Australian Government
Civil Aviation Safety Authority

Airspace Risk and Safety Management Guide

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This document contains guidance material intended to assist CASA officers, delegates and the aviation industry in understanding the operation of the aviation legislation. However, you should not rely on this document as a legal reference. Refer to the civil aviation legislation including the Civil Aviation Act 1988 (Cth), its related regulations and any other legislative instruments—to ascertain the requirements of, and the obligations imposed by or under, the law.

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Glossary

Acronyms and abbreviations

Acronym / abbreviation	Description
AAPS	Australian Airspace Policy Statement
ACP	Airspace Change Proposal/s
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIPSUP	Aeronautical Information Publication Supplement
AIRAC	Aeronautical Information Regulation and Control
ANAA	Air Navigation, Airspace and Aerodromes
ANSP	Air Navigation Services Provider
ARASMG	Airspace Risk and Safety Management Guide
ATS	Air Traffic Services
ATSB	Australian Transport Safety Bureau
AVSEF	Aviation State Engagement Forum
CAR	*Civil Aviation Regulation 1988*
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulation 1998*
DA	Danger Area
DAH	Designated Airspace Handbook
Defence	Department of Defence
ERSA	Enroute Supplement Australia
ICAO	International Civil Aviation Organization
NOTAM	Notice to Airmen
OAR	Office of Airspace Regulation
PRD	Prohibited, Restricted and Danger Area/s
RA	Restricted Area
QRIR	Quarterly Risk Indicator Review
SARPS	Standards and Recommended Practices
SUA	Special Use Airspace
TIFP	Terminal Instrument Flight Procedures
TRA	Temporary Restricted Area
the Act	Airspace Act 2007

the Regulations	Airspace Regulations 2007

Definitions

Term	Definition
Air traffic service	A generic term meaning (variously) flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).
Airspace classification	A volume of airspace classified as Class A, B, C, D, E, F or G, in accordance with ICAO Annex 11 – Air Traffic Services.
Airspace volume	Means a volume of airspace defined by reference to specified horizontal and vertical points.
Australian Administered Airspace	Airspace made up of the following components: • The airspace over Australian territory • The airspace that has been allocated by the International Civil Aviation Organization and which Australia has accepted responsibility • Airspace administered by Australia at the request of another country.
Australian Airspace System	Is a concept that incorporates aircraft operations, the rules of the air, air traffic services, communications, navigation and surveillance capabilities, supported by airspace design and airspace regulation, policy and administration.
Control area	A controlled airspace extending upwards from a specified limit above the earth,
Control zone	A controlled airspace extending upwards from the surface of the earth to a specified upper limit.
Controlled airspace	An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification. A generic term which covers ATS airspace Classes A, B, C, D & E.
Incident	An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.
Protective airspace	Airspace declared by the Office of Airspace Regulation following receipt and assessment of an Airspace Change Proposal. The airspace accommodates activities that may be incompatible with routine flying operations and could be declared as Prohibited, Restricted or Danger Area. Such airspace is predicated on an airspace risk assessment and enables an activity to be conducted to an Acceptable Level of Safety.

Revision History

Amendments/revisions of this guide are recorded below in order of most recent first.

Version No.	Date	Parts/Sections	Details
1.0	May 2022	All	First issue
1.1	August 2022	All	Administration error change version control change from 2.3 to v 1.1

1 Introduction

1.1 Purpose of this guide

The Civil Aviation Safety Authority (CASA) exercises its responsibility to administer and regulate Australian-administered airspace through the Office of Airspace Regulation (OAR).

The purpose of the Airspace Risk and Safety Management Guide (ARASMG) is to outline the OAR processes in performing the functions and exercising the powers pursuant to the *Airspace Act 2007* (the Act), *Airspace Regulations 2007* (the Regulations) and the *Australian Airspace Policy Statement 2021 (AAPS)*.

1.2 OAR structure

The OAR is overseen by the OAR Manager and comprises of two teams; an Airspace Operations Team and an Airspace Reform Team. When required, suitably qualified OAR staff can perform functions in either team.

1.2.1 Airspace Operations Team

The Airspace Operations Team is focused on the day-to-day administration and regulation of Australian-administered airspace including:

- declaring and disestablishing Special Use Airspace (SUA) areas such as Prohibited, Restricted and Danger Areas (PRDs).
- conducting ongoing airspace risk identification and mitigation processes.
- assessing and managing Airspace Change Proposals (ACP).
- ensuring appropriate consultation takes place with industry, air navigation service providers (ANSPs), the Defence and the public on airspace matters.
- providing airspace risk guidance to other business areas within CASA.

1.2.2 Airspace Reform Team

The Airspace Reform Team is focused on the strategic review of Australian-administered airspace in accordance with the Act. In undertaking this function, the team:

- Conducts risk profiling assessments of specific locations, and subsequent further investigation in response to the internal Quarterly Risk Indicator Review (QRIR)
- Conducts airspace reviews and aeronautical studies to determine the appropriateness of airspace classifications and the services and facilities provided by air navigation service providers in accordance with the Act, the Australian Airspace Policy Statement (AAPS) and International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs).
- Undertake airspace reform activities including the development, consultation, implementation and to assist with education of airspace matters.
- Research emerging technologies and the impact on the Australian aviation industry.

1.2.3 Defence Officers in the OAR

Defence officers are collocated with the OAR consistent with the Government's policy of a harmonised national civil and military air traffic management system and to effect better coordination of national civil and military airspace requirements.

1.3 OAR web page

The OAR has a dedicated section of the CASA website. The web page contains information about the OAR, airspace, environment, consultation, regulatory responsibilities and contact details.

2 Airspace legislative and policy framework

The Civil Aviation Act 1988, is the enabling legislation for the establishment of CASA, and has the primary aim of establishing a regulatory framework for maintaining, enhancing and promoting the safety of civil aviation, with particular emphasis on preventing aviation accidents and incidents. The Civil Aviation Act 1988 states that, 'In exercising its powers and performing its functions, CASA must regard the safety of air navigation as the most important consideration'.

The Act establishes a head of power for CASA to regulate and administer Australian-administered airspace to ensure it is used safely, taking into account protection of the environment, efficient use of that airspace, equitable access to that airspace for all users of that airspace and national security.

Australian administered airspace is made up of the following components:

- Airspace administered by Australia at the request of another country.
- The airspace that has been allocated by the ICAO and for which Australia has accepted responsibility.
- The airspace over Australian Territory:
  - the territory of Australia and of every external Territory
  - the territorial sea of Australia and of every external Territory
  - the airspace over any such territory or sea.

The Regulations confer functions and powers on CASA in connection with the administration and regulation of Australian-administered airspace, including:

- the determination of the classification of volumes of Australian-administered airspace in accordance with Annex 11 to the Chicago Convention, as Class A, B, C, D, E, F or G
- the determination of the services and facilities to be provided by the providers of air navigation services in relation to particular volumes of Australian-administered airspace
- the designation of volumes of Australian-territory for the purposes of prohibiting and restricting access to, or warning about dangers within or over, that airspace
- the designation of air routes and airways in Australian-administered airspace and the conditions of use of a designated air route or airway
- the giving of directions in connection with the use or operation of a designated air route or airway or of air route or airway facilities
- the determination of aerodromes as controlled aerodromes
- the determination of volumes of Australian-administered airspace as flight information regions, flight information areas, control areas or control zones
- review of instruments made under the regulations.

Defence has limited powers under the Defence (Special Undertakings) Act 1952 to declare airspace. Defence may declare Prohibited Areas over land and water when required for the

defence of Australia. Defence may also declare Restricted Areas which prohibit or restrict flight over an area when required to protect a Defence special undertaking.

In addition to the Act and Regulations, the AAPS made by the Minister for Infrastructure, Transport and Regional Development under the Act, establishes the Australian Government's policy objectives for CASA's administration and regulation of Australian-administered airspace.

The CASA Corporate Plan, overseen by the CASA Board, presents CASA's goals, strategies and initiatives to support the Government's aviation policy. The Corporate Plan expresses what CASA has set out to achieve and how CASA will measure its performance to improve aviation safety in Australia and contribute to global aviation safety initiatives through ICAO.

3 Regular reviews of Australian-administered airspace

3.1 General

The Act requires CASA to conduct regular reviews of Australian-administered airspace to[1]:

- determine whether the airspace classifications, air routes and the air navigation services provided are appropriate.
- identify risk factors to determine whether safe and efficient use of that airspace and equitable access to that airspace for all users exists.

The ARASMG outlines different levels of reviews of Australian-administered airspace:

- **Risk Profiling**: As per the requirements in the AAPS 2021, this document contains current data analysis of traffic types and density; the wider operating environment; present and emerging airspace risks; public, industry and government agency comments; government policy objectives; and planned future activity. It should also consider any risk mitigations already in place or planned at the location to ensure it is structured and comprehensive. All information gathered will be used for the overall analysis and determination of airspace risk and provide the basis for further investigation in the form of a preliminary airspace review, airspace review or aeronautical study.
- **Preliminary Airspace Review:** The purpose of this review is to focus on one location over a condensed period of time, to gain a 'snap-shot' of the current airspace environment and operations at this location.
- **Airspace Review:** A more in-depth examination than a Preliminary Airspace Review that examines the airspace around a location over a medium-term time period. Surrounding aerodromes and their operations, with respect to how they interact with the chosen location, will be considered. Growth projections and future operations with respect to how they will impact the airspace will be considered.
- **Aeronautical Study:** An extensive body of work, usually commensurate with a significant change or proposal that affects the airspace. The purpose of an Aeronautical Study is to assess the airspace arrangements to determine if they are appropriate in the context of any identified risks. The scope of this study will be determined by the complexity of the location and will likely involve the input of several OAR staff and other CASA business areas. Aeronautical studies are normally undertaken over a period of many months.

3.2 Review Methodology

The level of detail in the review varies depending on the on the type of review being conducted, the methodology may include the following:

- Analysis of aircraft movements, passenger movements, aircraft types and recorded airspace incident data.
- Examination of the Aeronautical Information Publication suite of documents including aeronautical charts, terminal instrument flight procedures (TIFPs), Enroute Supplement Australia (ERSA) and the Designated Airspace Handbook (DAH).

[1] Section 13 of the *Airspace Act 2007*

- Evaluation of recommendations, observations or suggested enhancements made in the previous review or study.
- Input from the OAR and other business groups within CASA including intelligence information.
- Interaction with stakeholders including the ANSP, Defence, airspace users, aerodrome operators and representative organisations.
- Publication of a draft paper for internal and external input if applicable.
- Publication of the final version of the document.

4 Airspace change

4.1 Airspace change process

A non-urgent airspace change pursuant to the Act is required to submit an Airspace Change Proposal (ACP) form which is available from the CASA website[2].

An ACP is typically submitted when a risk has been identified in the current airspace and cannot be mitigated using available controls by the proponent. Alternatively, the outcome of a review may determine that an airspace change is required, and where possible, the OAR will recommend a third party submits the ACP.

An ACP can be categorised as temporary, permanent, urgent, or routine. The ACP assessment and analysis timeframe is dependent on the size, complexity and quality of the application. It is recommended the proponent submits an ACP *at least 8 weeks* prior to their intended start date, as this will allow adequate time for an AIP Supplement (AIPSUP) preparation if required. However, where additional information is required to be supplied by the proponent, the review process is either paused until that information is submitted or is rejected requiring resubmission. The timeframe will recommence upon receipt of the information and at the working day when the process was paused.[3] Where an ACP is required to be resubmitted, the review timeframe is reset.

Where a significant or major change to large volumes of airspace is being proposed, it is recommended the proponent liaise with the OAR prior to the submission of the ACP, the OAR will provide guidance on the expectation of what information will be required.

OAR staff are available to provide some degree of assistance to proponents during the ACP process however, this does not provide a guarantee that the ACP will be approved.

4.1.1 What is the airspace change process applicable to?

An airspace change may cover the following:

- The determination of an airspace classification.
- The determination of controlled airspace.
- The designation of SUA including Prohibited Areas (PA), Restricted Areas (RA) or Danger Areas (DA) in permanent or temporary category.
- Changes to the type of operation within a volume of airspace, e.g. from flying to firing or both, and/or the conditions of its use.
- Changes to the Air Traffic Services (ATS) within a volume of airspace.
- Temporary and emergency situations requiring protective airspace.
- Changes to air routes.
- Changes to the controlling authority or contact for a given volume of airspace.

4.2 Airspace change proposal contents

An ACP Form 1284 must be submitted in completion to initiate the ACP process. The proponent is expected to provide evidence of:

[2] CASA Airspace Change Proposal – Form 1284

[3] Timings regarding dispatching and receiving information is in accordance with the Electronic Transactions Act 1999.

- a risk or safety assessment commensurate with the change or activity proposed[4]:
  - include the detail of the safety/risk assessment
  - identify any residual risk and how this will be mitigated by the proposed change
  - identify any impact on:
    - safety of air transport operations
    - TIFPs
    - efficiency of the airspace
    - equitable access for other airspace users
    - national security if applicable
- a thorough record of completed consultations with other airspace users and stakeholders in the area to be affected by airspace change, including outcomes of issues highlighted during the consultations, utilising the Aviation State Engagement Forum (AVSEF). This should include copies of stakeholder feedback received by the proponent as part of their submission. If the proposal is a for a permanent change, the public affected by the change should also be consulted.
    - CASA may publish contact details of the proponent for public information on the external CASA website. The public can contact the proponent for additional information on the ACP.
    - The OAR may undertake additional consultation at their discretion.
- an environmental assessment.[5]
- where applicable, adherence to the Aeronautical Information Regulation and Control (AIRAC) cycle ensures the coordinated publication of safety-critical aviation information.

4.2.1 UTC or Local time (E.g. AEST)

The proposed airspace start and stop dates and times must be stated in the ACP. There is no preference from the OAR if this information is provided in UTC (Coordinated Universal Time) or Australia local time depending on the activity location, however it must be consistent throughout the ACP Form 1284, AVSEF paper and any other reference to the activation times.

Please note NOTAMS for TRAs and TDAs are published in UTC.

4.2.2 Location using latitude & longitude

Specific location coordinates of the proposed airspace change and activity must be included in the ACP. Where possible, provide the latitude and longitude coordinates in degrees, minutes, seconds.

4.2.3 Controlling Authority

[4] As a minimum, an airspace risk assessment using CASA Form 1589 - Airspace Risk Assessment Template is required. The Australian/New Zealand Standard on Risk Management – Principles and Guidelines (AS/NZS ISO 31000:2018) is suitable.

[5] ACPs for controlled and uncontrolled airspace and PRDs established for public safety, including the safety of aircraft in flight, and national security require an assessment for their impact on matters of national environmental significance. The airspace change proponent can complete part of this assessment by accessing the Protected Matters Search Tool. Local knowledge and information should also be sought where possible.

When CASA declares a TRA under subregulation 6(3) it will appoint a controlling authority to be responsible for approving access to the airspace which is the subject of the TRA. Where the TRA is in controlled airspace, Airservices Australia or the Department of Defence will be the controlling authority. Where the TRA is in uncontrolled airspace, the controlling authority will be the law enforcement; emergency services agency or other organisation responsible for coordinating the operations (excluding providing a traffic service) in the airspace, or on the ground below it.

The identity of the controlling authority will be specified in the TRA NOTAM which declares the TRA. The NOTAM will generally provide that access to the TRA is not permitted without approval from the controlling authority. The controlling authority must ensure that it is contactable by the published method specified in the NOTAM at all times when the TRA is active.

4.3 Urgent ACP

Urgent airspace change requests are for temporary PRD in response to emergency events which pose a risk to aviation or public safety, security or the environment. These are considered urgent requests and the OAR will action these requests with the highest priority.

After receipt of CASA Form 1284 advised as urgent or when advised of an urgent change by other means, the OAR Duty Delegate will determine whether an abbreviated assessment process is appropriate. Urgent change proposals can usually be processed quickly and regulatory action taken 24 hours a day. The emergency OAR out of hours phone number is 02 6217 1177.

Following the assessment, the proponent will be advised whether approval has been granted. If approved, an OAR Instrument is prepared for signature by the Delegate and action taken to promulgate the change through the Aeronautical Information Service process.

The change does not become effective until publication in the integrated AIP and/or as a NOTAM.

4.4 ACP evaluation and assessment

While the core principles for assessing airspace change proposals remain common regardless of the request, the process used for evaluating an ACP will vary depending upon what type of change has been proposed. The following criteria are used during the assessment and evaluation process of any ACP:

- Safety
- Protection of the environment
- Equitable access
- Efficient use of airspace
- National security
- cost implications for all airspace users
- current and future needs of the Australian aviation industry
- international practice as may be adapted to benefit Australia’s aviation environment
- ICAO SARPs
- advances in technology

4.5 ACP assessment process

The OAR will undertake the following steps in assessing and evaluating an ACP.

- **ACP submitted** – The ACP will initially be assessed for completeness. The proponent is informed if there is sufficient information to commence the evaluation. If the ACP is incomplete further assessment will not be undertaken until the required information is provided.
- **ACP assessment** – The ACP will be reviewed and assessed consistent with the Act and other legislative requirements, policies and standards.
- **ACP recommendation or determination** – The ACP will be recommended to a Delegate for consideration. Not all ACPs will receive a recommendation or approval. This may be due to criteria not being met or the OAR may identify an alternate solution for achieving the intended safety, environment or national security outcomes.
- **ACP final assessment** – Following the final assessment, the proponent will be advised if approval has been granted. If approved, an OAR Instrument is prepared for signature by the Delegate and action taken to promulgate the change through the Aeronautical Information Service process. The change does not become effective until publication in the integrated AIP and/or as a NOTAM.

4.5.1 Timeframe of an ACP assessment

The processing and assessment time of an ACP varies depending on the complexity of the submission, the quality of supporting evidence and documentation supplied with the initial submission and OAR workload. It is recommended to submit an ACP *at least* 8 weeks prior to the commencement of the intended start date, the completed AVSEF consultation (minimum 14 days consultation period) should be included in the submission. Please note for more complex ACPs, this timeline should be increased to allow a thorough assessment.

4.6 Stakeholder Consultation

An ACP submission must include evidence of industry consultation through the Aviation State Engagement Forum (AVSEF) for a minimum of 14 days consultation period. Evidence provided must include records of any comments or feedback received during the consultation period.

The AVSEF consultation paper will outline the purpose, originator (including contact details), date when feedback is sought by and an outline of the matter – along with diagrams/charts should they be needed. Publishing and notifications of new papers occur on Thursday of each week.

In addition, proponents can conduct their own direct industry consultation where and when required, this can be through direct email communication and evidence will need to be provided within the ACP submission.

4.7 Current ACPs under assessment

In addition to the AVSEF website which identifies future proposed airspace changes, the OAR frequently updates a table of ACPs currently under assessment for public viewing. This table is available on the CASA website.

5 Additional OAR Responsibilities

In addition to the airspace reviews/studies and ACPs, the OAR undertakes several other key responsibilities. These include but are not limited to Prohibited, Restricted, Danger (PRD) Area reviews and the Quarterly Risk Indicator Reviews (QRIR).

5.1 Prohibited, Restricted and Danger Area Reviews

The OAR conducts three yearly PRD Area reviews. This review is conducted with the intention of ensuring all PRD are providing adequate protection for the airspace activities taking place within the boundaries. The specifics components of the PRD audit include:

- Lateral confines
- Vertical limits
- Type of activity
- Frequency and hours of activation
- Controlling authority
- RA status only applicable to restricted areas
- Contact details

5.2 Quarterly Risk Indicator Reviews (QRIR)

The QRIR is the OARs primary means of compliance with its obligation to undertake regular reviews in accordance with the Airspace Act 2007, Airspace Regulations 2007 and the AAPS 2021. The QRIR is considered a “coarse filter” that applies movement and passenger criteria thresholds, along with incident reports and an estimate of the mix of operations within the airspace volume to develop a risk score for aerodromes. This risk score is used to rank aerodromes in order of “potential airspace risk” which is then used to identify those locations that might require further investigation. Further investigation can include, but is not limited to, the reviews described in Section 3.1 of this document.

The QRIR is intended to identify locations where the conditions for elevated airspace risk might reside. In this fashion the OAR is alerted to those locations.

The QRIR considers the following when determining the relative airspace risk score for an aerodrome’s airspace:

- aircraft movements
- passenger movements
- Aviation Safety Incident Reports (ASIR)
- IFR to VFR traffic ratios
- Previous airspace assessments

While the QRIR is the primary means of identifying airspace risk it is by no means the sole method. The OAR gathers information from many sources to identify potential airspace risk such as ACP submissions, AvSafety seminars, stakeholder engagement, industry intelligence or future airspace planning.

5.3 Aircraft Noise

The OAR does not manage aircraft noise complaints, please contact Airservices Australia dedicated Noise Complaints and Information Service.