D	document RTCA/DO–229D titled Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment, dated 13 December 2006, of the RTCA Inc. of Washington D.C. USA (RTCA Inc.)
RTCA/DO–260	RTCA Inc. document RTCA/DO–260 titled Minimum Operational Performance Standards for 1090 MHz Automatic Dependent Surveillance – Broadcast (ADS-B), dated 13 September 2000
RTCA/DO–260B	RTCA Inc. document RTCA/DO–260B titled Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services – Broadcast (TIS-B), dated 2 December 2009
safety area	an area: › that is free of obstacles, other than those: » with a height not exceeding 25 cm above the surface level of the area; or » that are required for air navigation purposes; and **Note:** Obstacles required for air navigation include, for example, a wind direction indicator. › whose purpose is to reduce the risk of damage to a rotorcraft if it accidentally diverges from the load-bearing area primarily intended for landing or take-off **Note:** The safety area does not need to be a solid surface. For example, a perforated metal deck may constitute part, or all, of a safety area.
safety management system (SMS)	a systematic approach to managing safety, including policies, risk management, and continuous improvement processes
safety oversight	the continuous monitoring of aviation activities to ensure compliance with regulations and safe practices
secondary surveillance radar (SSR)	a surveillance radar system, which uses transmitters/receivers (interrogators) and transponders
significant change	a modification to operations, personnel, or equipment that requires CASA approval before implementation
simulator check	an assessment of pilot competency conducted in a flight simulator
single-pilot operation	an operation in an aircraft, other than a multi-crew operation
situational awareness (SA)	a pilot's understanding of their surroundings, including rotorcraft status, weather, and air traffic
source integrity level (SIL)	as specified in paragraph 2.2.3.2.7.2.9 of RTCA/DO–260B
standard operating procedures (SOPs)	established procedures for consistent and safe flight operations
Subpart	unless otherwise specified, a subordinate part of Part 133
surveillance radar	radar equipment used to determine the position of an aircraft, in range and azimuth
take-off and landing minima	the minimum weather conditions required for safe take-off and landing

Term	Meaning
technical logbook	a record of a rotorcraft's maintenance, defects, and operational history
training and checking system	the structured process for ensuring that flight and ground personnel maintain required qualifications and competencies
training provider	for a person undertaking flight training: › the Part 141 or Part 142 operator conducting the training › the person conducting the training who holds an approval under regulation 141.035 or Part 142.040 to conduct the training
training syllabus	a structured curriculum outlining required training elements for flight crew
transport category aircraft	aircraft certified under specific airworthiness regulations (e.g., Part 29 for helicopters)
type rating	a certification required for pilots to operate specific aircraft types
used, using or uses	in relation to the use of NVIS, means used as the primary means of terrain avoidance for safe air navigation by means of visual surface reference external to the rotorcraft conducting the operation
visual flight rules (VFR)	rules of flight under which a pilot operates a rotorcraft using visual references rather than instruments
visual meteorological conditions (VMC)	weather conditions that allow pilots to operate using external visual references
winching operations	the process of lifting or lowering cargo or personnel using a hoist system on a rotorcraft

Appendix C: Exemptions included in this guide

Exemption/Instrument	Repeal Date	Section in this guide
CASA EX68/24 Part 119 of CASR – Supplementary Exemptions and Directions Instrument 2024	1 December 2027	section 2.7, 8.11, 17.16 and 23.2
CASA EX70/24 Part 133 and Part 91 of CASR – Supplementary Exemptions and Directions Instrument 2024	1 December 2027	section 16.1, 16.4 and 17.1
CASA EX73/24 Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2024	1 December 2027	section 4.9 and 5.2
CASA EX77/24 Transitional Training and Checking Requirements for Crew Members in Part 133 Operations – Exemption Instrument 2024	1 December 2027	section 18.2 and 18.8
CASA EX14/25 – Serviceability of Equipment under the Part 91, 121, 133 and 135 Manuals of Standards – Exemption Instrument 2025	28 February 2027	section 17.5 and 17.10
CASA EX91/24 – Use of Certain External Load Equipment in SAR and Medical Transport Operations – Exemption Instrument 2024 includes details on how to apply for permission	30 June 2026	section 8.8

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